ACC 101

Accounting Principles I

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 032, MAT 032, RDG 032
Co-requisite: None

Course Description:
This course introduces basic accounting procedures for analyzing, recording, and summarizing financial transactions, adjusting and closing the financial records at the end of the accounting cycle, and preparing financial statements. Emphasis is also placed on accounting for current and long-term assets, current and long-term liabilities, statement of cash flow and financial statement analysis.

Course Topics:
- T-accounts and journal entries
- Financial Statements
- Adjusting Entries
- Closing entries
- Inventories
- Special Journals
- Bad Debt Expense
- Depreciation
- Payroll
- Petty cash and Bank Reconciliation
- Internal Control

Required Materials:
- Computer and Internet Access
- Publisher’s Access Code is required for online component

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Apply basic double-entry accounting procedures.
- Construct Financial Statements.
- Identify and perform accounting practices for short-term liquid assets.
- Apply basic principles of accounting internal control over cash.
- Apply adjusting and closing procedures to complete the accounting cycle.
- Evaluate and perform the accounting concepts associated with inventories and a merchandising business.
- Apply accounting procedures to the acquisition and depreciation of property, plant and equipment.
- Identify and perform accounting practices for current liabilities and payroll activities.

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ACC 102

Accounting Principles II

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ACC 101 with a minimum grade of “C.”
ACC 111
Accounting Concepts

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 032, MAT 032, RDG 032
Co-requisite: None

Course Description:
This course is a study of the principles of the basic accounting functions—collecting, recording, analyzing, and reporting information.

Course Topics:
- T-accounts and journal entries
- Financial Statements
- Adjusting Entries
- Closing entries
- Special Journals
- Schedule of Accounts Payable and Accounts Receivable
- Payroll
- Petty cash and Bank Reconciliation
- Internal Control over cash

Required Materials:
- Computer and Internet Access

Grading System:
- A 90 – 100
- B 80 – 89
- C 70 – 79
- D 60 – 69
- F 0 – 59

Student Learning Outcomes:
- Evaluate accounting concepts for partnerships and common and preferred stock.
- Demonstrate and identify the accounting procedures associated with bonds and investments.
- Calculate and analyze financial statements.
- Prepare a cost of goods manufactured schedule, cost of production report and a job order cost sheet.
- Prepare and analyze the statement of cash flows.
- Identify and perform basic procedures associated with budgeting.
- Calculate variances for direct materials, direct labor and overhead.
- Apply cost volume profit analysis techniques.

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An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:

- Apply basic double-entry accounting procedures.
- Construct Financial Statements.
- Apply basic accounting internal control principles over cash.
- Apply adjusting procedures and closing procedures.
- Demonstrate the accounting procedures for special journals.
- Identify and perform accounting practices for payroll activities.

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ACC 124
Individual Tax Procedures

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ACC 101 or ACC 111
Co-requisite: None

Course Description:
This course is a study of the basic income tax structure from the standpoint of the individual, including the preparation of individual income tax returns.

Course Topics:
- History of the tax system
- Depreciation
- Capital Gains and Losses
- Payroll Taxes
- Credits and Special Taxes
- Earned Income Credit, Child Tax Credit, and Education Tax Credits
- Tax forms for a Partnership and Corporation
- Tax Planning
- Prepare Schedules A, B, C, D, E, SE
- Prepare Tax Forms 1040, 1040A and 1040EZ
- Retirement Plans

Required Materials:
Computer and Internet Access

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:

- Summarize and apply the components of an individual income tax return.
- Differentiate between the tax treatment of gross income and exclusions.
- Record business expenses, retirement plans, and employee expenses on tax forms.
- Record itemized deductions and credits.
- Apply various depreciation methods and calculate capital gains and losses.
- Record withholdings, estimated payments and payroll taxes on appropriate tax forms.
- Apply tax concepts to partnerships and corporations.
- Identify effective tax administration and tax planning techniques.

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ACC 150
Payroll Accounting

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ACC 101 or ACC 111 with a minimum grade of "C."

Co-requisite: None

Course Description:
This course introduces the major tasks of payroll accounting, employment practices, federal, state, and local governmental laws and regulations, internal controls, and various forms and records.

Course Topics:
- Payroll and Personnel laws and records
- Computing wages and salaries
- Social Security Taxes and Medicare
- Unemployment Compensation Taxes
- Workman's Compensation
- Payroll Journal Entries
- Completing forms 941 and 940
- Income Tax Withholdings
- Computerized Payroll Systems
- Completion of a payroll cycle
- Payroll register and W-2

Required Materials:
Computer and Internet Access

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Discuss the need for payroll and personnel records.
- Analyze and calculate wages and salaries.
- Apply appropriate accounting procedures for Social Security Taxes.
- Analyze and employ appropriate procedures in accounting for income tax withholdings.
- Evaluate and record unemployment compensation taxes.
- Analyze and prepare a payroll register and record payroll transactions.
- Demonstrate payroll accounting procedures using computerized software.
- Describe the basic principles of accounting internal controls.

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ACC 201
Intermediate Accounting I

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ACC 102 with a minimum grade of "C."
Co-requisite: None

Course Description:
This course explores fundamental processes of accounting theory, including the preparation of financial statements. Topics will include current asset and liability management as well as future and present value of cash flows.

Course Topics:
- T-accounts and journal entries
- Financial Statements: Classified Balance Sheet and a Multi-Step Income Statement
- Completing of the Accounting Cycle to include Adjusting Entries and Closing Entries
- Time Value Of Money
- Inventories: FIFO, LIFO, Average, and Lower Of Cost Or Market
- Analysis of Accountings Receivable and Bad Debt Expense
- Depreciation Methods: straight Line, Declining Balance, Units of Production and Sum Of Years
- Amortization of Intangible Assets, Depletion of Natural Resources and Research and Development
- Short Term Liquid Assets: Petty cash and Bank Reconciliation
- Internal Control

Required Materials:
- Computer and Internet Access
- Publisher's Access Code is required for online component

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:

- Apply basic double-entry accounting procedures.
- Apply adjusting and closing procedures to complete the accounting cycle.
- Construct Financial Statements, providing financial disclosure notations.
- Identify accounting practices for cash, receivables, and internal control.
- Apply basic principles of revenue recognition.
- Evaluate and perform the accounting concepts associated with inventories and a merchandising business.
- Demonstrate the accounting procedures for the acquisition, disposal and depreciation of property, plant and equipment.
- Calculate the time value of money concepts within accounting topics.

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ACC 202
Intermediate Accounting II

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ACC 201 with a minimum grade of “C.”
Co-requisite: None
Course Description:
This course covers the application of accounting principles and concepts to account evaluation and income determination, including special problems peculiar to corporations and the analysis of financial reports.

Course Topics:

- Short and Long Term Investments
- Current and Contingent Liabilities
- Bonds Payable
- Leases
- Pension and Postretirement Benefits
- Income Tax
- Stock, Earnings Per Share and Stockholders
- Statement Of Cash Flows
- Accounting Changes and Errors

Required Materials:

- Computer and Internet Access
- Publisher's Access Code is required for online component

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:

- Apply appropriate accounting procedures for current, long-term, and contingent liabilities.
- Analyze and employ appropriate procedures for stockholders equity and Earnings Per Share.
- Evaluate and record temporary and long-term investments.
- Identify the accounting issues associated with income taxes.
- Analyze the accounting procedures for Pensions and Postretirement Benefits.
- Evaluate accounting for leases.
- Evaluate accounting changes and errors and make the appropriate adjustments.
- Prepare a Statement Of Cash Flows.

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ACC 224
Business Taxation
ACC 230

Cost Accounting I

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ACC 102 with a minimum grade of "C."
Co-requisite: None
Course Description:

This course is a study of the accounting principles involved in job order cost systems. Topics will include the general flow of costs through a production cycle, and the preparation and use of job cost sheets. Process cost systems will be introduced.

Course Topics:

• Pre-determined Overhead Rate
• Absorption costing
• Variable costing
• Activity based costing
• Master budget
• Break-even analysis
• Cost-volume-profit analysis
• Process costing
• Equivalent Units of Production

Required Materials:

Online component access code (see instructor for details)

Grading System:

An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:

• Identify and explain the components of tax as it relates to the U.S. Tax Law and system.
• Analyze the impact of taxes on financial statements.
• Explain the concept of Gross Income.
• Evaluate Business Deductions.
• Evaluate the components of Property Transactions.
• Identify Losses and loss limitation.
• Explain the principles and tax effects of partnerships, S-Corporations and Limited Liability entities.
• Identify the comparative forms of doing business.
• Evaluate the tax implication of corporations.

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C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:

- Analyze predetermined overhead rates, flexible budgets and absorption/variable costing.
- Compute product costs, overhead allocations, and overhead variances.
- Apply and evaluate the procedures for activity based costing.
- Develop and analyze a master budget.
- Apply the techniques involved in break-even analysis and cost-volume profit analysis.
- Prepare journal entries to account for variances.
- Compute equivalent units of production for process costing.
- Compute review problem solutions in a team based environment.

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ACC 246
Integrated Accounting Software

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ACC 101 or ACC 111 with a minimum grade of "C."
Co-requisite: None
Course Description:

This course includes the use of pre-designed integrated accounting software for accounting problems.

Course Topics:

- Back-up files
- Restore back-up files
- Financial statements
- Journal entries
- Create new company
- Chart of accounts
- Cash and accrual business activities
- Reporting business activities
- Adjusting and closing entries

Required Materials:

- Student textbook with software CD required

Grading System:

An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:

- Complete lists, tasks, analysis and reports of an integrated accounting system.
- Prepare financial reports using accounting software.
- Create supporting reports for business decisions.
- Complete the procedure for setting up a new company.
- Complete the procedure for cash-oriented and accrual business activities.
- Complete the procedure for adjusting entries and bank reconciliations.
- Complete the budgeting process.
- Export reports to Excel, Word or PDF files.

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ACC 260
Auditing

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ACC 201 and ACC 230
Co-requisite: None
Course Description:

This course is a study of the procedures for conducting audits and investigations of various enterprises.
ACC 265
Not-for-Profit Accounting

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ACC 102 with a minimum grade of "C."
Co-requisite: None

Course Description:
This course introduces the special accounting needs of municipalities, counties, states, the federal government and governmental agencies, and other not-for-profit organizations.

Course Topics:
- Characteristics of governmental and non-profit organizations.
- GAAP as it applies to Governmental and non-profit organizations.
- Journal entries
- Fund accounting
- Expenditure accounting
- Enterprise funds
- CAFR analysis
- Accounting principle applied to governmental and non-profit organizations

Required Materials:
- None

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Explain accounting similarities and differences between profit seeking and governmental/non-profit organizations.
- Analyze the sources of GAAP for governmental and non-profit organizations.
- Analyze transactions of fund accounting.
- Apply budgeting techniques for governmental and non-profit accounting.
- Analyze and prepare journal entries for record common transactions.
- Analyze expenditure accounting for governmental funds.
- Analyze CAFR or audited financial statements.
- Prepare basic financial statements and required supplementary information

ACC 275
Selected Topics in Accounting

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ACC 201 and ACC 230
Co-requisite: None

Course Description:
This course provides an advanced in-depth review of selected topics in accounting using case studies and individual and group problem solving.

Course Topics:
- Completion of a manual accounting cycle
- Sarbanes Oxley
- International Financial Reporting Standards
- Case studies

Required Materials:
- None
Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:

- Demonstrate completion of the accounting cycle for a business using manual accounting processes.
- Prepare a business tax return.
- Prepare a business budget.
- Analyze a business using ratios.
- Analyze Sarbanes Oxley for internal controls.
- Compare and contrast the International Financial Reporting Standards to the U.S. reporting standards.
- Analyze case studies of specific accounting topics, including ethics.
- Solve complex accounting issues by applying analysis skills to business situations.

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ACR 101
Fundamentals of Refrigeration

Hours: Class 3, Lab 6, Credit 5
Pre-requisite: None
Co-requisite: None
Course Description:
This course covers the refrigeration cycle, refrigerants, pressure temperature relationship, and system components.

Course Topics:

- Introduction to Refrigeration
- Refrigeration Cycles/Diagrams
- Metering Devices, Condensers, Evaporators, Compressors
- Tooling and Equipment

Required Materials:
- Clear Safety Glasses

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:

- Connect a refrigeration manifold to an operating unit.
- Analyze the refrigerant suction pressure information.
- Analyze the refrigerant discharge pressure information.
- Determine the superheat requirements for the system.
- Determine the subcooling requirements for the system.

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ACR 106
Basic Electricity for HVAC/R

Hours: Class 3, Lab 3, Credit 4
Pre-requisite: None
Co-requisite: None
Course Description:
This course includes a basic study of electricity, including Ohm's Law and series and parallel circuits as they relate to heating, ventilating, air conditioning and/or refrigeration systems.

Course Topics:

- Basic Electricity

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Electrical Components
Electrical Circuits and Controls

Required Materials:
- Clear Safety Glasses

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Test and check equipment for the proper voltage.
- Test and check equipment for the proper amperage.
- Use a VOM.
- Test equipment electrical fused disconnects, determining if the correct voltage requirements are present.
- Successfully rewire the components of a split air conditioning condenser.
- Check and safely replace a blown fuse.

ACR 110
Heating Fundamentals

Hours: Class 3, Lab 3, Credit 4
Pre-requisite: ACR 106, ACR
Co-requisite:
Course Description:
This course covers the basic concepts of oil, gas, and electric heat, their components and operation.

Course Topics:
- Introduction to Heating
- Heating: Servicing and Testing Equipment
- Forced Warm Air Systems
- Residential Control Systems _ Heating/Cooling

Required Materials:
- Clear Safety Glasses

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Check and adjust inlet pressure of a gas valve.
- Use electrical schematics.
- Locate safety controls.
- Explain electric heat.
- Explain electrical sequencer.

ACR 120
Basic Air Conditioning

Hours: Class 3, Lab 3, Credit 4
Pre-requisite: ACR 101
Co-requisite: None
Course Description:
This course is a study of various types of air conditioning equipment including electrical components, schematics and service to the refrigerant circuit.

Course Topics:
- Residential Control Systems _ Heating/Cooling
- Service and Problem Analysis
- System Applications
- Air Conditioning Start-up, Checkout, and Operation

Required Materials:
- Clear Safety Glasses

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Identify the relationship between temperature and pressure using the P/T chart.
- Record system data for the mechanical system operation.
- Check for proper refrigerant charge.
- Reclaim refrigerant from equipment using manufacturers information.
- Draw a basic air conditioning system refrigerant circuit and label the components.

ACR 125
Fundamentals of HVAC

Hours: Class 3, Lab 3, Credit 4
Pre-requisite: None
Co-requisite: None
Course Description:
This is a survey course which covers basic concepts related to heating, ventilation, and air conditioning and/or refrigeration.

Course Topics:
- Introduction to Refrigeration
- Refrigeration: Servicing and Testing Equipment
- Mechanical System Problems
- Refrigerant Recovery, Recycling, and Reclamation Method

Required Materials:
- Clear Safety Glasses

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Measure and record the properties of air.
- Use a thermometer to measure and plot dry bulb air temperature on a psychrometric chart.
- Use a thermometer to measure and plot wet bulb air temperature on a psychrometric chart.
- Use a psychrometric chart to find solutions to various air condition related problems.
- Determine relative humidity based on dry bulb, wet bulb and dewpoint temperatures.

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ACR 130
Domestic Refrigeration
ACR 140

Automatic Controls

Hours: Class 2, Lab 3, Credit 3
Pre-requisite: ACR 106
Co-requisite: None

Course Description:
This course is a study of the adjustment, repair and maintenance of a variety of pressure and temperature sensitive automatic controls.

Course Topics:
- Electrical Testing Devices/Meters
- Electrical Components
- Electrical Circuits and Controls
- Electrical Troubleshooting

Required Materials:
- Clear Safety Glasses

Grading System:
An overall grade of C or higher is required for transferability.
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Draw a wiring diagram for a basic air conditioner with either a line or low voltage control system.
- Record electrical system data.
- Convert a schematic diagram to a "ladder" diagram in a drawing.
- Setup a residential heating and cooling thermostat for installation.
- Assemble wiring circuits.

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ACR 175

EPA 608 Certification Preparation

Hours: Class 1, Lab 0, Credit 1
Pre-requisite: 
Co-requisite: None
Course Description:
This course covers EPA guidelines and procedures required by law for refrigerant recovery and recycling during the installation, service, and repair of all HVAC and refrigeration systems. A comprehensive review of essential material necessary to take the EPA 608 exam will be included.

Course Topics:
- Refrigerant Recovery, Recycling, and Reclamation Equipment
- Refrigerant Recovery, Recycling, and Reclamation Methods
- Refrigeration: Servicing and Testing Equipment
- Handling of Pressurized Fluids

Required Materials:
- Clear Safety Glasses

Grading System:
An overall grade of C or higher is required for transferability.
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:

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ACR 210

Heat Pumps

Hours: Class 3, Lab 3, Credit 4
Pre-requisite: ACR 120, ACR 140
Co-requisite: None
Course Description:
This course is a study of theory and operational principles of the heat pump.

Course Topics:
- Heat Pump Controls
- Metering Devices
- Heat Pump Start-up, Checkout, and Operation
- Heat Pump: Service and Problem Analysis

Required Materials:
- Clear Safety Glasses

Grading System:
An overall grade of C or higher is required for transferability.
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Explain the operation and function of a reversing valve.
- Select and install appropriate system thermostat.
- Wire the control circuit of a heat pump system.
- Rewrite an HVAC unit using an electrical diagram: heat pump.
- Test and evaluate the operation of the refrigeration cycle in cooling and heating modes.

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ACR 221
Residential Load Calculations

Hours: Class 2, Lab 0, Credit 2
Pre-requisite: ACR 125
Co-requisite: None
Course Description:
This course is a study of heat losses/gains in residential structures.

Course Topics:
- Heating Loads
- Cooling Loads
- Interpret structure design data

Required Materials:
- Clear Safety Glasses

Grading System:
An overall grade of C or higher is required for transferability.
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Interpret structure design data.
- Calculate total heating load.
- Calculate total cooling load.
- Collect building data.
- Locate outside design conditions.

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ACR 224
Codes and Ordinances

Hours: Class 2, Lab 0, Credit 2
Pre-requisite:
Co-requisite: None
Course Description:
This course covers instruction on how to reference appropriate building codes and ordinances where they apply to installation of heating and air conditioning equipment.

Course Topics:
- Codes and Standards
- Description of codes
- State and Local Licensing Requirements

Required Materials:
- Clear Safety Glasses

Grading System:
An overall grade of C or higher is required for transferability.
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Explain state and local licensing requirements.
- Describe the reasons for codes.
- Identify the codes and standards for the applicable area, locality, and state.
- Compare piping materials.
- Diagram shutoff valve location.

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ACR 240
Advanced Automatic Controls

Hours: Class 2, Lab 3, Credit 3
Pre-requisite:
Co-requisite: None
Course Description:
This course is a study of pneumatic and electronic controls used in air conditioning and refrigeration.

Course Topics:
- Commercial Control Systems
- Central Station Systems
- Residential Control Systems _ Heating/Cooling

Required Materials:
- Clear Safety Glasses

Grading System:
An overall grade of C or higher is required for transferability.
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:

AET 111

Architectural Computer Graphics I

Hours: Class 2, Lab 3, Credit 3
Pre-requisite: EGT 151
Co-requisite: None
Course Description:
This course includes architectural/construction, basic computer-aided design commands, and creation of construction industry symbols and standards.

Course Topics:
- Career opportunities in Architectural Technology.
- Responsibilities of design professionals in the architectural field.
- The principles of orthographic projection.
- Proportional freehand sketching.
- Computer aided architectural drafting.
- Simple site plan from field notes.
- Residential floor plan using CADD software.

Required Materials:
- Portable electronic Storage Medium (USB drive).
- Helpful, but not required: Sketching Paper, Sketching Pencils, Graph paper, Vinyl Eraser,
- Calculator

Grading System:
An overall grade of C or higher is required for transferability.
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
AET 221
Architectural Computer Graphics II

Hours: Class 3, Lab 3, Credit 4
Pre-requisite: AET 111
Co-requisite: None

Course Description:
This course includes a study of CAD commands with architectural applications and routines. A complete set of working drawings of a residential or commercial building using the computer as the drafting tool is produced.

Course Topics:
- Room sizes and relationships.
- Sketching a residential home
- Floor plan symbols.
- Drafting and dimensioning a floor plan.

Required Materials:
- Portable electronic Storage Medium (USB drive)
- Calculator
- Helpful, but not required Sketching Paper, Sketching Pencils, Graph paper, Vinyl Eraser

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Establish room sizes and relationships in a residential floor plan.
- Create a residential floor plan showing the dimensions.
- Produce exterior elevations of a residential home.
- Print a multi-view drawing using layout space.
- Create a roof plan and elevation.

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AET 235
Architectural 3-D Rendering

Hours: Class 2, Lab 3, Credit 3
Pre-requisite: Take EGT-151 and AET-111 minimum grade of "C."
Co-requisite: None

Course Description:
Topics in this course include 3-D rendering of residential and commercial buildings, walk-through animations, animated site plans and advanced graphics topics and their relationship to illustration of code compliance and project planning.

Course Topics:
- Standard residential floor plan
- Modify drawings
- Create elevation
- Create documentation

Required Materials:
- Portable electronic Storage Medium (USB drive)
- Helpful, but not required Sketching Paper, Sketching Pencils, Graph paper, Vinyl Eraser
- Calculator

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59
AHS 101
Introduction to Health Professions

Hours: Class 2, Lab 0, Credit 2
Pre-requisite: None
Co-requisite: None

Course Description:
This course provides a study of the health professions and the health care industry.

Course Topics:
- Health Careers
- Working in Health Care
- Communication in Health Care
- Health Care Industry
- Working with Patients
- Legal and Ethical Responsibilities
- Employment
- Leadership
- Professional Development

Required Materials:
- Pencil for all tests
- Word processing software (must be able to save WORD format) and antivirus software.
- View computer requirements for the online portion of the course.

Grading System:
Grades are not rounded. Students must earn a grade of 75 or higher in order to earn credit for AHS 101.

A 94 – 100
B 86 – 93
C 75 – 84
D 70 – 74
F 0 – 69

Student Learning Outcomes:
- Identify and discuss the various health care professionals classified under Therapeutic and Treatment Occupations, Diagnostic Occupations, Health Information Management Occupations and Environmental Occupations.
- Examine the health care industry today to include technology, specialization, aging population and costs.
- Summarize how ethical and legal responsibilities can impact health care workers.
- Define professionalism and describe its importance to health care.
- State the importance of communication and how communication relates to health care.
- Develop the professional skills needed for following up on job leads and creating an organized resume.

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AHS 102
Medical Terminology

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 032 and RDG 032 or equivalent.
Co-requisite: None

Course Description:
This course covers medical terms, including roots, prefixes, and suffixes, with emphasis on spelling, definition, and pronunciation.

Course Topics:
- General components of Medical Language
- Diagnostic and Therapeutic Interventions
- Musculoskeletal System
- Circulatory System
Respiratory System
Digestive System
Urinary System
Reproductive System
Integumentary System
Nervous System and Psychologic Disorders
Special Senses
Endocrine System

Required Materials:

- Pencil for all tests
- Word processing software (must be able to save WORD format) and antivirus software.
  - [View computer requirements for the online portion of the course.](https://lor1.sccsc.edu/syllabus/frm_display/2014-2015-syllabus-archive/?preview_id=28131&preview_nonce=574710b501&preview=true)

Grading System:

Grades are not rounded. Students must earn a grade of C or higher to earn credit for AHS 102.

- A 94 – 100
- B 86 – 93
- C 75 – 84
- D 70 – 74
- F 0 – 69

Student Learning Outcomes:

- Define the types of healthcare terms as well as word roots, combining forms, prefixes, and suffixes.
- Use basic word roots, suffixes and prefixes accurately to build medical terms.
- Define directional terms and anatomic planes of the body.
- Relate the terminology to the names, locations, and functions of the major organs of the body systems.
- Define medical terms related to selected diseases.
- Define selected diagnostic and surgical procedural terms for each body system.

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AHS 104
Medical Vocabulary/Anatomy

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 032 and RDG 032 or equivalent.
Co-requisite: None
Course Description:

This course introduces the fundamental principles of medical terminology and includes a survey of human anatomy and physiology.

Course Topics:

- Organization and Tissues of the Body
- Chemistry of life
- Cell
- Skeletal System
- Muscular System
- Circulatory System
- Cardiovascular System
- Lymphatic System
- Respiratory System
- Digestive System
- Urinary System
- Reproductive System
- Integumentary System
- Nervous System
- Special Senses
- Endocrine System

Required Materials:

- Pencil for all tests
- Word processing software (must be able to save WORD format) and antivirus software.
  - [View computer requirements for the online portion of the course.](https://lor1.sccsc.edu/syllabus/frm_display/2014-2015-syllabus-archive/?preview_id=28131&preview_nonce=574710b501&preview=true)

Grading System:
Grades are not rounded. Students must earn a grade of 75 or higher in order to earn credit for AHS 104.

A 94 – 100  
B 86 – 93  
C 75 – 84  
D 70 – 74  
F 0 – 69  

Student Learning Outcomes:

- Identify the body's structural level of organization.
- Explain the chemistry of life.
- Describe the structural anatomy of a cell.
- Recognize the general characteristics of tissues.
- Describe the following body systems including accessory organs, functions, and disorders:
  - Skeletal
  - Muscular
  - Nervous
  - Special senses
  - Endocrine
  - Cardiovascular to include blood
  - Lymphatic
  - Respiratory
  - Digestive
  - Urinary
  - Reproductive

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AHS 106  
Cardiopulmonary Resuscitation  

Hours: Class 1, Lab 0, Credit 1  
Pre-requisite:  
Co-requisite: None  
Course Description:

This course provides a study of the principles of cardiopulmonary resuscitation.

Course Topics:

- American Heart Association Chain of Survival.
- 1-Rescuer and 2-Rescuer CPR and AED for adult, child, and infant.
- Difference between adult, child, and infant rescue techniques.
- Bag-mask technique for adult, child, and infant.
- Rescue breathing for adult, child, and infant.
- Relief of choking for adult, child, and infant.

Required Materials:

- Course textbook
- Pocket mask for rescue breathing
- $5 fee payable to the SCC Business Office for the AHA (American Heart Association) CPR card.

Grading System:

An overall grade of C or higher is required for transferability.

A 94 – 100  
B 85 – 93  
C 80 – 84  
D 70 – 79  
F 0 – 69  

Student Learning Outcomes:

- Describe the American Heart Association's Chain of Survival.
- Identify emergency situations in which 9-1-1 should be activated.
- Demonstrate ability to perform 1- rescuer and 2- rescuer CPR and AED for an adult, child, or infant.
- Describe the differences between adult, child, and infant rescue techniques.
- Demonstrate ability to perform rescue breathing with and without a bag-mask for an adult, child, or infant.
- Demonstrate the ability to relieve choking for an adult, child, or infant.

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AHS 107

Clinical Computations

Hours: Class 2, Lab 0, Credit 2
Pre-requisite: AHS 101 and MAT 031 and MAT 032 or equivalent.
Co-requisite: None
Course Description:

This course is a study of the principles and applications of computations used in the clinical setting.

Course Topics:

- Basic math functions (add, subtract, multiply, divide whole numbers, fractions, and decimals.
- Roman numerals and Arabic numbers
- Ratios, proportions, and percent
- Equivalents with metric, apothecary, and household measures
- Prescriptions, medication orders, and drug labels
- Calculate doses of oral and parental medications
- Body surface area
- Intake, output, and fluid imbalances

Required Materials:

- Basic calculator (non-graphing)

Grading System:

An overall grade of C or higher is required for transferability.

A 94 – 100
B 85 – 93
C 80 – 84
D 70 – 79
F 0 – 69

Student Learning Outcomes:

- Demonstrate ability to add, subtract, divide and multiply whole numbers, fractions, and decimals.
- Demonstrate the ability to apply ratios, proportion, and percent in problem calculations.
- Demonstrate the ability to calculate equivalent measurements within the metric, household, apothecary systems, and temperature.
- Demonstrate the ability to interpret prescriptions, medication orders, and drug labels.
- Demonstrate the ability to calculate administration amounts of oral and parental medications.
- Demonstrate dose specific calculations for special populations based on body weight and patient age (body surface area).
- Demonstrate the ability to accurately read and use various equipment used in a variety of healthcare settings.
- Demonstrate the ability to calculate fluid imbalances by comparing intake and output.

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AHS 111

Health Related Issues

Hours: Class 4, Lab 0, Credit 4
Pre-requisite: Successful completion of prior Respiratory Care Program requirements.
Co-requisite: None
Course Description:

This course introduces modules of instruction in chemistry, microbiology, and physics with emphasis on their application to health care

Course Topics:

- Application of chemistry to respiratory care.
- Application of microbiology to respiratory care.
- Pulmonary function testing.
- How to calculate and interpret a pulmonary function test.
- Application of physics to respiratory care.
- Using statistics in respiratory care research.

Required Materials:

Students are expected to view the Panopto recordings for each unit prior to class and come to class prepared to discuss and apply the information presented.
Grading System:
The standard mathematical procedure of rounding will be applied to arrive at a whole number percentage in the final grade calculation.

A grade of "C" or higher is required to continue in the associate degree program.

A 92 – 100  
B 84 – 91  
C 76 – 83  
D 68 – 75  
F 0 – 67

Student Learning Outcomes:
- Administer pulmonary function testing.
- Calculate and interpret a pulmonary function test.
- Explain the application of chemistry to respiratory care.
- Evaluate the application of physics to respiratory care.
- Explain the application of microbiology to respiratory care.
- Evaluate statistics used in respiratory care.

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AHS 113
Head and Neck Anatomy

Hours: Class 0, Lab 3, Credit 1
Pre-requisite: DAT 110 and admission into the Expanded Duty Dental Assisting Program.
Co-requisite: None

Course Description:
This course provides a detailed study of the structure of the head and neck with special emphasis on structure as it pertains to the study of dental science.

Course Topics:
- Landmarks of the head and neck
- Skeletal System
- Muscular System
- Nervous System
- Circulatory System
- Salivary Glands
- Dental Embryology and Histology

Required Materials:
None

Grading System:
An overall grade of C or higher is required for transferability.

A 94 – 100  
B 86 – 93  
C 80 – 85  
D 75 – 79  
F 0 – 74

Student Learning Outcomes:
- Use appropriate terminology to effectively communicate information related to anatomy of the head and neck.
- Identify anatomic landmarks of the head, face, neck and oral cavity.
- Describe the anatomy and physiology of the oral structures including skeletal, muscular, lymphatic, circulatory, and nervous systems.
- Identify all extra-oral and intra-oral structures and landmarks that are visible or palpable on a student partner including muscles, lymph nodes, bones, nerves and mucosal landmarks.
- Locate all oral structures, discussing their clinical significance.

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AHS 114
Basic First Aid

Hours: Class 1, Lab 0, Credit 1
Pre-requisite: None
Co-requisite: None

Course Description:
This course provides instruction in basic procedures used in medical emergencies.

Course Topics:
- Infection control
- Medical emergencies
- Body mechanics
- Workplace safety
- Cardiopulmonary resuscitation
- First aid for choking
- Automated external defibrillation

Required Materials:
- Minimal cost of CPR care
- Individual CPR mask (purchase from Book Inn)
- Red/Print Scrubs
- College Photo ID

Grading System:
An overall grade of C or higher is required for transferability.

A 94 – 100
B 86 – 93
C 80 – 85
D 75 – 79
F 0 – 74

Student Learning Outcomes:
- Demonstrate proper first aid for a variety of emergency situations.
- Describe basic infection control procedures, proper body mechanics, and safety as it relates to the workplace.
- Demonstrate CPR and First Aid for choking and cardiovascular emergencies for adults.
- Simulate CPR and First Aid for choking and cardiovascular emergencies for children, and infants.
- Demonstrate the use of an Automated External Defibrillator (AED).

AHS 121
Basic Pharmacology

Hours: Class 2, Lab 0, Credit 2
Pre-requisite: AHS 102, AHS 104, AOT 180
Co-requisite:

Course Description:
This course covers the nature of drugs, their actions in the body and side effects.

Course Topics:
- Drug names, references, effects and systems of measurement
- Vitamins, minerals and herbs
- Skin and mucous membrane drugs
- Autonomic nervous system drugs
- Antineoplastic drugs
- Urinary system drugs
- Digestive system drugs
- Antibiotics, antivirals, antifungals
- Central nervous system drugs
- Psychotropic drugs
- Anti-inflammatory, antirheumatic, skeletal muscle relaxant drugs
- Endocrine system, reproductive system, cardiovascular system and respiratory system
- Drug therapy in older adults

Required Materials:
- Computer with Internet access
- Word processing software (must be able to save Word format)
- Anti-virus software

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
AHS 124
Anatomy and Physiology for Respiratory Care

Hours: Class 3, Lab 3, Credit 4
Pre-requisite: Admission into the Respiratory Care Program.
Co-requisite:
Course Description:
This course is a study of human anatomy and physiology with emphasis on the cardiopulmonary system.

Course Topics:
- Anatomy and physiology of the respiratory system
- Anatomy and physiology of the circulatory system
- Diffusion of gases within the body
- Oxygen transport
- Carbon Dioxide transport
- Acid-Base balance
- Neurophysiology as it relates to ventilation
- Effects of aging, high altitude and high pressure on the cardiopulmonary system
- Renal system and its relationship to the cardiopulmonary system

Required Materials:
None

Grading System:
A 92 – 100
B 84 – 91
C 76 – 83
D 68 – 75
F 0 – 67

Student Learning Outcomes:
- Describe the anatomy and physiology of the respiratory system.
- Apply the anatomy and physiology of the respiratory system to ventilation.
- Define and identify lung volumes, capacities and flow measurements to include their normal.
- Apply the factors that involve diffusion of gases within the body.
- Describe the anatomy and physiology of the circulatory system.
- Explain the factors that are involved in oxygen transport throughout the body.
- Explain the factors that involve the movement of carbon dioxide and its role in acid-base balance.
- Evaluate ventilation/perfusion ratio and its application to the human body.
- Summarize the neurophysiology as it relates to the control of ventilation.
- Explain the effects of aging, high altitude, and high pressure environments on the cardiopulmonary system.
- Explain the functions of the renal system in relation to the cardiopulmonary system.

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AHS 143
Phlebotomy Skills I

Hours: Class 4, Lab 6, Credit 6
Pre-requisite:
Co-requisite: None
Course Description:
This course is a study of phlebotomy equipment, procedures, techniques, and practical experience.

Course Topics:
- Laboratory areas/ departments
- CLIA, CLSI, NAACLS, JCAHO, CAP, and AABB in regards to the laboratory

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OSHA regulations for the laboratory
Blood collection equipment and additives
Anatomy/physiology of human body cardiovascular system
Capillary puncture
Procedure for blood collection

Required Materials:

- BDEC Foam Baby Foot/ Blood collection cards
- White lab coat, fluid resistant coat (purchased in Book Inn)
- SCC Clinical ID
- PCT Uniform as outlined in the SCC PCT Program Handbook
- SCC PCT Program Handbook

Grading System:
An overall grade of C or higher is required for transferability.

- A 94 – 100
- B 86 – 93
- C 80 – 85
- D 75 – 79
- F 0 – 74

Student Learning Outcomes:

- Correlate the major areas and departments of the clinical laboratory with the laboratory tests ordered to evaluate a patient's pathological condition or illness.
- Practice standard safety precautions in the clinical laboratory through the use of personal protective equipment (PPE), handwashing, and other environmental controls as mandated by OSHA.
- Demonstrate knowledge of collection equipment, various types of additives used, special precautions necessary and substances that can interfere in clinical analysis of blood constituents.
- Demonstrate proper techniques to perform capillary puncture.
- Demonstrate knowledge of general considerations in blood collection.
- Complete 25 successful unassisted venipunctures in a clinical setting.

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AHS 144
Phlebotomy Practicum I

Hours: Class 3, Lab 6, Credit 5
Pre-requisite: ENG 032 and RDG 032 or equivalent and approval of the department chair.
Co-requisite: None

Course Description:
This course provides a detailed study and practice of phlebotomy procedures utilized in hospital settings, clinical facilities, and physician's offices.

Course Topics:

- Safety in the clinical laboratory
- Clinical laboratory departments
- Regulatory processes of clinical laboratories
- Cardiovascular and lymphatic system anatomy
- Collection equipment
- Capillary puncture
- Venipuncture
- Special collection techniques
- Clinical laboratory equipment
- Point of Care testing

Required Materials:

- White Lab Coat
- Fluid resistant lab coat (purchase from Book Inn)
- Red/Print Scrubs
- College Photo ID

Grading System:
An overall grade of C or higher is required for transferability.

- A 94 – 100
- B 86 – 93
C 80 – 85
D 75 – 79
F 0 – 74

Student Learning Outcomes:

- Demonstrate appropriate safety precautions in the clinical laboratory as required by the Occupational Safety and Health Administration (OSHA) and the Clinical Laboratory Standards Institute (CLSI).
- Associate the major areas and departments of the clinical laboratory with the laboratory tests ordered to evaluate a patient's pathologic condition or illness.
- Describe the functions of the Cardiovascular and Lymphatic Systems as they relate to phlebotomy.
- Demonstrate knowledge of collection equipment, various types of additives used, special precautions necessary and substances that can interfere in clinical analysis of blood constituents.
- Demonstrate proper techniques to perform capillary puncture and venipuncture.
- Identify Special Collection Techniques and General Laboratory Equipment used within the clinical laboratory.
- Perform POC (point of care) glucose and hematocrit testing.

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AHS 146
Phlebotomy Experience

Hours: Class 7, Lab 0, Credit 7
Pre-requisite: ENG 032 and RDG 032 or equivalent and approval of the department chair.
Co-requisite: None

Course Description:
This course includes comprehensive clinical experiences in medical laboratory specimen collections, transport, storage, and basic test procedures.

Course Topics:
- Safety in the clinical laboratory
- Clinical laboratory departments
- Regulatory processes of clinical laboratories
- Collection equipment
- Capillary puncture
- Venipuncture
- Special collection techniques
- Clinical laboratory equipment

Required Materials:
- White Lab Coat
- Fluid resistant lab coat (purchase from Book Inn)
- Gloves
- Face shield
- Red/Print Scrubs
- College Photo ID

Grading System:
An overall grade of C or higher is required for transferability.
A 94 – 100
B 86 – 93
C 80 – 85
D 75 – 79
F 0 – 74

Student Learning Outcomes:
- Practice professional communication when interacting with patients and other members of healthcare team.
- Perform phlebotomy procedures and tasks in an accurate, timely and professional manner.
- Demonstrate the technical and affective skills of an entry-level phlebotomist.
- Demonstrate competency of various blood collection techniques.
- Practice appropriate safety precautions in the clinical laboratory and patient care areas.

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AHS 152
Health Care Procedures II

Hours: Class 5, Lab 3, Credit 6
Pre-requisite: In order to enroll in AHS 152 the student must have completed AHS 163 OR show current CNA
Certification which must be maintained throughout the program.
AHS 163, AHS 106 (or current AHA CPR certification)
Co-requisite: AHS 102

Course Description:

This course includes concurrent coordinated clinical experiences in advanced patient/client care skills.

Course Topics:
- Communication, documentation, and interpersonal skills
- Infection control and sterility
- Safety/ Emergency procedures
- Promoting patient's independence
- Respecting patient's rights
- Role of the PCT
- Advanced skills for the PCT
- Medication administration

Required Materials:
- Stethoscope
- Blood pressure cuff (adult/ manual)
- Bandage scissors
- Penlight
- Watch with second hand
- PCT Uniform as outlined in the SCC PCT Handbook
- SCC PCT Student Handbook

Grading System:
An overall grade of C or higher is required for transferability.
A 94 – 100
B 85 – 93
C 75 – 84
D 65 – 74
F 0 – 64

Student Learning Outcomes:
- Demonstrate proficiency in infection control, maintaining sterile field, safety/ emergency procedures, advanced skills for the PCT, and medication administration.
- Demonstrate knowledge of the role of the PCT, scope of practice of the PCT, laws governing healthcare, and code of ethics of nursing.
- Demonstrate proficiency in listening, writing, oral, and presentation skills.
- Anticipate and demonstrate care for patients with consideration of physical, emotional, psychosocial, cultural, spiritual, and developmental needs.
- Apply a plan of care that addresses the patient's healthcare needs through consultation and following protocols in conjunction with the interdisciplinary healthcare team.
- Demonstrate knowledge of normal versus abnormal anatomy and physiology of the human body across the lifespan.
- Demonstrate proficiency in obtaining vital signs; collecting specimens; observing and reporting signs of illness such as but not limited to shortness of breath, coughs, pallor, cyanosis, seizures, etc.

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AHS 155
Special Topics in Health Care

Hours: Class 3, Lab 3, Credit 3
Pre-requisite: Prerequisite(s) or AOT 252 with a minimum grade of "C."
Co-requisite:

Course Description:

This course emphasizes specialized job-related education in health care.

Course Topics:
Required Materials:
Grading System:
Student Learning Outcomes:

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AHS 163
Long-Term Care
Hours: Class 2, Lab 9, Credit 5
Pre-requisite: Admission into the Patient Care Technician Program.
Co-requisite: AHS 101 and AHS 106
Course Description:
This course emphasizes the basic skills needed to care for residents in the long-term care setting. Students will apply practical use of these skills through clinical experiences in a long-term care facility.

Course Topics:
- Communication and Interpersonal Skills
- Infection Control
- Safety/ Emergency Procedures
- Promoting Resident's Independence
- Respecting Resident's Rights
- Role of the Nurse Aide
- Basic Nursing Skills
- Care of Cognitively Impaired Residents
- Mental Health and Social Needs
- Personal Care Skills
- Basic Restorative Services

Required Materials:
- Blood pressure cuff (adult/ manual),
- Stethoscope,
- Watch with second hand
- White shoes
- PCT Uniform as outlined in SCC PCT Program Handbook
- SCC PCT Student Handbook

Grading System:
An overall grade of C or higher is required for transferability.

A 94 – 100
B 85 – 93
C 80 – 84
D 70 – 79
F 0 – 69

Student Learning Outcomes:
- Demonstrate proficiency in infection control, safety/emergency procedures, basic nursing skills, and basic restorative skills.
- Demonstrate knowledge of the role of the nurse aide, scope of practice of the nurse aide, laws governing healthcare, and code of ethics of nursing.
- Demonstrate proficiency in listening, writing, oral, and presentation skills.
- Anticipate and demonstrate care for residents with consideration of physical, emotional, psychosocial, cultural, spiritual, and developmental needs.
- Apply a plan of care that addresses resident's healthcare needs through consultation and following protocols in conjunction with the interdisciplinary healthcare team.
- Demonstrate knowledge of normal versus abnormal anatomy and physiology of the human body and how aging affects the human body.
- Demonstrate proficiency in promoting resident rights and respecting resident rights.

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AHS 165
ECG Applications
Hours: Class 5, Lab 0, Credit 5
Pre-requisite: Completion of prior program requirements.
Co-requisite: None
Course Description:
This course provides ECG/cardiac monitoring students practice in various clinical settings.

Course Topics:
- Basic anatomy and physiology of cardiopulmonary system
- Monitoring equipment, telemetry equipment, and 12 lead ECG
- Cardiac rhythms including lethal rhythms
- AED (automated external defibrillator)

Required Materials:
• Calipers (or measuring tape)
• Basic calculator
• Access to a computer with Internet access and anti-virus software.
• Word processing software (must be able to save Word format)

Grading System:
An overall grade of C or higher is required for transferability.

A 94 – 100
B 85 – 93
C 80 – 84
D 70 – 79
F 0 – 69

Student Learning Outcomes:
• Describe anatomy and physiology of the cardiopulmonary system.
• Identify the components of cardiac monitoring including telemetry equipment and 12 lead ECG equipment and how it is used in the clinical setting.
• Identify sinus, atrial, junctional, ventricular, heart block, funny looking, and paced rhythms.
• Identify correctly (100%) the lethal cardiac rhythms: ventricular tachycardia, ventricular fibrillation, asystole, torsades, idioventricular, and complete heart block.
• Describe an AED (automated external defibrillator) and its use in the clinical setting.

AHS 170
Fundamentals of Disease

Hours: Class 3, Lab 0, Credit 3
Pre-requisite:
Co-requisite:
Course Description:
This course provides a study of general principles of disease and the disorders that affect the human body, with an emphasis on symptoms and signs routinely assessed in health care facilities.

Course Topics:
• Mechanisms of disease
• Diseases of the blood, cardiovascular, respiratory, urinary, gastrointestinal, reproductive, integumentary, musculoskeletal, nervous, endocrine, immune, and lymphatic systems
• Stress, aging, and wellness
• Structural organization of the human body

Required Materials:
• Computer with Internet access
• Word processing software (must be able to save in Word format)
• Up-to-date anti-virus software

Grading System:
An overall grade of C or higher is required for transferability.

A 94 – 100
B 85 – 93
C 80 – 84
D 70 – 79
F 0 – 69

Student Learning Outcomes:
• Explain the mechanisms of disease including definitions of diagnosis, prognosis, cure, treatment, immunities, and infectious processes.
• Explain the structural organization of the human body.
• Explain normal structure and function of the blood, cardiovascular, respiratory, urinary, gastrointestinal, reproductive, integumentary, musculoskeletal, nervous, endocrine, immune, and lymphatic systems
• Discriminate between disease processes of the blood, cardiovascular, respiratory, urinary, gastrointestinal, reproductive, integumentary, musculoskeletal, nervous, endocrine, immune, and lymphatic systems.
• Explain signs and symptoms, diagnostic procedures, and treatments for diseases of the human body.
• Identify the interdependent relationships of stress, aging, and wellness in regards to the human body.

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Automated Manufacturing Overview

Hours: Class 2, Lab 0, Credit 2  
Pre-requisite: None  
Co-requisite: None  
Course Description:  
This course is a survey of automated manufacturing concepts.

Course Topics:  
- Production Systems  
- Manufacturing Operations  
- Manufacturing Models and Metrics  
- Introduction to Automation  
- Industrial Control Systems  
- Hardware Components for Automation and Process Control  
- Industrial Robotics  

Required Materials:  
- Text Book  
- Common Classroom Materials  
- Microsoft Office  

Grading System:  
A 90 – 100  
B 80 – 89  
C 70 – 79  
D 60 – 69  
F 0 – 59  

Student Learning Outcomes:  
- Evaluate degrees of automation and assign the proper degree based on manufacturing requirements.  
- Compare past, present and future manufacturing methodology with advances in technology.  
- Develop a broader understanding of terminology used in the field of automation and process systems.  
- Distinguish between the various levels of automation and control systems that are commonly used in industry.  
- Assess the types of hardware that might be required in an automated manufacturing plant.  
- Analyze the anatomy of robotic equipment and its peripheral interfacing.  
- Differentiate between manufacturing environments where manual labor or automation might be the best solution.  

AMT 105  
Robotics and Automated Control I  

Hours: Class 2, Lab 3, Credit 3  
Pre-requisite: None  
Co-requisite: None  
Course Description:  
This course includes assembling, testing, and repairing equipment used in automation. Concentration is on connecting, testing, and evaluating automated controls and systems.

Course Topics:  
- Introduction to industrial robotics  
- Fundamentals of robotics  
- Programming the robot  
- Industrial applications  

Required Materials:  
- Standard class room supplies  
- Safety glasses are required when working in the lab environment.  
- No open-toed or open-heeled shoes are to be worn in the lab.  
- Students should obey all posted safety rules.  
- 5 x 8 index cards (Approximately 25)  
- 2 Binder Rings  
- USB storage device that can be temporarily dedicated for use in this class  

Grading System:  
A 90 – 100  
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:

- Distinguish the elements of an automated system.
- Classify the different robot configurations used in industry.
- Distinguish between safety considerations for personnel, work areas, operations and maintenance.
- Create robot programs.
- Classify the type of electrical and mechanical systems that are used in robotics and other automated systems.
- Analyze operating difficulties of installed robots and describe the necessary corrective adjustments to return the robot to normal operations.
- Complete a glossary of terms encompassing the subject matter described in these course objectives.

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AMT 106

Manufacturing Workplace Skills

Hours: Class 3, Lab 0, Credit 3
Pre-requisite:
Co-requisite:

Course Description:
This course introduces the fundamental employee skills needed to be successful in a manufacturing environment. Emphasis is placed on teamwork, adaptability, work ethics, communication skills, and customer service.

Course Topics:
Required Materials:
Grading System:
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:

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AMT 110

Survey of Manufacturing Processes

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: None
Co-requisite: None

Course Description:
This course includes the processes, alternatives and operations used in a broad range of manufacturing environments.

Course Topics:
- Characteristics of metallic materials
- Processes used to form metallic materials
- Characteristics of plastic materials
- Processes used to form plastic materials
- Characteristics of wood materials
- Processes used to form wood materials
- Characteristics of ceramic materials
- Processes used to form ceramic materials
- Characteristics of composite materials
- Processes used to form composite materials

Required Materials:
- Course Materials as provided in the AMT Team Site under AcademicsAcademic ProgramsAMT in the SCC Portal

Grading System:
A 90 – 100
B 80 – 89
C 70 – 79
Student Learning Outcomes:

- Contrast various types of manufacturing processes in a manufacturing plant.
- Distinguish the characteristics of each of the materials used in the manufacture of goods.
- Demonstrate a knowledge of the history of manufacturing.
- Distinguish various materials based on their elemental construction.
- Complete a glossary of terms for the subject matter covered in this course.

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AMT 205
Robotics and Automated Control II

Hours: Class 1, Lab 6, Credit 3
Pre-requisite: AMT 105
Co-requisite: None

Course Description:

This course covers installation, testing, troubleshooting, and repairing of automated systems.

Course Topics:

- Sensors
- End Effectors
- Interfacing and vision systems
- Maintaining robot systems
- Robots in modern manufacturing

Required Materials:

- Safety glasses are required when working in the lab environment.
- No open-toed or open-heeled shoes are to be worn in the lab.
- Students should obey all posted safety rules.
- 5 x 8 index cards (Approximately 25)
- 2 Binder Rings
- USB storage device that can be temporarily dedicated for use in this class
- Course Materials as provided in the AMT Team Site under AcademicsAcademic ProgramsAMT in the SCC Portal.

Grading System:

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:

- Classify the types of sensors used in automation.
- Demonstrate a general knowledge of robotic end effectors and tooling.
- Demonstrate a basic knowledge of interfacing and vision systems.
- Demonstrate a basic understanding of robotic systems maintenance.
- Identify the future potential for robotics in industry.
- Complete a glossary of terms encompassing the subject matter described in these course objectives.
- Write advanced interfacing programs for robots.

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AMT 206
Electricity and Automation

Hours: Class 0, Lab 6, Credit 2
Pre-requisite: EEM 252
Co-requisite: None

Course Description:

This course progresses from introduction to principles of automation, including a study of various mechanical devices used in automated manufacturing and electrical components used to control the machines. Lab projects include design, fabrication, and operation of various real and simulated processes.

Course Topics:

- Introduction to industrial control systems
- Process control methods

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• The controller operation
• Pressure systems
• Temperature control
• Level control systems
• Industrial detection sensors and interfacing

Required Materials:
• Safety glasses are required when working in the lab environment.
  No open-toed or open-heeled shoes are to be worn in the lab.
  Students should obey all posted safety rules.
• Course Materials as provided in the AMT Team Site under AcademicsAcademic ProgramsAMT in the SCC Portal.

Grading System:
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
• Analyze the components and operation of an industrial control system.
• Analyze the various control modes utilized in industrial control.
• Analyze the function and operation of sensors used to measure various parameters in industrial applications.
• Complete a Glossary of Terms encompassing the subject matter contained in this course.
• Design and construct automation applications in a lab environment.
• Design virtual robotics environments in the class room.
• Analyze and modify robotic and automation systems.

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AMT 209
Automation Networks

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: None
Co-requisite: None
Course Description:
This course provides a study and implementation of the Ethernet transmission protocol in automation networks. It
includes PLC interfacing to Ethernet cabling and Ethernet capable instrumentation. Additional topics include the OSI
model and distributed BUS networking.

Course Topics:
• Introduction to networking
• Network media

Required Materials:
• Safety glasses are required when working in the lab environment.
  No open-toed or open-heeled shoes are to be worn in the lab.
  Students should obey all posted safety rules.
• Course Materials as provided in the AMT Team Site under AcademicsAcademic ProgramsAMT in the SCC Portal.

Grading System:
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
• Distinguish the components of an Ethernet Network.
• Illustrate the function of each component in an Ethernet network.
• Evaluate the attributes of copper core network media.
• Evaluate the attributes of fiber optic cable.
• Evaluate the attributes of wireless data technology.
• Contrast the strengths and weaknesses of the three major methods of data transfer over ethernet.
• Develop a broader understanding of the terminology used in ethernet networking by completing a Glossary of
terms and definitions for networking.

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AMT 211
Automation Networks

Hours: Class 3, Lab 0, Credit 3
Pre-requisite:
Co-requisite:
Course Description:
This course provides a study and implementation of the DeviceNet transmission protocol in automation networks. It includes PLC interfacing to DeviceNet cabling and DeviceNet capable instrumentation. Additional topics include the OSI model and distributed BUS networking.

Course Topics:
Required Materials:
Grading System:
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
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AMT 220
Concepts of Lean Manufacturing

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: None
Co-requisite: None
Course Description:
This course provides an understanding of the concepts used in improving the competitiveness of manufacturing and service companies. This course includes JIT, VACR, and TQM.

Course Topics:
- Product design and CAD/CAM in the production system
- Process planning and concurrent engineering
- Production planning and control systems
- Just-in-time and lean production
- Quality programs for manufacturing
- Inspection principles and practices
- Inspection Technologies

Required Materials:
- Text Book
- Common Classroom Materials
- Microsoft Office

Grading System:
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Consider how a customer defines value in a product or service purchased from a supplier.
- Demonstrate a knowledge of the methods of developing and mapping a value stream.
- Explain the three primary principles of Lean Mfg.
- Explain the principles and motivations of “Just In Time” manufacturing.
- Demonstrate an understanding of the Financial Metrics used to measure corporate performance.
- Demonstrate comprehension of the Closed Loop Model of Control Systems by drawing a model and explaining the function of all the components.
- Distinguish between the different tools used in Statistical Process Control.

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ANT 101
Introduction to Anthropology

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 100 and RDG 100
Co-requisite: None

Course Description:
This course is the study of physical and cultural anthropology. This course explores subfields of anthropology to examine primatology, human paleontology, human variation, archeology and ethnology.

Course Topics:
- The Importance of Anthropology
- Research Methods in Anthropology
- Genetics and Evolution
- Human Variation and Adaptation
- Primates: Present and Past
- The First Hominids
- The Emergence of Homo Sapiens
- Food Production and the Rise of States
- Culture and Culture Change
- Language and Communication
- Economics
- Social Stratification: Class, Ethnicity and Racism
- Sex and Gender
- Marriage, Family and Kinship

Required Materials:
None

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Define the concept of culture as discussed by anthropologists.
- Explain the discipline of anthropology and how it is distinguished from other social sciences.
- Explain various conceptual frameworks that present the universe and humankind in the universe.
- Explain cultural relativism and its importance to anthropology.
- Describe procedures used by anthropologists in studying cultures.

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AOT 105

Keyboarding

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: None
Co-requisite: None

Course Description:
This course focuses on the mastery of touch keyboarding.

Course Topics:
- The importance of learning keyboarding
- Proper keyboarding techniques
- Accuracy versus Speed
- Business documents
- Grammar and spelling

Required Materials:
- Computer with Internet access.
  View computer requirements for the online portion of the course at www.sccsc.edu/OnlineSyllabiPolicies/.
- Word processing software (must be able to save Word format)
- Anti-virus software

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:

- Operate basic parts of the computer.
- Recognize and implement the use of the alphabetic keys on the qwerty keyboard.
- Use keyboarding skills in operating the punctuation and symbol keys by touch.
- Demonstrate proficiency in using the numeric keypad on the qwerty keyboard.
- Type a minimum of 30 words or better with 2 or less errors in text.

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AOT 133
Professional Development

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 032, RDG 100 with a minimum grade of “C.”
Co-requisite: None

Course Description:
This course emphasizes development of personal and professional skills required of an office worker in areas such as projecting a professional image, job seeking skills, office etiquette, ethics, and time and stress management.

Course Topics:

- Working in teams
- Leadership/management styles
- Interpersonal skills
- Resumes, cover letters, and job interviewing
- Communication skills

Required Materials:

One USB/jump disk or sky drive onto which all typed assignments will be saved

Grading System:
An overall grade of C or higher is required in this class to be applied toward any Administrative Office Technology degree or certificate.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:

- Justify components of professional interview attire.
- Project professionalism and a strong work ethic.
- Apply positive interpersonal skills.
- Simulate business etiquette skills in a professional environment.
- Create an effective resume and cover letter.
- Synthesize a mock job interview.
- Summarize a book about professional development.
- Prepare and deliver a 5-7 minute oral presentation.

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AOT 134
Office Communications

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 100 and RDG 100
Co-requisite:

Course Description:
This course is a study of grammar, punctuation, and written communication skills for the office environment.

Course Topics:
• The writing process
• Composing business messages
• Revising business messages
• Proofreading versus editing
• Business documents
• Grammar, spelling, and sentence structure
• Direct and Indirect writing styles

Required Materials:
• Computer with Internet access.
  View computer requirements for the online portion of the course at www.sccsc.edu/OnlineSyllabiPolicies/.
• Word processing software (must be able to save Word format)
• Anti-virus software

Grading System:
An overall grade of C or higher is required for transferability.

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Student Learning Outcomes:
• Demonstrate the writing process.
• Communicate with business staff and clients.
• Report workplace data.
• Demonstrate professionalism, teamwork, meeting and speaking skills.
• Research primary and secondary data.
• Plan and develop a business presentation.
• Design an impressive multimedia presentation.

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AOT 141
Office Procedures I

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: RDG 100 and ENG 100
Co-requisite:

Course Description:
This is an introductory course to a variety of office procedures necessary to perform effectively and efficiently in the office environment.

Course Topics:
• Communications
• Mailing
• Filing
• Telecommunications
• Customer Service
• Scheduling
• Proofreading
• Computer and other office equipment
• Keyboarding

Required Materials:
• One (1) USB/jump drive
• 100 lined cards 3" x 5"

Grading System:
An overall grade of C or higher is required for transferability.

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Student Learning Outcomes:
• Demonstrate computer, office equipment and keyboarding proficiency.
• Role-play customer service scenarios.
• Prepare and revise written communications.
• Analyze and classify mailing documents.
• Evaluate filing documents.
• Create scheduling systems.

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AOT 142
Advanced Office Procedures II

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: AOT 141 and CPT 101 with a minimum grade of "C."
Co-requisite: None
Course Description:

This course covers the application of office procedures necessary to perform effectively and efficiently in the office environment.

Course Topics:
• Business correspondence
• Advanced customer service telephone techniques
• 10-key proficiency
• Business trips
• Business meetings
• Workplace ethics

Required Materials:
• One USB/jump disk or sky drive onto which all typed assignments will be saved

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
• Compose business correspondence, including letters and memos.
• Proofread business correspondence.
• Plan an international business trip.
• Identify components of effective meeting planning.
• Perform 10-key operations.
• Role-play customer service scenarios.
• Implement appropriate ethical workplace choices.

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AOT 144
Legal Office Procedures

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: AOT 141 and CPT 101 with a minimum grade of "C" or better.
Co-requisite: None
Course Description:

This course covers the application of office procedures necessary to perform effectively and efficiently in the legal office environment.

Course Topics:
• Business correspondence
• Legal documents
• Calendars/dockets

Required Materials:
• One USB/jump disk or sky drive onto which all typed assignments will be saved

Grading System:
An overall grade of C or higher is required in this class to be applied toward the Administrative Office Technology degree.
AOT 164
Medical Information Processing

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: AHS 102, AOT141
Co-requisite: HIM 105, MED 109
Course Description:
This course emphasizes development of proficiency in producing medical documents typical of those used in health care settings.

Course Topics:
- Gaining experience in using medical software
- Patient registration
- Processing insurance claims

Required Materials:
- One (1) USB/jump drive.

Grading System:
An overall grade of C or higher is required in this class to be applied toward any Administrative Office Technology degree or certificate.

AOT 180
Customer Service

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 100, RDG 100
Co-requisite: None
Course Description:
This course is a study of issues in the workplace relating to effective customer service. The course includes topics such as oral, written, verbal and nonverbal communication skills, effective telephone techniques and cultural diversity in the workplace.

Course Topics:
- Customer Relationship Management (CRM)
- Customer retention techniques
- Interpersonal skills with customers face-to-face
- Interpersonal skills with customers over the phone and other technology media
- Communication skills including customer-focused listening

AOT 213

Legal Document Production

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: CPT 101, AOT 141, BUS 121 with a minimum grade of "C."
Co-requisite: None

Course Description:
This course introduces legal terminology and covers the production of documents found in the legal office environment. Emphasis is on productivity and excellence in legal document production.

Course Topics:
- Overview of Areas of Law
- Proofreading, Editing and Accuracy in Legal Documents
- Legal Terminology and Legal Language Focus

Required Materials:
- One (1) USB/jump drive.

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Analyze and prepare legal documents to comply with requirements in the appropriate code of civil procedure, any other statutory or regulatory requirements, and requirements of local court rules.
- Devise and employ legal research strategy, manage research time wisely, and understand the value of legal research tools.
- Proofread and edit legal documents.
- Recognize and articulate legal terminology.
- Analyze the elements of legal business communications.
- Recognize the importance and practice the following components of professionalism:
  - timeliness;
  - honesty;
  - quality, appearance and thoroughness of work product;
  - compliance with ethical responsibilities;
  - compliance with local court rules;
  - independent thought and work;
  - and courtesy to the court, opposing counsel, and all persons involved in the legal process.

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AOT 252
Medical Systems and Procedures

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: AHS 102, AOT 164, HIM 105, MED 109 with a minimum grade of "C."
Co-requisite: HIM 140
Course Description:
This course emphasizes development of proficiency in integrating skills commonly performed in medical offices.

Course Topics:
- Office equipment usage
- Gaining experience in administrative medical responsibilities
- The role of professionalism and image
- Office procedural standards
- Communications in all manners

Required Materials:
- Computer with Internet access.
  View computer requirements for the online portion of the course
- Word processing software (must be able to save Word format)
- Anti-virus software

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Perform medical office duties as presented in a simulation.
- Develop and implement medical office procedural standards.
- Demonstrate professional manner and image.
- Adapt communications to individuals' ability to understand.
- Perform an internship in a medical office.

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AOT 253

Legal Systems and Procedures

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: AOT 144 and AOT 213 with a minimum grade of "C."
Co-requisite: AOT 133, CPT 172, CPT 174, CPT 179 with minimum grade of
Course Description:
This course emphasizes development of proficiency in integrating knowledge and skills performed in legal offices.

Course Topics:
- Business correspondence
- Legal documents
- Calendars/dockets

Required Materials:
- One USB/jump disk or sky drive onto which all typed assignments will be saved
- Earbuds

Grading System:
An overall grade of C or higher is required in this class to be applied toward the Administrative Office Technology degree.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Compose and format business letters and memos.
- Determine which software tool will solve a given problem.
- Demonstrate professional attire and image.
- Demonstrate professionalism and a strong work ethic.
- Adapt and format legal documents.
- Create and maintain an office calendar.
- Complete a 40-hour internship in an approved legal office environment.

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AOT 254
Office Simulation

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: AOT 142 with a minimum grade of “C.”
Co-requisite: AOT 133 and CPT 270 with a minimum grade of

Course Description:
This course integrates a wide variety of skills and knowledge through practical work experiences in a simulated office environment. Teamwork as well as the use of technical and communication skills will be emphasized.

Course Topics:
- Checklist of proficiency in business tools and equipment
- The role of professionalism and image in career growth
- Office procedural standards
- Teamwork and interpersonal skills
- Administrative office environments

Required Materials:
- Computer with Internet access.
  View computer requirements for the online portion of the course
- Word processing software (must be able to save Word format), and anti-virus software.
- One (1) USB jump drive or SkyDrive account
- D2L login and proficiency
  This course utilizes Word, Excel, Access, PowerPoint and Outlook software applications. Access to Microsoft Office 2010 or higher software applications for successful completion of coursework is required.

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Demonstrate proficiency in using software applications in multiple office projects.
- Recognize and implement administrative office procedural standards
- Project professionalism and a strong work ethic
- Work effectively in team project assignments
- Create properly formatted written communications
- Complete a 40-hour internship in an approved administrative office.

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AOT 270
SCWE in Administrative Office

Hours: Class 0, Lab 15, Credit 3
Pre-requisite: HIM 140 and AOT 252 with a minimum grade of “C.”
Co-requisite: HIM 141

Course Description:
This course integrates office skills within an approved work site related to administrative office technology.

Course Topics:
- The role of an administrative professional;
- Office politics and interpersonal skills;
- Self-assessment of professional goals;
- Confidence in the workplace and personal abilities;
- Gaining experience in administrative responsibilities.

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Required Materials:
- Computer with Internet access
- Word processing software (must be able to save Word format)
- Anti-virus software.

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Perform general office duties independently as assigned by the preceptor/supervisor with minimal supervision;
- Master proven techniques to provide effective client telephone service and project a professional image throughout the phone conversation;
- Manage time sensitive and proprietary paperwork;
- Interpret policies and procedures;
- Manage records and files according to company policy, including recording, sequencing and storing.

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ART 101
Art History and Appreciation

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 100, RDG 100 with grade of "C" or better.
Co-requisite: None
Course Description:
This is an introductory course to the history and appreciation of art, including the elements and principles of the visual arts.

Course Topics:
- What is Art?
- Subject, Form, and Content
- Style
- Elements of art
- Principles of design
- Media and Processes
- Context (History and/or Theme)

Required Materials:
- Access to a computer with Microsoft 2007 or equivalent
- Ability to format documents in .doc, .docx, .rtf or .html
- Internet access

Grading System:
An overall grade of C or higher is required for transferability.

A 93 – 100
B 85 – 92
C 75 – 84
D 65 – 74
F 0 – 64

Student Learning Outcomes:
- Define the elements of art and principles of design.
- Recognize and articulate the differences between subject, form, and content.
- Categorize visual arts by culture, historical period, and style.
- Analyze artworks based on their form and content.
- Evaluate artistic themes in relationship to cultural conventions and tradition.

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ART 107
History of Early Western Art
ART 108

History of Western Art

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 100 and RDG 100 (with a minimum grade of C)
Co-requisite: None
Course Description:

This course is a visual and historical survey of western art from the Renaissance through modern times. The techniques, forms, and expressive content of painting, sculpture, and architecture will be studied within the context of the cultural environment which produced them.

Course Topics:

- What is art?
- Style, form, and content
- Context (history and/or theme)

Required Materials:

- Access to a computer with Microsoft 2007 or equivalent
- Ability to format documents in .doc, .docx, .rtf or .html
- Internet access

Grading System:

An overall grade of C or higher is required for transferability.

A 93 – 100
B 85 – 92
C 75 – 84
D 65 – 74
F 0 – 64

Student Learning Outcomes:

- Define the elements of art and principles of design.
- Recognize and articulate the differences between subject, form, and content.
- Categorize visual arts by culture, historical period, and style.
- Demonstrate analytical skills such as observation and inductive reasoning in evaluating works of art both as formal structures and in relation to social and cultural contexts.
- Produce written work involving visual analysis, reading research, critical thinking, and standard methods of documentation.

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ART 111
Basic Drawing I

Hours: Class 2, Lab 3, Credit 3
Pre-requisite: ENG 032, MAT 032, and RDG 100
Co-requisite: None
Course Description:
This course provides an introduction to the materials and the basic techniques of drawing.

Course Topics:
- Introduction to Dry and Wet Achromatic Media
- Composition/Pictorial space
- Gesture
- Sighting and Perspective
- Line Quality and Contour
- Shape and Planar Analysis
- Texture
- Value/Tone (Additive and Subtractive)
- Critique

Required Materials:
Art Kit
- drawing supplies compiled by professor
- permanent marker
- paper towels or old loose rags
- any additional items suggested by instructor

Grading System:
An overall grade of C or higher is required for transferability.
A 93 – 100
B 85 – 92
C 75 – 84
D 65 – 74
F 0 – 64

Student Learning Outcomes:
- Identify, use, and explain the basic vocabulary and concepts associated with drawing as a creative art form.
- Use achromatic drawing materials/tools to demonstrate rendering techniques, through representational drawing.
- Develop problem-solving skills relative to the organization of space on the two-dimensional picture plane.
- Establish an understanding of the concepts and application of sighting and perspective.
- Develop accuracy in rendering objects in terms of proportion and placement.
- Establish standards of craftsmanship and presentation.
- Develop aesthetic and conceptual competence.
- Employ constructive critique procedures and methods of evaluation.
- Develop written and oral communication skills through critique and self-assessment.

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ART 112
Basic Drawing II

Hours: Class 2, Lab 3, Credit 3
Pre-requisite: ART 111
Co-requisite: None
Course Description:
This course covers a study of the materials and basic techniques of drawing, continuing from the foundation laid in ART-111.

Course Topics:
- Introduction to Color Media
- Introduction to Mixed Media Practices
- Choosing the Appropriate Form for the Content
- Thematic Development
- Critique

Required Materials:
Art Kit for ART 112
- drawing supplies compiled by professor
- permanent marker
- paper towels or old loose rags
- any additional items suggested by instructor

Grading System:
An overall grade of C or higher is required for transferability.
A 93 – 100
B 85 – 92
C 75 – 84
D 65 – 74
F 0 – 64

Student Learning Outcomes:
- Identify, use, and explain the basic vocabulary and concepts associated with drawing as a creative art form.
- Use achromatic and color drawing materials/tools to demonstrate basic rendering techniques through representational drawing.
- Demonstrate an understanding of the concepts and application of sighting and perspective.
- Demonstrate accuracy in rendering objects in terms of proportion and placement.
- Develop problem solving-skills relative to the organization of space on the two-dimensional picture plane.
- Establish standards of craftsmanship and presentation.
- Develop aesthetic and conceptual competence.
- Employ constructive critique procedures and methods of evaluation.
- Develop written and oral communication skills through critique and self-assessment.

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ART 121
2-D Design Fundamentals

Hours: Class 2, Lab 3, Credit 3
Pre-requisite: ENG 032 and MAT 032 and RDG 100
Co-requisite:
Course Description:
This foundation course covers the visual elements and principles of design including color theory. Projects in a variety of media will focus on compositional organization and the development of design skills.

Course Topics:
Required Materials:
Grading System:
Student Learning Outcomes:

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ART 122
3-D Design Fundamentals

Hours: Class 2, Lab 3, Credit 3
Pre-requisite: ENG 032 and MAT 032 and RDG 100
Co-requisite:
Course Description:
This foundation course introduces students to 3-D design concepts and basic sculptural materials. Projects address a variety of design problems unique to 3-D art forms.

**Course Topics:**

**Required Materials:**

**Grading System:**

**Student Learning Outcomes:**

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**ART 208**

**Art Since 1945**

**Hours:** Class 3, Lab 0, Credit 3

**Pre-requisite:** ART 101 with a minimum grade of C

**Co-requisite:** None

**Course Description:**

This course is the study of the movements and trends of art and architecture since 1945 to the present; exploring specific artists, art works, and the forces that have shaped them.

**Course Topics:**

- What is Art History?
- Subject, Form, and Content
- Style
- Context (Chronological History)

**Required Materials:**

- Access to a computer with Microsoft 2007 or equivalent
- Ability to format documents in .doc, .docx, .rtf or .html
- Internet access

**Grading System:**

An overall grade of C or higher is required for transferability.

A 93 – 100
B 85 – 92
C 75 – 84
D 65 – 74
F 0 – 64

**Student Learning Outcomes:**

- Define the elements of art and principles of design.
- Recognize and articulate the differences between subject, form, and content.
- Categorize visual arts by culture, historical period, and style.
- Demonstrate analytical skills such as observation and inductive reasoning in evaluating works of art both as formal structures and in relation to social and cultural contexts.
- Produce written work involving visual analysis, reading research, critical thinking, and standard methods of communication.

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**ARV 110**

**Computer Graphics I**

**Hours:** Class 2, Lab 3, Credit 3

**Pre-requisite:** CGC 110 with a minimum grade of "C."

**Co-requisite:** None

**Course Description:**

This course is a study of the fundamentals of computer assisted graphic design using Adobe Illustrator.

**Course Topics:**

- Tools and workspace of Adobe Illustrator
- Vectors
- Pen tool use
- Working with layers
- Illustrations
- Use of gradients
- Vector-based graphic design
Required Materials:

- 1 USB jump drive

Grading System:

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:

- Use basic elements of layout and design principles.
- Use Adobe Illustrator vector drawing software to manipulate both text and graphics with emphasis on the use of Bezier curves.
- Identify terminology, advantages and limitations of vector software.
- Use vector drawing tools to manipulate, create, and edit vector drawings for print and/or web.
- Specify file formats depending on the end-use of the graphic.
- Draw proficiently with the pen tool in Adobe Illustrator, using layers effectively to stack objects.
- Create art that incorporates the fundamental elements and principles of design.
- Select and apply typography that supports and enhances individual design projects.
- Develop specialized drawing skills that can be applied in the fields of illustration and graphic design.
- Design digital/print ready illustrations.

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ARV 121
Design

Hours: Class 2, Lab 3, Credit 3
Pre-requisite: ENG 032, MAT 032, RDG 032
Co-requisite: None

Course Description:
This course covers basic theories, vocabulary, principles, techniques, media and problem-solving in basic design.

Course Topics:

- Industry occupations and responsibilities
- Typography
- Design principles
- The Process of publication design
- The purpose of branding
- Print design vs. Web design
- Digital Design software evaluation

Required Materials:

- 1 USB jump drive

Grading System:

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:

- Explain the roles, processes, occupations, and responsibilities in the graphic design profession.
- Produce a digital mechanical to include measurements and typography.
- Describe the basic components, principles, and laws of art and copy preparation.
- Construct digital mechanicals for one-color, spot-color, and process color print jobs.
- Define the process for website development.
- Evaluate professional graphic design software and hardware.

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ARV 162
Graphic Reproduction I
Hours: Class 2, Lab 3, Credit 3
Pre-requisite: CGC 101 and CGC 110 with a minimum grade of "C."
Co-requisite: None
Course Description:
This course is a study of the principles and practices used in print preparation and print reproduction.
Course Topics:
- Preflight analysis
- Report production
- Customer Service skills
- Imagesetting
- Pre-press
- Post press
- Raster Image Processing software
- Computer-to-Plate
- Advanced color theory
Required Materials:
- 1 USB jump drive
Grading System:
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59
Student Learning Outcomes:
- Critique the processes and procedures for preflighting customer files.
- Dissect digital mechanicals for output problems.
- Demonstrate basic Raster Image Processing with an imagesetter.
- Prepare pre-press materials using current technology (CTP).
- Practice proper customer service relations.
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ARV 163
Graphic Reproduction II
Hours: Class 2, Lab 3, Credit 3
Pre-requisite: ARV 110, ARV 217 and ARV 162 with a grade of C or above.
Co-requisite: None
Course Description:
This course covers the development of the practices and skills used in print preparation and print reproduction.
Course Topics:
- Advanced vector design
- Advanced layout techniques
- File management
- Deadline management
- Digital portfolio
Required Materials:
- 1 USB jump drive
Grading System:
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59
Student Learning Outcomes:
- Describe the principles used in designing various communications projects.
- Use desktop publishing equipment and software to create publications for graphic reproduction.
**ARV 217**

**Computer Imagery**

Hours: Class 2, Lab 3, Credit 3

Pre-requisite: CGC 110 with a minimum grade of "C.”

Co-requisite: None

Course Description:

This course covers the use of the computer as a tool to create images that address the needs of the visual communication field using Adobe Photoshop.

Course Topics:

- Tools and workspace of Adobe Photoshop
- Image manipulation
- Color correction
- Raster
- Use of Layers
- Typography with Images
- Montage
- Filters

Required Materials:

- 1 USB jump drive

Grading System:

- A 90 – 100
- B 80 – 89
- C 70 – 79
- D 60 – 69
- F 0 – 59

Student Learning Outcomes:

- Identify tools and applications in Adobe Photoshop software.
- Demonstrate basic photo corrections.
- Manipulate images using the selection tools.
- Demonstrate layer basics.
- Correct and enhance digital photos.
- Demonstrate the use of masks and channels.
- Create a design using typography.
- Demonstrate vector drawing techniques.
- Use advanced composition techniques in a design.

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**ARV 227**

**Web Site Design I**

Hours: Class 2, Lab 3, Credit 3

Pre-requisite: Prerequisite or co-requisite: CPT 101 with a minimum grade of "C.”

Co-requisite: None

Course Description:

This course is an introduction to the production of an interactive world wide web site.

Course Topics:

- Efficient internet search
- Information architecture
- User-centered design
- XHTML
- CSS
- Adobe Dreamweaver
- Web-page production
- Website production

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Required Materials:
- 1 USB jump drive

Grading System:
- A 90 – 100
- B 80 – 89
- C 70 – 79
- D 60 – 69
- F 0 – 59

Student Learning Outcomes:
- Demonstrate how to efficiently search the internet for specific topics.
- Critique successful, professional websites.
- Identify the structure used in the design of websites.
- Design websites using XHTML and CSS.
- Identify tools and work area in Adobe Dreamweaver software.
- Create professional web page headers.
- Demonstrate time management skills, adhering to all deadlines for assignments, tests, and projects.

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ARV 228
Website Design II

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ARV 227 with a grade of "C" or better.
Co-requisite: None

Course Description:
This course covers a study of advanced web site design techniques culminating in an interactive web site.

Course Topics:
- Investigating web site design careers
- Designing websites using HTML and CSS
- Constructing a final project website according to given criteria

Required Materials:
- 1 USB jump drive

Grading System:
- A 90 – 100
- B 80 – 89
- C 70 – 79
- D 60 – 69
- F 0 – 59

Student Learning Outcomes:
- Design a basic website.
- Create interactive forms and menus.
- Investigate options for fluid design.
- Identify components and uses of e-commerce.
- Research skills needed for a web site design career.

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ARV 261
Advertising Design I

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ARV 110 and ARV 217 with a minimum grade of "C."
Co-requisite: None

Course Description:
This course is an introduction to the advertising arts, including the principles, techniques, media, tools, and skills used in the visual communication field.

Course Topics:
- Advanced use of design principles
- Advertisement design
- Audience analysis
- Target market analysis
- Branding
- Customer relations
- Advertising campaigns

Required Materials:
- 1 USB jump drive
- A supply of pencils and a sketch pad.
- Access to course's D2L online component.

Grading System:

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Student Learning Outcomes:
- Demonstrate the principles and practices of advertising design.
- Create advertising designs that target a specific audience.
- Demonstrate graphic communication skills in advertisement layout, composition, and production.
- Analyze effective, professional advertisements and campaigns.
- Design an ad that fits the image of the brand.

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ARV 264
Special Project in Graphic Art

Hours: Class 2, Lab 3, Credit 3
Pre-requisite: ARV 163 with a minimum grade of "C."
Co-requisite: None
Course Description:
This course includes an advanced project as assigned from conception to final production.

Course Topics:
- Industry research
- Audience analysis
- Re-branding
- Multi-media campaigns
- Advanced digital design
- Digital portfolio of client's campaign
- Collaboration

Required Materials:
- 1 USB jump drive

Grading System:

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Student Learning Outcomes:
- Assess the client's goals for professional publications.
- Present a detailed report of client's publication needs.
- Produce a professional multi-media campaign.
- Produce a professional publications presentation.
- Develop and practice teamwork skills in cooperation, collaboration, negotiation, and group decision-making.

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ASL 101
American Sign Language I

Hours: Class 4, Lab 0, Credit 4
Pre-requisite: ENG 032 with a minimum grade of “C”.
Co-requisite: None

Course Description:
This course is a study of visual readiness and basic vocabulary, grammar features, and non-manual behaviors, all focusing on receptive language skill development.

Course Topics:
- Culturally appropriate behaviors for interacting in the Deaf community
- Differences between ASL and English, including sentence structure, verb types, pronouns and classifiers
- Fingerspelling and numbers (to 100)
- Introductions and exchanging personal information including school, work, family, friends, daily activities
- Storytelling and ASL Literature
- Influential Deaf leaders in history and the present
- Cultural beliefs, attitudes, and social norms that influence interactions in the Deaf community

Required Materials:
- CyberASL License Key for Signing Naturally, Units 1-6 (available in the SCC bookstore)

Grading System:
An overall grade of C or higher is required for transferability.

A 93 – 100
B 85 – 92
C 75 – 84
D 65 – 74
F 0 – 64

Student Learning Outcomes:
- Employ grammatical features of American Sign Language in both controlled and free expressive situations.
- Produce signed vocabulary and lexicon in both controlled and free expressive situations.
- Discuss topics in American Sign Language using vocabulary and grammar introduced.
- Develop culturally appropriate responses to situations in both controlled and free expressive situations.
- Demonstrate comprehension of sign vocabulary, lexicon and grammatical features of messages given in American Sign Language.
- Explain basic grammatical features of American Sign Language and Deaf culture which are presented in the content of the course.

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ASL 102
American Sign Language II

Hours: Class 4, Lab 0, Credit 4
Pre-requisite: ASL 101
Co-requisite: None

Course Description:
This course is a continuation of American Sign Language I, designed to expose students to additional vocabulary, grammar features, and non-manual behaviors, all focusing on conversational skills.

Course Topics:
- Vocabulary related to directions, descriptions, occupations
- Building on grammatical structures covered in ASL 101
- Storytelling
- Classifiers
- Verb types
- Spatial referencing
- Role shifting
- Money and time
- Conversational skill

Required Materials:
- Access to D2L
- Panopto account (provided by SCC) or YouTube for assignment recordings
- CyberASL License Key for Signing Naturally, Units 1-6 (available in the SCC bookstore)
Grading System:

An overall grade of C or higher is required for transferability.

A 93 – 100
B 85 – 92
C 75 – 84
D 65 – 74
F 0 – 64

Student Learning Outcomes:

- Employ grammatical features of American Sign Language in both controlled and free expressive situations.
- Produce signed vocabulary and lexicon in both controlled and free expressive situations.
- Discuss topics in American Sign Language using vocabulary and grammar introduced.
- Develop culturally appropriate responses to situations.
- Demonstrate comprehension of messages given in American Sign Language.
- Converse with native users of the language.

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ASL 201
American Sign Language III

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ASL 102
Co-requisite: None

Course Description:

This course is a continuation of American Sign Language II and covers additional vocabulary, grammar features, and non-manual behaviors, all focusing on conversational skills.

Course Topics:

- Vocabulary related to health, nationality, heritage, city and states
- Recurring and continuous time vocabularies and verb structures
- Making complaints, requests and negotiations
- Role shifting
- Complex sentence structures including phrases and clauses
- Classifiers
- Specialized signs related to careers
- Biographies and historical events
- Addresses
- Presenting research findings

Required Materials:

- Access to D2L
- Panopto account (provided by SCC) or YouTube for assignment recordings

Grading System:

An overall grade of C or higher is required for transferability.

A 93 – 100
B 85 – 92
C 75 – 84
D 65 – 74
F 0 – 64

Student Learning Outcomes:

- Employ grammatical features of American Sign Language in both controlled and free expressive situations.
- Produce signed vocabulary and lexicon in both controlled and free expressive situations.
- Discuss topics in American Sign Language using vocabulary and grammar introduced.
- Develop culturally appropriate responses to situations.
- Demonstrate comprehension of messages given in American Sign Language.
- Converse with native users of the language.

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ASL 202
American Sign Language IV

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ASL 201
Co-requisite: None

Course Description:
This course concentrates on intermediate conversational and discourse skills using American Sign Language. This course is conducted entirely using American Sign Language.

Course Topics:
- Incorporating classifiers into descriptions
- Verb aspect, temporal, durative, sequencing
- Numbers past 1,000
- Spatial relationships
- Cooking and recipes
- Layouts of buildings and rooms
- Comparison shopping
- Expressing opinions and justifying decisions
- Inventions throughout history in the Deaf community
- Planning a vacation
- Handshape stories

Required Materials:
- D2L access
- Panopto account (provided by SCC) or YouTube account

Grading System:
An overall grade of C or higher is required for transferability.

A 93 – 100
B 85 – 92
C 75 – 84
D 65 – 74
F 0 – 64

Student Learning Outcomes:
- Demonstrate grammatical features of American Sign Language at intermediate skill level.
- Discuss topics and create narratives in American Sign Language using appropriate ASL Discourse structure at a moderate to normal rate.
- Demonstrate culturally appropriate behaviors used in the Deaf community including proper levels of detail in descriptions.
- Demonstrate comprehension of messages given in American Sign Language by providing appropriate feedback.
- Present new information and make recommendations about assigned topics and people, incorporating reliable research sources.
- Examine authentic texts and literature to expand cultural and linguistic awareness.

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ASL 210
ASL Linguistic Structure

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ASL 102 or program director approval
Co-requisite: None

Course Description:
This course provides a study of the structure and grammar of American Sign Language (ASL), including the study of phonemes, morphemes, syntax, and semantics. Other topics covered include the relationship between ASL, spoken and other signed languages and historical change in ASL.

Course Topics:
- Phonology
- Morphology
- Syntax
- Semantics
- Prescriptive vs. descriptive language
- Universal functions of language
- Arbitrariness vs. iconicity
- Register
- Glossing and notation systems
- Language variation
- Discourse styles

Required Materials:
Web Camera
Panopto (provided by SCCOnline) or YouTube account for recording assignments
High speed Internet access for live class meetings

Grading System:
An overall grade of C or higher is required for transferability.
A 93 – 100
B 85 – 92
C 75 – 84
D 65 – 74
F 0 – 64

Student Learning Outcomes:
• Discuss general characteristics of language and correlate how ASL satisfies those requirements.
• Structure ASL signs according to the phonological models presented.
• Identify components of ASL morphology and their effects on syntactic structure.
• Analyze differences between ASL and English syntax.
• Produce grammatically accurate meaning-based sentences.
• Prepare effective translations and glosses of short discourse.

AST 101
SOLAR SYSTEM ASTRONOMY

Hours: Class 3, Lab 3, Credit 4
Pre-requisite: MAT 102 with a C or better.
Co-requisite: None

Course Description:
This course is a descriptive survey of the universe with emphasis on basic physical concepts and the objects in the solar system. Related topics of current interest are included in the course.

Course Topics:
• Our Place in the Universe
• Discovering the Universe for Yourself
• The Science of Astronomy
• Making Sense of the Universe: Understanding Motion, Energy, and Gravity
• Light: The Cosmic Messenger
• Formation of Planetary Systems: Our Solar System and Beyond
• Earth and the Terrestrial Worlds
• Jovian Planet System
• Asteroids, Comets, and Dwarf Planets: Their Nature, Orbits, and Impacts

Required Materials:
• Scientific, graphic calculator (TI series)
• MasteringAstronomy.com student access kit
• Voyager: SkyGazer College Edition v3.7 CD-ROM, 4/E

Grading System:
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
• Describe the our origin and place in the universe, and cosmic scale in time and space.
• Describe night sky patterns of celestial objects, phase of moon, eclipses, and seasons.
• Describe the historical development of astronomy and the physical laws for the formation and movements of astronomical objects.
• Describe the property of telescope and how light used for the observation of distant objects.
• Describe the origin of the solar formation and evolution and methods for the search for exoplanets.
• Describe the structures, compositions, motions of Jovian and Terrestrial planets, and the motion, compositions and locations of leftover planetesimals in solar formation.
• Use computer software to identify celestial objects and simulate celestial movements.

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AST 102
Stellar Astronomy

Hours: Class 3, Lab 3, Credit 4
Pre-requisite: AST 101 with a C or better.
Co-requisite: None
Course Description:
This course is a descriptive survey of the universe with emphasis on basic physical concepts and galactic and extra-galactic objects. Related topics of current interest are included in the course.

Course Topics:
- Our Star
- Surveying the Stars
- Star Stuff
- The Bizarre Stellar Graveyard
- Our Galaxy
- Galaxies and the Foundation of Modern Cosmology
- Dark Matter, Dark Energy, and the Fate of the Universe
- The Beginning of Time
- Life in the Universe

Required Materials:
- Scientific, graphic calculator (TI series)
- MasteringAstronomy.com student access kit

Grading System:
- A 90 – 100
- B 80 – 89
- C 70 – 79
- D 60 – 69
- F 0 – 59

Student Learning Outcomes:
- Describe the Sun's structure, compositions, energy source and its mechanism, surface phenomena, and connection to Earth.
- Describe the property of stars and star clusters, patterns in the Hertzsprung-Russell diagram, the life cycle of a star about star birth, evolution and death, and how mass of star determines its fate.
- Describe the consequences of stellar life, the star's basic properties and structure, and evolution of galaxies.
- Describe the structure and motion and history of our galaxy, Milky Way galaxy, and the various techniques used by astronomers to determine the distance.
- Describe the dark matter and dark energy, structure formation and fate of the universe, and the large cosmological model.
- Retrace the origin of life on earth, and describe efforts in the search for life elsewhere in the universe.
- Use computer software to identify celestial objects and simulate celestial movements.

AUT 100
Introduction to Automotive Hazardous Materials

Hours: Class 0, Lab 3, Credit 1
Pre-requisite: AUT 132 or AUT 133
Co-requisite: None
Course Description:
This course is a basic study of the proper handling of hazardous materials found in automotive service centers. Topics include types of hazardous materials, handling of the materials, and their proper disposal.

Course Topics:
- Shop Safety
- Environmental and Hazardous Materials
- Hazardous Materials Disposal
- EPA Regulations
- OSHA Regulations

Required Materials:
- Safety Glasses
Grading System:
An overall grade of C or higher is required for transferability.
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 -59

Student Learning Outcomes:
- Identify automotive service related environmental issues.
- Differentiate automotive service environmental compliance issues into appropriate state and federal
- Identify automotive service related health and safety issues.
- Relate automotive service health and safety issues to regulations.
- Compose an environmental self-inspection survey of an automotive facility.
- Identify the required marks & labels required for automotive hazardous materials and after-market auto care products & chemicals.

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AUT 107
Advanced Engine Repair
Hours: Class 3, Lab 3, Credit 4
Pre-requisite: AUT 132 or AUT 133
Co-requisite: None
Course Description:
This course includes an advanced application of engine fundamentals, including engine removal, internal diagnostic and repair procedures, engine assembly and installation procedures.

Course Topics:
- Cooling System Operation and Diagnosis
- Lubrication System and Diagnosis
- Gaskets and Sealants
- Camshafts, Valvetrain, and Engine Timing Components
- Engine Cleaning and Component Inspection

Required Materials:
- Safety Glasses

Grading System:
An overall grade of C or higher is required for transferability.
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 -59

Student Learning Outcomes:
- Examine the four stroke cycle of an internal combustion engine.
- Identify the components of an internal combustion engine.
- Demonstrate the proper procedure for internal combustion engine removal and installation.
- Classify the function of the major systems of an internal combustion engine.
- Identify the different types of engine coolants.
- Show the ability to diagnose base engine concerns.
- Describe the importance of and how the engine lubricating system works.

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AUT 111
Brakes
Hours: Class 2, Lab 3, Credit 3
Pre-requisite: AUT 132 or AUT 133
Co-requisite: None
Course Description:
This course is a study of the fundamentals of hydraulics and brake components in their application to automotive brake systems.
Course Topics:
- Hydraulic Systems
- Brake Bleeding Methods and Procedures
- Drum Brakes
- Disc Brakes
- ABS Systems
- Electronic Stability Control Systems

Required Materials:
- Safety Glasses

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 -59

Student Learning Outcomes:
- Dissect information on brake system problems and repair procedures.
- Explain standard hydraulic brake system operation and function.
- Show the ability to perform basic diagnosis, adjustments, and repair of standard hydraulic brake systems.
- Illustrate the operation of light truck rear anti-lock brake systems.
- Perform basic diagnosis on light truck rear anti-lock brake systems.
- Describe the operation of four (4) wheel anti-lock brake system.
- Perform four (4) wheel anti-lock brake system diagnosis and repair.

AUT 112
Brake Systems

Hours: Class 1, Lab 9, Credit 4
Pre-requisite: AUT 132 or AUT 133
Co-requisite: None
Course Description:
This course covers hydro-boost power brakes and vacuum power brakes as well as master cylinders and caliper rebuilding.

Course Topics:
- Caliper Rebuilding
- Power Braking Systems
- Master Cylinders
- Front Brake Service
- Rear Brake Service

Required Materials:
- Safety Glasses

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 -59

Student Learning Outcomes:

AUT 115
Manual Drivetrain/Axles

Hours: Class 2, Lab 3, Credit 3
Pre-requisite: AUT 132 or AUT 133

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Co-requisite: None
Course Description:

This course is a basic study of clutches, gearing, and manual transmission operation, including the basic study of rear axles and rear axle set up.

Course Topics:

- Clutches
- Gearing
- Manual Transmission Operation and Repair
- Manual Transaxle Operation and Repair
- Differential Operation, Set up, and Repair

Required Materials:

- Safety Glasses

Grading System:

An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 -59

Student Learning Outcomes:

- Identify and correct clutch components.
- Identify and correct manual transmission/transaxle concerns.
- Perform drive/half shaft and universal joint service.
- Interpret rear axle gear patterns.
- Perform four-wheel drive service and adjustments.
- Describe the relationship between speed and torque related to gear ratios.
- Illustrate the power flow through a typical manual transmission.

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AUT 132
Automotive Electricity

Hours: Class 3, Lab 3, Credit 4
Pre-requisite: None
Co-requisite: AUT 160
Course Description:

This course is a study of electricity as used in automotive applications. This course includes dc and ac principles and their various uses in the automobile. The relationship between Ohm's Law and actual automotive circuits is demonstrated.

Course Topics:

- Electrical Circuits and Ohm's Law
- Circuit Construction
- Circuit Testers
- Wiring and Wire Repair
- Batteries
- Charging Systems
- Starting Systems

Required Materials:

- Safety Glasses

Grading System:

An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 -59

Student Learning Outcomes:

- Explain the basic principles of automotive electrical systems.
- Construct basic automotive circuits.
• Use automotive electrical measuring devices.
• Test the operation of the components used in automotive electrical systems.
• Show the ability to use service literature to assist in testing and diagnosis.
• Distinguish between the principles and uses of Alternating Current and Direct Current.
• Correlate the relationship between Ohm's Law and actual automotive circuit measurement.

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AUT 133
Electrical Fundamentals

Hours: Class 1, Lab 0, Credit 3
Pre-requisite: AUT 132 or AUT 160
Co-requisite: None

Course Description:
This course is a study of the theories of electricity, including magnetism, series and parallel circuits, Ohm's Law and an introduction to the use of various electrical test equipment.

Course Topics:
• Electrical Circuits and Ohm's Law
• Circuit Testers
• Wiring and Wire Repair Techniques
• Schematics
• Circuit Testing

Required Materials:
• Safety Glasses

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 -59

Student Learning Outcomes:

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AUT 135
Ignition Systems

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: AUT 132 or AUT 133
Co-requisite: None

Course Description:
This course is a study of both primary and secondary electronic ignition systems, including distributorless ignition systems, theory of operation and diagnostic techniques, application of diagnostics using the oscilloscope, and other appropriate test equipment.

Course Topics:
• Ignition System Diagnosis
• Ignition System Repair
• Ignition Primary Circuits
• Ignition Secondary Circuits
• Ignition Coils

Required Materials:
• Safety Glasses

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 -59
AUT 142
Heating and Air Conditioning

Hours: Class 2, Lab 3, Credit 3
Pre-requisite: AUT 132 or AUT 133
Co-requisite: None
Course Description:
This course covers the purpose, construction, operation, diagnosis, and repair of automotive ventilation, heating, and air conditioning systems.

Course Topics:
- HVAC Components and Operation
- Automatic Air Conditioning Systems
- HVAC Principles of Operation

Required Materials:
- Safety Glasses

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 -59

Student Learning Outcomes:
- Point out the major systems, and list the components, associated with those systems.
- Subdivide the four (4) principles of Climate Control.
- Properly connect test equipment and evaluate the readings.
- Demonstrate the proper diagnosis of air distribution systems.
- Demonstrate the proper diagnosis of air refrigeration systems.
- Operate the proper equipment to discharge, recycle, and recharge of refrigerant.
- Solve (diagnose) electronically controlled refrigeration system concerns.

AUT 143
Active Devices and Sensors

Hours: Class 2, Lab 6, Credit 4
Pre-requisite: AUT 132 or AUT 133
Co-requisite: None
Course Description:
This course covers the basic operation of electronic devices and sensors, including basic circuits, applications, and diagnosis.

Course Topics:
- Electrical Circuit Diagnosis
- Electrical Circuit Repair
- Sensor Diagnosis
- Scan Tool Operation

Required Materials:
- Safety Glasses

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 -59

Student Learning Outcomes:
AUT 145
Engine Performance

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: AUT 132 or AUT 133
Co-requisite: None

Course Description:
This course covers the diagnosis of various performance problems using the appropriate diagnostic equipment and diagnostic manuals. Logical thinking is also included in the course.

Course Topics:
- Scan Tool Operation
- On Board Diagnostics II
- Emissions Related Sensors and Operation
- Emissions Related Output Devices and Operation

Required Materials:
- Safety Glasses

Grading System:
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 -59

Student Learning Outcomes:
- Discover the major systems related to engine performance.
- Summarize the major systems associated with engine performance.
- Facilitate test equipment selection, setup, and test procedures for engine performance testing.
- Retrieve data from test equipment and diagnose faults.
- Relate how different types of inputs affect engine operation.
- Relate how different types of outputs affect engine operation.
- Defend the need for emission control systems.

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AUT 156
Automotive Diagnosis and Repair

Hours: Class 2, Lab 6, Credit 4
Pre-requisite: AUT 132 or AUT 133
Co-requisite: None

Course Description:
This is a basic course for general diagnostic procedures and minor repairs.

Course Topics:
- Maintenance Procedures
- Light Repair Procedures
- Brake Repairs
- Steering and Suspension Repairs
- Tire and Wheel Balancing

Required Materials:
- Safety Glasses

Grading System:
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 -59

Student Learning Outcomes:
- Demonstrate the ability to use service literature to assist in testing and diagnosis.
- Explain power brake operation.

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- Summarize anti-lock brake systems.
- Perform brake system diagnosis and repairs.
- Illustrate how to properly diagnose wheel alignment concerns.
- Demonstrate the proper wheel alignment procedure.
- Complete CV joint, bearing and seal service.
- Employ the correct wheel and tire service and repair techniques.

**AUT 160**

**Introduction to Automotive Technology**

**Hours:** Class 1, Lab 0, Credit 1

**Pre-requisite:** Department chair approval

**Co-requisite:** AUT 132 or AUT 133

**Course Description:**

This course is an introduction to the automotive field, including an introduction to the different automotive fields available such as automotive technician, shop foreman, service manager, shop owner, etc.

**Course Topics:**

- Careers in the Automotive Service Industry
- Hand Tools
- Vehicle Lifting and Hoisting
- Measuring System and Tools
- Working as a Professional Technician

**Required Materials:**

- Safety Glasses

**Grading System:**

- A 90 – 100
- B 80 – 89
- C 70 – 79
- D 60 – 69
- F 0 – 59

**Student Learning Outcomes:**

- Demonstrate safe work habits.
- Determine proper application of automotive fasteners, seals, and gaskets.
- Identify automotive service occupations, terminology, components, and systems.
- Demonstrate appropriate shop manual and service publication.
- Employ basic maintenance, vehicle pre-delivery, and service techniques.
- Demonstrate appropriate tool selection and usage.

**AUT 165**

**Environmental Management**

**Hours:** Class 3, Lab 0, Credit 3

**Pre-requisite:** AUT 132 or AUT 160

**Course Description:**

This course covers all areas of environmental management as it applies to automotive repair facilities. Areas to be covered include proper containment and disposal of automotive waste such as oil, anti-freeze, batteries, filters and other contaminants. Minimization of waste production in automotive servicing facilities will be stressed as well as familiarization with current federal and state compliance regulations. Students will survey automotive repair facilities for compliance.

**Course Topics:**

- Shop Safety
- Environmental and Hazardous Materials
- Hazardous Materials Disposal
- EPA Regulations
- OSHA Regulations

**Required Materials:**

- Safety Glasses

**Grading System:**
A 90 – 100  
B 80 – 89  
C 70 – 79  
D 60 – 69  
F 0 -59

Student Learning Outcomes:

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AUT 221
Suspension and Steering Diagnosis

Hours: Class 2, Lab 3, Credit 3  
Pre-requisite: AUT 132 or AUT 133  
Co-requisite: None  
Course Description:

This course covers the diagnosis and repair of front and rear suspension, using suspension diagnostic charts, shop manuals, and alignment equipment.

Course Topics:

- Tires and Wheels  
- TPMS Systems  
- Front Suspension Service  
- Rear Suspension Service  
- Wheel Alignments  
- Power Assisted Steering Systems

Required Materials:

- Safety Glasses

Grading System:

A 90 – 100  
B 80 – 89  
C 70 – 79  
D 60 – 69  
F 0 -59

Student Learning Outcomes:

- Diagnose and repair suspension concerns.  
- Diagnose and repair manual/power steering concerns.  
- Perform wheel alignment procedures.  
- Interpret alignment angles given while using alignment equipment.  
- Diagnose and repair electronic steering systems.  
- Diagnose and repair electronic suspension system.

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AUT 222
Four Wheel Alignment

Hours: Class 1, Lab 3, Credit 2  
Pre-requisite: AUT 132 or AUT 160  
Co-requisite: None  
Course Description:

This course is a review of alignment angles and adjusting procedures used in four wheel alignment, including the use of four wheel alignment equipment.

Course Topics:

- 2 Wheel Alignment Procedures  
- 4 Wheel Alignment Procedures  
- Alignment Angle Corrective Procedures  
- Alignment Angle Diagnosis

Required Materials:

- Safety Glasses

Grading System:
AUT 231

Automotive Electronics

Hours: Class 4, Lab 0, Credit 4
Pre-requisite: AUT 132 or AUT 133
Co-requisite: None
Course Description:

This course includes the study of solid state devices, microprocessors, and complete diagnostics using the latest available equipment.

Course Topics:
- Networking and Multiplexing
- Transistors
- Capacitors
- Electronic Diagnosis

Required Materials:
- Safety Glasses

Grading System:
- A 90 – 100
- B 80 – 89
- C 70 – 79
- D 60 – 69
- F 0 -59

Student Learning Outcomes:
- Recognize the major systems, and list their components, associated with solid state control.
- Illustrate schematic of the sensing devices used in solid state control devices.
- Perform voltage, current, and resistance calculations on solid state devices.
- Perform test equipment setup, hookup, and test procedures for measuring solid state components.
- Diagnose and repair faulty components using the symptom to system, system to component, component to cause diagnostic procedures.
- Identify the microprocessor control components and their function.

AUT 232

Automotive Accessories

Hours: Class 2, Lab 0, Credit 2
Pre-requisite: AUT 132 or AUT 133
Co-requisite: None
Course Description:

This course is a study of devices and systems considered accessories by the automotive industry. Study includes windshield wiper systems, power door locks, windows and seats, radios, and clocks.

Course Topics:
- Accessory Circuits
- Air Bags and Pretensioners
- Driver Information and Navigation Systems
- Lighting and Signaling Circuits
- Systems listed in course description

Required Materials:
- Safety Glasses

Grading System:
A 90 – 100  
B 80 – 89  
C 70 – 79  
D 60 – 69  
F 0 – 59

Student Learning Outcomes:

- Diagnose supplemental restraint system (SRS) concerns.
- Diagnose and repair dash instrument concerns.
- Diagnose and repair concerns in various automotive accessories circuits.
- Diagnose and repair audio system concerns.
- Solve power window circuit malfunctions.
- Repair electronically controlled windshield wiper systems.
- Distinguish the operating characteristics of adaptive cruise control and how to diagnose and repair those systems.

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AUT 245
Advanced Engine Performance

Hours: Class 4, Lab 3, Credit 5
Pre-requisite: AUT 132 or AUT 133
Co-requisite: None

Course Description:
This course includes “hands-on” diagnostics, including an in-depth study and use of the oscilloscope in diagnosing engine performance problems.

Course Topics:

- DTC Driven Diagnosis
- Symptom Driven Diagnosis
- Scan Tool

Required Materials:

- Safety Glasses

Grading System:
A 90 – 100  
B 80 – 89  
C 70 – 79  
D 60 – 69  
F 0 – 59

Student Learning Outcomes:

- Summarize the history of the EEC computer control system.
- Illustrate a schematic of the different input sensors and their functions.
- Differentiate between the type output actuators and their functions.
- Identify different types of PCM control strategies.
- Perform test equipment setup, hookup, and test procedures for OBDII computer systems.
- Diagnose and repair subsystem failures (hard fault), intermittent failure (continuous), and out of range failures.
- Solve the cause of component failure.

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AUT 251
Automatic Transmission Overhaul

Hours: Class 4, Lab 3, Credit 5
Pre-requisite: AUT 132 or AUT 133
Co-requisite: None

Course Description:
This course is an advanced study of transmission overhaul procedures, including proper overhaul procedures used to repair overdrive transmissions and transaxles.

Course Topics:

- Automatic Transmission/Transaxle Principles
- Hydraulic Components and Controls
- Automatic Transmission/Transaxle Diagnosis
AUT 262
Advanced Automotive Diagnosis and Repair

Hours: Class 0, Lab 12, Credit 4
Pre-requisite: AUT 132 or AUT 133
Co-requisite: None
Course Description:
This course is an advanced study of the proper diagnostic and repair procedures required on newer computerized automobiles, including scan tool and digital multi-meter operation.

Course Topics:
- Electrical Circuit Diagnosis and Repair
- Electronic Devices Diagnosis and Repair
- Electrical Tools
- Scan Tool Operation

Required Materials:
- Safety Glasses

Grading System:
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 -59

Student Learning Outcomes:
- Differentiate between the different types of self-tests.
- Subdivide the different types of code outputs.
- Diagnose intermittent concerns using enhanced testing equipment.
- Subdivide the different types of input sensors.
- Subdivide the different types of output components.
- Show the ability to diagnose problems caused by failed or out of range inputs.
- Show the ability to diagnose problems caused by failed or out of range outputs.

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AUT 275
Alternative Technology Vehicles

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: AUT 132 or AUT 133
Co-requisite: None
Course Description:
This course is the study of vehicles powered with gasoline engines in combination with other non-gasoline power systems. Hybrid, Fuel Cell, compressed gases and diesel/bio-diesel and Homogeneous Charge Compression Ignition (HCCI) technology will be covered in this course.

Course Topics:
- Hybrid Safety and Service Procedures
- Fuel Cells and Advanced Technologies
- Ethanol
- Biodiesel
- Compressed Natural Gas

Required Materials:
- Safety Glasses

Grading System:
A 90 – 100  
B 80 – 89  
C 70 – 79  
D 60 – 69  
F 0 -59

Student Learning Outcomes:
- Identify the common alternative technology vehicle types.
- Identify the types and specifications of personal protective equipment required when working with hybrid electric vehicles.
- Outline the control systems for the hybrid technology.
- Classify the different types of hybrid vehicles.
- Illustrate the control systems for the compressed gas technology.
- Examine the control systems for the Bio-fuel technology.

BAF 101
Personal Finance

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: MAT 032, ENG 032, RDG 032
Co-requisite: None

Course Description:
This course includes the practical applications of concepts and techniques used in managing personal finances. Major areas of study include financial planning, budgeting, credit use, housing, insurance, investments, and retirement planning.

Course Topics:
- Personal Financial statements
- Time Value of money
- Personal taxes
- Managing Cash and savings
- Automobile and housing decisions
- Consumer credit
- Insurance needs
- Investment objectives
- Retirement and estate planning

Required Materials:
- Online component access code (see instructor for details)

Grading System:
An overall grade of C or higher is required for transferability.
A 90-100  
B 80-89  
C 70-79  
D 60-69  
F 0-59

Student Learning Outcomes:
- Define personal financial goals.
- Prepare personal financial statements.
- Solve the time value of money concepts.
• Prepare personal taxes.
• Develop a savings strategy.
• Develop a plan for a home buying and purchase or lease alternatives for selection of a vehicle.
• Calculate insurance needs.
• Describe retirement needs and estate planning.

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BAF 260
Financial Management

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ACC 101 with a minimum grade of "C."
Co-requisite: None
Course Description:

This course is a study of financial analysis and planning. Topics include working capital management, capital budgeting, and cost of capital.

Course Topics:
• Financial assets, markets, and management
• Financial ratios
• Financial forecasting
• Budgets and business planning
• Corporate financial performance
• Time-Value of money
• Interest rate components
• Characteristics of stocks and bonds
• Risk and return
• Capital budgeting
• Cash flows

Required Materials:
• Online component access code (see instructor for details)

Grading System:
An overall grade of C or higher is required for transferability.

A 90-100
B 80-89
C 70-79
D 60-69
F 0-59

Student Learning Outcomes:
• Evaluate financial assets, markets and management.
• Compute and analyze financial ratios.
• Apply financial forecasting to produce budgets and business planning.
• Compute the time value of money.
• Evaluate the characteristics of stocks and bonds.
• Calculate risk and return.
• Evaluate capital budgeting initiatives.
• Determine cash flow estimations.

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BIO 100
Introductory Biology

Hours: Class 3, Lab 3, Credit 4
Pre-requisite: RDG 100
Co-requisite: MAT 101 or MAT 152
Course Description:

This is a course in general biology designed to introduce principles of biology. A minimum grade of "C" is required in order to receive credit in this course. (Non-Degree Credit)

Course Topics:
• The essential parts: atoms, molecules and cells
• The fundamental building blocks
• The biological molecules
The utilization of energy and its transformations
Genetics and cellular division
The structure and function of the integumentary system
The structure and function of the skeletal system
The structure and function of the muscular system
The structure and function of the digestive system
The structure and function of the urinary and reproductive system
The structure and function of the respiratory system

Required Materials:
- Safety glasses (OSHA approved)
- Calculator
- Vocabulary Folder
- Lab coat (optional).

Grading System:
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Interpret science as a way of learning using the scientific process.
- Identify the essential part of atoms, molecules, and cells.
- Demonstrate proper safety in the laboratory.
- Properly use and maintain the compound microscope.
- Use metric units and readily convert between units.
- Describe energy and its transformations.
- Examine how genetics works and cell division.
- Identify human anatomy and physiology.

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BIO 101
Biological Science I

Hours: Class 3, Lab 3, Credit 4
Pre-requisite: ENG 100 and (MAT 101 or MAT 152), and RDG 100 with a minimum grade of "C" in all courses.
Co-requisite: None

Course Description:
This course is a study of the scientific method, basic biochemistry, cell structure and function, cell physiology, cell reproduction and development, Mendelian genetics, population genetics, natural selection, evolution, and ecology.

Course Topics:
- Characteristics and organization of life.
- Chemical properties of life.
- Major organic compounds in cells and their importance.
- Major differences and characteristics of prokaryotic and eukaryotic cells.
- Intracellular structure and function.
- Kinds of cellular reproduction and their importance.
- The energy of Life.
- Structure and function of DNA and RNA in protein synthesis.
- Major principles of genetics
- Collecting data and formulate conclusions based on experimental results using the scientific method

Required Materials:
All lecture notes will be posted on Desire2Learn (D2L) and/or the Science Website. Any additional resources (handouts) will be provided to the student by the instructor. Video recorded lectures are found under the Panopto Lecture Capture application on the Portal.

Grading System:
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59
Student Learning Outcomes:

- Distinguish between the levels of biological organization and between the components of the scientific method.
- Identify major organic molecules in cells and their importance.
- Describe cells, their organelles, cell processes and their importance.
- Solve genetics problems based on Mendelian genetics, discussing the importance of modern genetics in society.
- Describe the structure and function of DNA and RNA in protein synthesis.
- Perform laboratory assignments, including collecting data and formulating conclusions based on experimental results.

BIO 102
Biological Science II

Hours: Class 3, Lab 3, Credit 4
Pre-requisite: BIO 101 with a minimum grade of "C" or better.
Co-requisite: None

Course Description:
This course is a study of the classification of organisms and structural and functional considerations of all Kingdoms (Particularly major phyla as well as viruses). Vertebrate animals and vascular plants are emphasized.

Course Topics:
- Evolution of Life
- Diversity of Life
- Plant Life
- Animal Life
- Ecology of Life

Required Materials:
All lecture notes will be posted on Desire2Learn (D2L) and/or the Science Website. Any additional resources (handouts) will be provided to the student by the instructor.

Grading System:
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Describe anatomical structures and life cycles of Viruses.
- Identify characteristics for Domain Bacteria and Domain Archaea.
- Identify classification systems and characteristics for Kingdom Protista, Kingdom Fungi, Kingdom Plantae, and Kingdom Animalia, placing representative organisms within the correct classification system.
- Describe the scope of ecology including the demographics of populations, growth models regulation of population size and life history patterns.
- Discuss the history of evolutionary thought, methods by which populations evolve, speciation, and evidences of macroevolution.
- Prepare and present a scientific presentation on an aspect of biology.

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BIO 110
General Anatomy and Physiology

Hours: Class 2, Lab 3, Credit 3
Pre-requisite: ENG 100, MAT 101 or MAT 152, RDG 100, high school biology (or BIO 100) or high school chemistry (or CHM 100) with a minimum grade of "C" in all courses. This course is for massage therapy students.
Co-requisite: None

Course Description:
This course is a general introduction to the anatomy and physiology of the human body. Emphasis is on the organ systems of the human and their interrelationships.
Course Topics:
Required Materials:
None
Grading System:
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59
Student Learning Outcomes:

Course Description:
This course is a basic integrated study of the structure and function of the human body.

Course Topics:
- The terminology related to the anatomical organization and regulation of the body
- The basic chemistry of the body
- The structure and function of the cells and tissues of the body
- The structure and function of the integumentary system
- The structure and function of the skeletal and muscular systems
- The structure and function of the nervous system
- The structure and function of the endocrine system
- The structure and function of the lymphatic system to include immunity
- The structure and function of the cardiovascular system
- The structure and function of the respiratory system
- The structure and function of the digestive system to include metabolism
- The structure and function of the urinary and reproductive systems

Required Materials:
None
Grading System:
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59
Student Learning Outcomes:
- Describe the anatomical organization of the body.
- Explain the relationship between the components of an atom and how chemical bonds are formed.
- Distinguish between the organelles of a cell and the functions of each.
- Describe the process of Mitosis and distinguish between the phases.
- Describe the organization of the four tissue types of the human body.
- Describe the organization of the 11 organ systems of the human body.

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BIO 210
Anatomy and Physiology I
Hours: Class 3, Lab 3, Credit 4
Pre-requisite: Prerequisite (s): MAT 101 or MAT 152, ENG 100, and RDG 100 with a minimum grade of
Co-requisite: None
Course Description:
This is the first in a sequence of courses, including an intensive coverage of the body as an integrated whole.
All body systems are studied.

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Course Topics:
- Anatomical terminology describing body regions, body planes, and directional references
- Homeostasis, negative and positive feedback
- Chemical level of organization
- Cellular and tissue level of organization
- Metabolism and energetics
- Structure and function of the integumentary system
- Structure and function of the skeletal system
- Structure and function of the muscular system
- Structure and function of the nervous system
- Structure and function of the special senses

Required Materials:
Any additional resources will be provided by the Instructor.

Grading System:
- A 90 – 100
- B 80 – 89
- C 70 – 79
- D 60 – 69
- F 0 – 59

Student Learning Outcomes:
- Recognize the major functions of the various cells of the skeletal system.
- Demonstrate an understanding of the processes of glycolysis, glycogenolysis, gluconeogenesis, and glycogenesis.
- Recognize the outcomes of the chemical reactions involved in the Citric Acid Cycle.
- Recognize the role of Na+/-K+ ATPase in the generation of muscle/neuron cell transmembrane electrochemical gradients.
- Demonstrate knowledge of the components of a sarcomere.
- Distinguish among voltage-gated, chemically or ligand-gated, and mechanically-gated channels.
- Distinguish between activities either stimulated or inhibited by the parasympathetic and sympathetic nervous systems.

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BIO 211
Anatomy and Physiology II

Hours: Class 3, Lab 3, Credit 4
Pre-requisite: BIO 210 with a grade of "C" or better.
Co-requisite: None

Course Description:
This is a continuation of a sequence of courses, including intensive coverage of the body as an integrated whole. All body systems are studied.

Course Topics:
- Structure and function of the endocrine system
- Blood, blood cells, blood types, and hemostasis
- Structure and function of the cardiovascular system
- Structure and function of the lymphatic system
- Structure and function of the respiratory system
- Structure and function of the digestive system
- Structure and function of the urinary system
- Structure and function of the reproductive system

Required Materials:
Any additional resources will be provided by the Instructor.

Grading System:
- A 90 – 100
- B 80 – 89
- C 70 – 79
- D 60 – 69
- F 0 – 59

Student Learning Outcomes:
- Recognize the various factors that may influence the degree of target cell activation.
• Demonstrate an understanding of the mechanisms involved in the opening and closing of the atrioventricular and semilunar valves.
• Recognize events responsible for the different phases of the cardiomyocyte action potential.
• Demonstrate an understanding of the relationship between bronchiole diameter and resistance to airflow.
• Demonstrate knowledge of the functions of digestive system hormones.
• Recognize the basic purpose or function of the kidney medullary osmotic gradient.
• Recognize the function of the pampiniform plexus.

BIO 215
HUMAN ANATOMY

Hours: Class 3, Lab 3, Credit 4

Pre-requisite: Prerequisite(s): BIO 101 or BIO 112 with a "C" or better.

Co-requisite:

Course Description:

This course is a study of the structure of the human body in relation to normal and pathologic states.

Course Topics:

- Anatomical terminology describing body regions, body planes, and directional references
- Structure of the integumentary system
- Structure of the skeletal system
- Structure of the muscular system
- Structure of the nervous system
- Structure of the special senses
- Structure of the cardiovascular system
- Structure of the lymphatic system
- Structure of the respiratory system
- Structure of the digestive system
- Structure of the urinary system

Required Materials:

Grading System:

Student Learning Outcomes:

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BIO 216
HUMAN PHYSIOLOGY

Hours: Class 3, Lab 3, Credit 4

Pre-requisite:

Co-requisite: BIO 215 with a grade of "C" or better.

Course Description:

This course is a study of human physiological processes in relation to homeostasis.

Course Topics:

- Homeostasis, negative and positive feedback
- Chemical level of organization
- Cellular and tissue level of organization
- Metabolism and energetics
- Function of the skeletal system
- Function of the muscular system
- Function of the nervous system
- Function of the special senses
- Function of the cardiovascular system
- Function of the lymphatic system
- Function of the respiratory system
- Function of the digestive system
- Function of the urinary system
- Function of the reproductive system

Required Materials:

Grading System:

Student Learning Outcomes:

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BIO 225
Microbiology

Hours: Class 3, Lab 3, Credit 4
Pre-requisite: BIO 101 or BIO 210 or BIO 216 with a grade of "C" or better.
Co-requisite: None

Course Description:
This is a detailed study of microbiology as it relates to infection and the disease processes of the body. Topics include immunity, epidemiology, medically important microorganisms, and diagnostic procedures for identification.

Course Topics:
- Major themes of Microbiology
- Tools of the Laboratory: Methods for studying microorganisms
- Prokaryotic profiles: Archae and Bacteria
- Eukaryotic cells and microorganisms
- Introduction to viruses
- Microbial nutrition, ecology, and growth
- Microbial metabolism
- Microbial genetics
- Genetic engineering
- Physical and Chemical control methods for microbes
- Interactions between drugs, microbes, and hosts
- Infection and Disease
- Nonspecific immune response
- Specific immune response
- Disorders in immunity: hypersensitivity, autoimmune disorders, and immunodeficiency
- Infectious diseases of the skin, eyes, respiratory tract, nervous system, circulatory system, lymphatic system, gastrointestinal tract, and urogenital tract

Required Materials:
All lecture notes will be provided to the students by the instructor. Safety goggles are provided but student is free to bring their own.

Grading System:
A 90-100
B 80-89
C 70-79
D 60-69
F 0-59

Student Learning Outcomes:
- Recognize and describe the major physiological characteristics and classifications of the prokaryotes, eukaryotic microbes, and viruses.
- Describe the major biochemical events that take place in microbial cells including nutrient uptake, metabolism, growth/replication, protein synthesis, and recombination.
- Describe the effects of environmental factors on microbial growth including: temperature, oxygen levels, osmolarity, pH, and ecological associations.
- Describe the mechanisms associated with the various forms of microbial control and development of antimicrobial resistance.
- Describe the major types of infection and how they are transmitted between hosts.
- Recognize and describe the mechanisms involved with the nonspecific immune response, the specific immune response, and hypersensitivity reactions.
- Identify the major characteristics of major human diseases by body system.

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BIO 238
MUSCULOSKELETAL SYSTEM ANATOMY

Hours: Class 2, Lab 3, Credit 3
Pre-requisite: BIO 110 with a grade of "C" or higher, or successful completion of prior program requirements. Admission into the Therapeutic Massage Program.
Co-requisite: None

Course Description:
This course is a study of the muscular and skeletal systems with laboratory exercises on the bones, bone markings, and the muscles addressing their origin, insertion, innervation, and action.
Course Topics:
Required Materials:
None
Grading System:
A 93-100
B 85-92
C 77-84
D 70-76
F 0-69
Student Learning Outcomes:

BIO 240

Nutrition

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: MAT 101, ENG 100, and RDG 100 with a minimum grade of "C" in all courses.
Co-requisite: None
Course Description:
This course is an introduction to the essential aspects concerning the science of nutrition. Particular emphasis is on the classes of nutrients and their physiological uses in the body. Body energy requirements and the nutritional status of the world are considered.

Course Topics:
Required Materials:
Any additional resources (handouts) will be provided to the Student by the Instructor.
Grading System:
A 90-100
B 80-89
C 70-79
D 60-69
F 0-59
Student Learning Outcomes:

• Identify diet and lifestyle factors important in promoting health and preventing disease.
• Identify and explain energy nutrients and the role of energy balance on health.
• Define the micronutrients, vitamins and minerals.
• Describe the role of water, vitamins and minerals in promoting growth, development and maintenance of the body and in regulating body processes.
• Describe the relationship between nutrition and fitness, sports and eating disorders.
• Describe nutrition as it relates to specific life stages.

BKP 112

Introduction to Baking Science

Hours: Class 0, Lab 3, Credit 1
Pre-requisite: None
Co-requisite: None
Course Description:
This course is the study of ingredient functions, product identification, weights and measures as they apply to baking. Students learn to identify various types of flours, leaveners, and pastry ingredients that affect the outcomes of their finished baked goods.

Course Topics:

• Baking terms
• Equipment and utensils used in baking and proper use and care.
• Proper selection of equipment and utensils for specific application.
• Ingredients used in baking.
• Proper scaling and measurement techniques.
• Basic math skills to recipe conversions.
• Properties and function of various ingredients.
• Production of yeast-leavened breads.
• Preparing and evaluating the quality of a variety of yeast-leavened breads.
Quick-breads and the mixing methods utilized to produce them.
Preparation and evaluating the quality of a variety of quick-breads.
Pies and tarts and the mixing methods utilized to produce them.
Preparation and evaluating the quality of a variety of pies and tarts.
Cookie types and the mixing methods utilized to produce them.
Producing and evaluating the quality of a variety of types of cookies.
Cake types and the mixing methods utilized to produce them.
Uses of and preparation methods of various creams, custards, puddings and related sauces.
Various types, uses, and methods of preparation of dessert sauces.
Preparation and evaluating the quality of a variety of dessert sauces.

Required Materials:
- Standard Culinary Arts Program Uniform and Supplies as stated in Culinary Arts Program Policies.

Grading System:

An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:

- Identify and practice locally enforced food code standards as regulated and inspected by SC DHEC.
- Define and integrate common vocabulary of baking terms.
- Outline the proper and effective use of baking/pastry utensils and equipment.
- Convert standardized recipes.
- Plan effectively for time management in the preparation of breads, pastries and desserts.
- Prepare and evaluate baked good items, using correct basic principles and techniques.

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BKP 119
Introduction to Baking and Pastry

Hours: Class 0, Lab 9, Credit 3
Pre-requisite: Prerequisite(s): BKP 112, MAT 032, RDG 032
Co-requisite: None
Course Description:

This course introduces baking fundamentals and classical baking techniques in a laboratory setting.

Course Topics:

1. Define and describe the steps in the production yeast-leavened breads.
2. Prepare a variety of yeast-leavened breads.
3. Evaluate the quality of yeast-leavened breads.
4. Define and describe the variety of cake types and the mixing methods utilized to produce them.
5. Prepare a variety of cakes.
6. Evaluate the quality of prepared cakes.
7. Demonstrate basic icing and decorating techniques.
8. Evaluate the quality of iced and decorated cakes.
9. Define and describe the variety of laminated dough.
10. Explain the process of lamination as it applies to dough.
11. Prepare a variety of laminated dough products.
12. Evaluate the quality of prepared laminated dough products.
13. Define and describe pâte choux, its uses, method of preparation, baking and finishing.
14. Prepare a variety of pâte choux products.
15. Evaluate the quality of prepared pâte choux products.
17. Prepare a variety of meringues.
18. Evaluate the quality of prepared meringues.
19. Define and describe creams, custards, puddings and related sauces.
20. Describe various types of uses of and preparation methods of various creams, custards, puddings and related sauces.
21. Prepare a variety of creams, custards, puddings and related sauces.
22. Evaluate the quality of prepared creams, custards, puddings and related sauces.
23. Define and describe the various types, uses, and methods of preparation of dessert sauces.
24. Prepare a variety of dessert sauces.
25. Evaluate the quality of prepared dessert sauces.
26. Discuss the application of mixes and other value added products.
27. Define and describe variety of fillings and toppings for pastries and baked goods.
28. Discuss methods of preparation and finishing techniques for various fillings and toppings.
29. Prepare a variety of filling and finishing for pastries and baked goods.
30. Demonstrate the presentation of baked goods and desserts.
31. Evaluate the quality of presentations of baked good and desserts.
32. Discuss nutritional concerns as they apply to baking.
33. Discuss recipe modification to create more nationally beneficial baked goods and desserts.

**Required Materials:**

- Standard Culinary Arts Program Uniform and Supplies as stated in Culinary Arts Program Policies.

**Grading System:**

*An overall grade of C or higher is required for transferability.*

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**Student Learning Outcomes:**

- Identify and practice locally enforced food code standards as regulated and inspected by SC DHEC.
- Define, describe, prepare and evaluate bakery and pastry items.
- Convert a
- Produce baking and pastry items using the correct time line and production techniques.
- Produce an individual plated dessert using the 4 parts of a plated dessert, buffet and a la minute plating techniques.

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**BUS 110**

**Entrepreneurship**

**Hours:** Class 3, Lab 0, Credit 3

**Pre-requisite:** ENG 032, MAT 032, and RDG 032 with a minimum grade of "C"

**Co-requisite:** None

**Course Description:**

This course is an introduction to the process of starting a small business, including forms of ownership and management.

**Course Topics:**

- Competitive business model
- Writing a business plan
- Forms of ownership
- Franchising
- Marketing
- Pricing
- Financial plans
- Financing
- Layout
- Staffing
- Legal issues

**Required Materials:**

- Computer with Internet access
- Word processing software (must be able to save Word format)
- Anti-virus software

**Grading System:**

*An overall grade of C or higher is required for transferability.*

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**Student Learning Outcomes:**

- Summarize the foundations of Entrepreneurship.
• Distinguish the strategic management process.
• Evaluate the sections of a successful business plan.
• Compare financial reports utilized in the operations of a small business.
• Evaluate important decisions associated with the marketing plan.
• Summarize the ethical, legal, and regulatory environment.

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BUS 121
Business Law I

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG-032 and MAT-032 and RDG-100
Co-requisite: None

Course Description:
This course is a study of legal procedures, law and society, classifications and systems of law, the tribunals administering justice and their actions, contracts, sales, transfer of titles, rights and duties of the parties, conditions, and warranties.

Course Topics:
• History and current legal process of the American Justice System.
• Torts, which torts affect businesses, and different types of remedies available.
• Elements needed to form a contract.

Required Materials:
• This is a custom textbook made just for SCC BUS 121. Please purchase in The Book Inn to insure you receive the proper materials.
• Online component access code sold with textbook in The Book Inn.
• Student should have access to a computer with Microsoft Office (Word) and Internet.

Grading System:
An overall grade of C or higher is required for transferability.
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
• Evaluate the history and current legal process used in the American Justice System.
• Demonstrate an understanding of torts, which torts effect businesses, and the different types of relief.
• Evaluate the elements of a contract.
• Demonstrate an understanding of breach of contract and the types of remedies available.
• Demonstrate an understanding of the basics of the criminal justice system.
• Evaluate the laws in place to protect consumers’ rights.
• Evaluate the dimensions of employer-employee relations including the agency relationship, federal and state laws, and the requirements of what an employer must provide their employees.
• Demonstrate an understanding of the different forms of business structures.
• Complete a semester long project addressing legal issues associated with starting a business.

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BUS 136
Compensation and Benefits Analysis

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: MGT 201
Co-requisite: None

Course Description:
This course offers a practical exploration of the systems, methods and procedures involved in establishing, administering and controlling compensation and benefits systems within the organization.

Course Topics:
• Basic compensation concepts and the context of compensation practices.
• Strategic and tactical compensation.
• Important compensation and benefit laws.
• Pay systems to include seniority, longevity, merit, and pay-for-performance.
• Performance appraisal systems.
Required Materials:
- Student should have access to a computer with Microsoft Office (Word) and Internet.

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Demonstrate an understanding of the basic compensation concepts and the context of compensation practice.
- Analyze the differences between strategic and tactical compensation.
- Analyze relevant laws and options available in designing proper compensation and benefit plans.
- Articulate an understanding of the following key employment laws:
  - Employment Retirement Income Security Act of 1974 (ERISA);
  - Consolidated Omnibus Budget Reconciliation Act of 1985 (COBRA);
  - Health Insurance Portability and Accountability Act of 1996 (HIPAA);
  - Pension Protection Act of 2006;
  - and Patient Protection and Affordable Care Act.
- Demonstrate an understanding of different types of pay systems that include seniority, longevity, merit, and pay-for-performance.
- Articulate the link between performance appraisal systems to the outcomes of the overall business' goals, employee empowerment, and various employee pay systems.

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BUS 210
Introduction to E-Commerce Business

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 032, MAT 032, RDG 032
Co-requisite: None
Course Description:
This course is the study of electronic commerce and the operations and applications from the business perspective. Emphasis is placed on business concepts and strategies and how they apply to the process of buying and selling goods and services online.

Course Topics:
- E-Business defined
- E-Business models
- Ethics, legal and social concerns
- Security
- Property rights
- Strategic E-Business Planning
- E-Business management
- E-Business Tools

Required Materials:
- Computer with Internet access
- Word processing software (must be able to save Word format)
- Anti-virus software

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Differentiate between E-Commerce and E-Business.
- Distinguish the E-Business strategic management process.
- Evaluate the tools utilized with E-Business.
• Summarize the issues associated with security, and property rights.
• Evaluate important ethical, legal, and social decisions associated with E-Business.
• Assess the opportunities presented with E-Business research.

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BUS 220
Business Ethics

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 032, MAT 032, and RDG 100
Co-requisite: None

Course Description:
This course includes an exploration of ethical issues arising in the context of doing business. Representative topics: employee rights and responsibilities, corporate regulations and rights, discrimination, truth in advertising, employee privacy, environmental exploitation and free enterprise.

Course Topics:
• Organizational perspective of business ethics
• Social responsibility
• Individual moral philosophies versus corporate culture
• Stakeholders’ role in business ethics
• Basic values of honesty, fairness, and integrity
• Common internal corporate ethical issues
• Benefits/limitations of an ethics audit
• Legislation concerning ethics in business
• Ethics compliance programs
• Global ethical issues

Required Materials:
• Online component access code (see instructor for details)

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
• Explain concepts of business ethics from an organizational perspective.
• Analyze common internal corporate ethical issues.
• Describe various legislation concerning ethics in business.
• Articulate stakeholders’ roles in a company's ethics.
• Analyze the voluntary and mandated boundaries of ethical conduct.
• Outline the process for developing an ethics compliance program.
• Examine various global ethical issues.

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BUS 268
Special Projects in Business

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ACC 102 and CPT 178 with a minimum grade of C.
Co-requisite: None

Course Description:
This course includes research, reporting, and special activities for successful employment in the business world.

Course Topics:
• Planning, organizing, leading, and controlling skills
• Target market
• Business plans
• Financing a start-up
• Ownership
• Owner's responsibilities of a start-up
BUS 275
Business Internship

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: BUS 110 with a minimum grade of "C", Enrolled in Entrepreneurship Certificate
Co-requisite: None
Course Description:
This course includes practical experience in an approved business setting in conjunction with regular class meetings. The class sessions will be devoted to discussing topics that will enhance the student's employability skills. It is designed to familiarize future entrepreneurs with the basics needed to start and operate a business.

Course Topics:
- Social Media, web design
- Financing, banker
- Business Plan Presentation with a banker
- SCC Incubator
- Chamber of Commerce
- Small Business Ownership (challenges/opportunities/networking)
- Insurance for a small business
- Real Estate (sources/rent vs. buy)
- Employee Benefits for small business employees
- Franchising

Required Materials:
- Computer with Internet access
- Word processing software (must be able to save Word format
- Anti-virus software.

Grading System:
An overall grade of C or higher is required for transferability.
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
• Differentiate between Social Media and Web Design.
• Distinguish the financing, insurance, real estate management processes.
• Summarize the options available with the SCC Incubator and the Chamber of Commerce.
• Evaluate the option of Franchising.
• Evaluate important employee benefits for a small business.
• Assess the opportunities presented with small business entrepreneurship.

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CGC 101
Introduction to Graphics Techniques

Hours: Class 2, Lab 3, Credit 3
Pre-requisite: ENG 032, MAT 032, RDG 100
Co-requisite: CGC 110
Course Description:
This course covers the processes of printed reproduction with an emphasis on offset printing. A variety of printing equipment and operating techniques are included.

Course Topics:
• Industry occupations and responsibilities
• Measuring in inches and points
• Typography
• Design principles
• Color theory
• Design process
• Basic layout skills

Required Materials:
• 1 USB jump drive

Grading System:
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
• Explain the roles, processes, occupations, responsibilities, and safety in the printing industry.
• Produce a digital mechanical to include measurements and typography.
• Describe the basic components, principles, and laws of art and copy preparation.
• Construct digital mechanics for one-color, spot-color, and process color print jobs.
• Demonstrate how to preflight and output digital files necessary for graphic reproduction.
• Identify basic pre-press equipment, tools and supplies.

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CGC 110
Electronic Publishing

Hours: Class 2, Lab 3, Credit 3
Pre-requisite: ENG 032, MAT 032, RDG 100
Co-requisite: CGC 101
Course Description:
This is an introductory course to the fundamentals of electronic publishing.

Course Topics:
• Type composition
• Type measurement in inches and points
• Design principles
• Color theory
• Electronic desktop publishing using Adobe InDesign
• Layout production

Required Materials:
• 1 USB jump drive
Grading System:
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Explain the basic principles and methods of type composition.
- Compose text copy.
- Produce a digital mechanical to include measurements and typography.
- Describe the basic components, principles, and laws of digital copy preparation.
- Construct one-color, spot-color, and process color print jobs.
- Construct graphic design layouts using Adobe InDesign layout software.

CGC 115
Digital Photography

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 032, MAT 032, RDG 100
Co-requisite: None

Course Description:
This course is the study of digital photography from digital cameras to the computer-based printer/digital media. Artistic, theoretical, and technical aspects will be considered. Topics include:
- Information on types and purchasing digital cameras; theory, mechanics, and the art of digital imagery.

Course Topics:
- Camera comparisons
- Image composition
- Correct exposure
- Image organization
- File formats
- Image adjustments
- Shooting modes
- Theme shooting

Required Materials:
- 1 USB jump drive
- Access to course's D2L online component.

Grading System:
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Differentiate types of digital cameras.
- Evaluate camera manuals and memory cards.
- Practice composition techniques.
- Manipulate storage media and images.
- Identify customized camera settings.
- Recognize exposure issues and file formats.
- Output digital images to various printing sources.
- Identify Adobe Photoshop software tools and applications.

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CHM 100
Introductory Chemistry

Hours: Class 3, Lab 3, Credit 4
Pre-requisite: (MAT 101 or MAT 152) and RDG 032
### CHM 105

**General, Organic and Biochemistry**

**Hours:** Class 3, Lab 3, Credit 4  
**Pre-requisite:** MAT 101, RDG 100, ENG 100, CHM 100 or CHM 110 or PHS 101 with a minimum grade of "C" in all courses.  
**Co-requisite:** None  
**Course Description:**  
This course is a study of the fundamental principles of chemistry, including atomic and molecular structure, common substances and reactions, introduction to organic chemistry and biochemistry.

**Course Topics:**
- The units and numbers of measurements
- Unit conversion
- The structure of the atom
- The periodic table
- Study of structure and properties of ionic compounds
- Physical states of matter
- Properties and concentration of solutions
- Energy, rate and equilibrium studies of physical and chemical reactions
- Acids, bases and buffers
- Structure, properties and IUPAC names of organic compounds
- Structure and functions of biological molecules

**Required Materials:**
- A scientific calculator (no cell phone calculator)
• Safety goggles for the laboratory
• Solutions manual (optional).

Grading System:
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
• Successfully complete any unit conversion required in general chemistry using equalities and the mathematical truth that any number can be multiplied by one (1).
• Utilize the periodic table to predict the relative sizes of atoms and strength of ionization energy, electron affinity and electronegativity.
• Explain the factors affecting the rate of a chemical reaction.
• Write the IUPAC names and draw the condensed structures of the organic families found in biological molecules.
• Describe the structural formula and functions of biological macromolecules like carbohydrates, proteins, lipids and nucleic acids.

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CHM 110
College Chemistry I

Hours: Class 3, Lab 3, Credit 4
Pre-requisite: ENG 032, MAT 110 with a minimum grade of “C.”
Co-requisite: None

Course Description:
This is the first course in a sequence which includes the following topics: atomic and molecular structure, nomenclature and equations, properties, reactions and states of matter, stoichiometry, gas laws, solutions, and equilibria.

Course Topics:
• Classification of matter
• The units and numbers of measurement
• Unit conversion
• Properties of elements including atoms, electrons and nuclei
• Radioactive properties of atoms, nuclear reactions
• Naming of binary compounds and acids
• Calculate molar masses, yield and percent yield of a chemical reaction
• Study of types of reactions
• Periodicity and structure of an atom
• Study of ionic bond and main group chemistry
• Study of covalent bonds and molecular structure
• Properties and behavior of gases

Required Materials:
• A scientific calculator (no cell phone calculator)
• Safety goggles for the laboratory
• Solutions manual (optional) for McMurry & Fay's Chemistry
• All lecture notes will be posted on the Science Department Website.
• Any additional resources (handouts) will be provided to the Student by the Instructor.

Grading System:
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
• Explain the significance of the representative group numbers and period numbers.
• Utilize the periodic table to predict the trends of atomic size, ionization energy, electron affinity and electronegativity.
• Describe the four fundamental differences between a chemical reaction and a nuclear reaction.
Successfully complete any unit conversion required in general chemistry using equalities and the mathematical truth that any number can be multiplied by one (1).

Perform stoichiometric analysis using properly balanced chemical equations.

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CHM 111

College Chemistry II

Hours: Class 3, Lab 3, Credit 4

Pre-requisite: CHM 110 with a grade of “C” or better.

Co-requisite: None

Course Description:

(For students continuing in chemistry) this course is a continuation of the study of atomic and molecular structure, nomenclature and equations, properties, reactions and states of matter, stoichiometry, gas laws, solutions, and equilibria. Other topics included are kinetics, thermodynamics, and electrochemistry.

Course Topics:

- Principles of Thermochemistry
- Study of enthalpy, entropy and free energy changes of physical and chemical reactions
- Solutions and their properties
- Calculations involving units of concentration and colligative properties
- Study of chemical kinetics and calculation of reaction rates
- Study of chemical equilibria and calculation of equilibrium concentrations and equilibrium constant
- Study of Le-Chatlier's principle
- Description and application of aqueous equilibria
- Principles of electrochemistry and calculation of standard reduction potentials
- Structure, properties and IUPAC names of organic compounds

Required Materials:

- A scientific calculator (no cell phone calculator)
- Safety goggles for the laboratory
- Solutions manual (optional) for McMurry & Fay's Chemistry
- All lecture notes will be posted on the Science Department Website.
- Any additional resources (handouts) will be provided to the Student by the Instructor.

Grading System:

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:

- Apply the Hess
- Perform calorimetry calculations using appropriate thermodynamic principle.
- Determine the components of a rate law of a chemical reaction given the appropriate experimental data.
- Describe the integrated rate law for a zero, first and second order reactions.
- Apply the rate law to determine the rate constant and half-life of the reactions.
- Write IUPAC systematic names for organic compounds.
- Draw the condensed structures for molecules in each of the organic functional group families.

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CHM 211

Organic Chemistry I

Hours: Class 3, Lab 3, Credit 4

Pre-requisite: CHM 105 or CHM 111 with a grade of “C” or better.

Co-requisite: None

Course Description:

This is the first in a sequence of courses that includes nomenclature, structure and properties, and reaction mechanisms of basic organic chemistry.

Course Topics:
CHM 212
Organic Chemistry II

Hours: Class 3, Lab 3, Credit 4
Pre-requisite: CHM 211 with a grade of "C" or better.
Co-requisite: None
Course Description:
This course is a continuation of basic organic chemistry. Topics include nomenclature, structure and properties, reaction mechanisms of basic organic chemistry, biochemistry, and spectroscopy.

Course Topics:
- Nomenclature, structure, and physical properties of carboxylic acids, their derivatives, amines, and aromatic compounds.
- Application and interpretation of IR, NMR, and MS spectroscopy.
- Organometallic, alpha-substitution, and carbonyl-associated reactions and their mechanisms
- Applying microscale lab techniques to chromatography, aldol condensation, and other chemical reactions.
- Applying microscale lab techniques to reactivity study and multi-step organic synthesis.

Required Materials:
- Calculator
- Safety goggles for the laboratory
- Solutions manual (optional)

Grading System:
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Determine the structural components or organic molecules using spectroscopic techniques.
- Describe names, structures, and properties of alcohols, ethers, aldehydes, and ketones.
• Describe names, structures, and properties of carboxylic acids and carboxylic acid derivatives.
• Summarize chemical reactions of carbonyl compounds.
• Describe names, structures, and properties of aliphatic amines, arylamines, and phenols.

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COL 101
College Orientation

Hours: Class 1, Lab 0, Credit 1
Pre-requisite: None
Co-requisite: None
Course Description:

This course may include selected topics such as career planning, study skills, stress management, tutoring, group guidance, and other subjects to facilitate student success. This course emphasizes group academic advising and registration activities.

Course Topics:
• Academic Advising
• Campus Resources
• Career Exploration
• Time Management
• Financial Literacy
• Study Skills

Required Materials:
• Notebook
• Pens
• Pencils
• Highlighters
• SCC Handbook

Grading System:
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
• Develop a course schedule using SCC Portal.
• Complete an e-mail assignment, with proper grammar, using the SCC e-mail account.
• Identify SCC campus resources using SCC Website.
• Discover career characteristics by filling out a questionnaire utilizing a library database.
• Examine a variety of financial sources available to fund a college education using information from the text, from class, and from the SCC Financial Aid Office webpage.

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COL 103
College Skills

Hours: Class 3, Lab 0, Credit 3
Pre-requisite:
Co-requisite: None
Course Description:

This course may include selected topics such as career planning, study skills, stress management, tutoring, group guidance, and other subjects to facilitate student success. This course emphasizes group and individual academic advising and registration activities.

Course Topics:
• Campus Resources
• Time Management
• Goal Setting
• Emotional Intelligence
• Academic Advising
• Critical Thinking
• Writing Skills
• Reading Skills
• Study Skills
• Note-Taking Skills
• Test-Taking Strategies
• Information Literacy
• Diversity
• Learning Styles
• Career Exploration
• Public Speaking
• Financial Literacy

Required Materials:
• Notebook
• Paper
• Pens
• Highlighters

Grading System:
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
• Construct an e-mail with a college e-mail account using proper grammar.
• Create a course schedule using SCC Portal to search for classes.
• Evaluate online information for its validity using library resources or the internet.
• Complete a project on career choice using career research assignments from the course.
• Identify SCC campus resources using SCC Website.

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CPT 101
Introduction to Computers

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 032, MAT 032, RDG 032.
Transfer credit not accepted if older than five (5) years.
Co-requisite: None

Course Description:
This course covers basic computer history, theory and applications, including word processing, spreadsheets, data bases, and the operating system.

Course Topics:
• The history of the PC
• Differences among laptop, tablet, desktop, and server computers
• General categories of software programs and applications
• How operating system software interacts with applications and hardware
• Digital security risks and cybercriminals
• Types of Internet and network attacks (malware, botnets and denial of service attacks)
• Preventing unauthorized computer access and use
• Network Basics
• Getting started and working with Windows 8
• File Management
• Cloud Computing and File Sharing
• Word, Excel, Access, PowerPoint, OneNote
• Using Email in a professional setting

Required Materials:
• Computer with Internet access, Internet Explorer 8.0 or higher or other current browser, Java, and anti-virus software.
• Skills Assessment Manager Office 2013 (SAM 2013) Assessment, Projects, and Training
• Microsoft Office 2013 Professional Edition (Word, Excel, Access, PowerPoint, OneNote)
• OneDrive account
• Access to the college's portal

Grading System:
An overall grade of C or higher is required for transferability.
A 90 – 100  
B 80 – 89  
C 70 – 79  
D 60 – 69  
F 0 – 59

Student Learning Outcomes:

- Demonstrate knowledge of basic computer concepts.
- Demonstrate basic features and uses of the Windows operating system.
- Create common business documents utilizing current Microsoft Office applications.
- Create and communicate information utilizing electronic collaboration tools.
- Evaluate and apply current technology to protect digital information.

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CPT 118
Professional Practices in Information Technology

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: CPT 101 with a minimum grade of “C.”
Co-requisite: None
Course Description:

This course emphasizes the interpersonal and technical skills required of entry-level IT professionals. Course content includes guidance on building a career toolkit, as well as topics such as projecting a professional image, job seeking skills, ethics, and providing good customer service.

Course Topics:

- Leadership and Team Building
- Research Job Careers
- Create a cover letter and resume
- Participate in a Mock Interview

Required Materials:

ISBN: 9780399144462

Grading System:

An overall grade of C or higher is required for transferability.

A 90 – 100  
B 80 – 89  
C 70 – 79  
D 60 – 69  
F 0 – 59

Student Learning Outcomes:

- Develop leadership skills through teamwork.
- Identify Careers in Information Technology.
- Describe the tools necessary for an IT Career.
- Give examples of professionalism.
- Practice interview skills in a mock-interview scenario.

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CPT 168
Programming Logic and Design

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: CPT 101 with a minimum grade of “C.”
Co-requisite: None
Course Description:

This course examines problem-solving techniques applied to program design. Topics include a variety of documentation techniques as means of solution presentation.

Course Topics:

- Using Flowchart techniques to learn logic
- Learning how to design a program
- Step by step programming techniques
- Design and developing simple programs
Design and developing complex programs

Required Materials:
- USB Flash Drive (min. capacity 8 Gb.)

Grading System:
An overall grade of C or higher is required for transferability.
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Describe computer programming and logic.
- Demonstrate the role of flowcharting in programming and logic.
- Use flowcharts in designing and creating simple programs.
- Distinguish between structured and unstructured program design.
- Design and create complex programs with calculations.
- Design and create programs using string manipulation.
- Solve problems using parallel arrays.
- Design and create programs using sequential files.

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CPT 172
Microcomputer Data Base

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: CPT 101 with a minimum grade of “C.”
Co-requisite: None

Course Description:
This course introduces microcomputer data base concepts, including generating reports from data base, creating, maintaining, and modifying data bases.

Course Topics:
- Tables
- Reports
- Forms
- Queries
- Macros
- Switchboards

Required Materials:
- Microsoft Access 2013
- Skills Assessment Manager Office 2013 (SAM 2013), Assessment, Projects, and Training
- One USB/jump disk or sky drive onto which all typed assignments will be saved

Grading System:
An overall grade of C or higher is required in this class to be applied toward the Administrative Office Technology degree.
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Create, edit, and format databases.
- Distinguish between various database objects and their purpose.
- Develop queries that provide business solutions.
- Design functional and visually appealing database forms.
- Design functional and visually appealing database reports.
- Design functional and visually appealing switchboards.

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CPT 174
Microcomputer Spreadsheets

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: CPT 101 with a minimum grade of “C.”
Co-requisite: None

Course Description:
This course introduces the use of spreadsheet software on the microcomputer. Topics include creating, editing, using formulas, using functions, and producing graphs.

Course Topics:
- Workbooks versus Worksheets
- Excel spreadsheet functions
- Building formulas
- Sorting and searching worksheets for specific data
- The use of Charts and Graphs in representing data
- Developing professional worksheets

Required Materials:
- Microsoft Excel 2013
- Skills Assessment Manager Office 2013 (SAM 2013) Assessment, Projects, and Training
- One USB/jump disk or sky drive onto which all typed assignments will be saved

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Create, edit, and format spreadsheets.
- Develop tables and add graphics to a worksheet.
- Manage workbooks and prepare them for the Web.
- Create and Modify Formulas.
- Sort fields and create lists of specific data.
- Perform formula auditing and validation data.
- Demonstrate complex problem solving.

CPT 178
Software Applications

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: CPT 101 with a minimum grade of “C.”
Co-requisite: None

Course Description:
Using electronic spreadsheet and relational database management software programs, this course focuses on complex microcomputer applications.

Course Topics:
- Database queries
- Database forms and reports
- Spreadsheet formulas and functions
- Spreadsheet charts and graphs
- Financial formulas and functions
- Multiple worksheets and workbooks
- Advanced functions such as Pivot Tables, What-if Analysis and macros
- Connect external data to a spreadsheet

Required Materials:
- Microsoft Excel 2013
- Skills Assessment Manager Office 2013 (SAM 2013) Assessment, Projects, and Training
- One USB/jump disk or sky drive onto which all typed assignments will be saved

Grading System:
An overall grade of C or higher is required for transferability.
CPT 179
Microcomputer Word Processing

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: CPT 101 with a minimum grade of "C."
Co-requisite: None

Course Description:
This course introduces microcomputer word processing. Topics include creating, editing, formatting, and printing documents.

Course Topics:
- Developing professional documents
- Using mail merge to combine documents
- Adding color and formatting to documents
- The use of tables in documents
- The use of graphics in documents
- The development and use of newsletters

Required Materials:
- SAM 2007 Assessment, Projects, and Training V6.0
- Computer with Internet access and anti-virus software.
- Word processing software (must be able to save Word format)
- USB/jump drive or the hard drive (C:) of your personal PC will be used to download data files from the publishers website or the assignment drop box. These files will be modified for most of your projects and lab assignments.

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Create, edit, and format documents and publications.
- Create and modify tables.
- Insert and manipulate graphics.
- Create and publish Web pages.
- Merge documents.
- Create professional newsletters.
- Create online forms.
- Save Word files to PDF format.

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CPT 185
Event-Driven Programming

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: CPT 168 with a minimum grade of "C."

Student Learning Outcomes:
- Maintain and query a relational database.
- Create forms and reports from a relational database.
- Enhance a workbook with charts and graphs.
- Manage multiple worksheets and workbooks.
- Demonstrate usage of advanced spreadsheet functions such as Pivot Tables, What-if Analysis and macros.
- Connect external data to a spreadsheet.

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Co-requisite: None

Course Description:
This course introduces the student to development of professional-looking, special purpose Windows applications using the graphical user interface of Windows.

Course Topics:
- Syntax of the programming language
- Designing a form
- Coding a form to be functional
- Design and developing simple programs
- Design and developing complex programs

Required Materials:
- USB Flash Drive (min. capacity 8 Gb.)

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Use Microsoft Visual Studio .NET for C# programming.
- Declare variables using C# Syntax.
- Create a C# project using decision making and Message boxes.
- Validate end-user data entry.
- Create a C# program with Menus and related functions.
- Create a C# program with loops and arrays.
- Design and develop programs to use files and databases.

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CPT 188
Mobile App Development

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: CPT 168 with a minimum grade of
Co-requisite: None

Course Description:
Students will learn to develop and test applications designed for mobile devices such as tablet computers and/or smartphones. Topics include building views, program code development, and application testing on a device simulator.

Course Topics:
- Learning how to work with Mac computers, iPad, on iOS
- Learning how to design a program
- Understanding the concept of the Objective-C language
- Designing and developing simple Apps
- Designing and developing complex Apps

Required Materials:
- USB Flash Drive (min. capacity 8 Gb.)

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Demonstrate a practical knowledge of MAC, iPhone, iPad, and iOS.
- Design and develop a simple App using only the Navigation Controllers and Tabs.
- Declare variables and user language commands.
- Design and develop simple Apps.
CPT 202
SQL Programming I

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: CPT 242 with a minimum grade of “C.”
Co-requisite: None
Course Description:
This course is an introduction to the writing of basic Structured Query Language (SQL) used in creating tables, inserting data, retrieving data, and manipulating data from database.

Course Topics:
- Learning how to work with SQL-Server
- Building a Database and Creating Tables
- Writing simple and advanced queries
- Creating Advanced Queries and Enhancing Table Design

Required Materials:
- USB Flash Drive (min. capacity 8 Gb.)
- Skills Assessment Manager Office 2013 (SAM 2013) – Assessment, Projects, and Training Microsoft

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Illustrate components of SQL-Server.
- Design and create databases and tables using queries.
- Write SQL Statements.
- Create simple and complex SELECT statements.
- Use AGGREGATE functions in a query.
- Design and create reports.
- Create Stored Procedures and Triggers.

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CPT 206
Advanced Event-Driven Programming

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: CPT 185 with a minimum grade of “C.”
Co-requisite: None
Course Description:
This course is a study of advanced techniques for programming with an event-driven language.

Course Topics:
- MS. Visual Studio (.NET) structure
- Design a form
- Coding the form to be functional
- Designing and developing simple programs
- Designing and developing complex programs

Required Materials:
- USB Flash Drive (min. capacity 8 Gb.)

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:

- Explain Microsoft Visual Studio .NET structure.
- Demonstrate the Visual Basic.NET forms, objects and properties.
- Move and code objects on forms.
- Process Text Files with Arrays and Lists
- Create a program with Menus and related functions.
- Create a program with loops and arrays.
- Design and develop programs to user files and databases.
- Create a multiple Document and Web-based Application.

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CPT 208
Special Topics in Computer Tech

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: CPT 209 with a minimum grade of
Co-requisite: None
Course Description:
Course Topics:
Required Materials:
Grading System:
Student Learning Outcomes:

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CPT 209
Comp Systems Management

Hours: Class 2, Lab 3, Credit 3
Pre-requisite: CPT 101 with a minimum grade of
Co-requisite: None
Course Description:
This course examines the methods and procedures used in maintaining microcomputer systems.
Topics include hardware and software installation configuration, operations, and troubleshooting.
Course Topics:

- Exploring various components of a computer system
- Building a personal computer system, configuring and upgrading hardware/software as needed
- Maintaining a personal computer system
- Installing and configure an operating system
- Using Windows troubleshooting tools
- Similarities/differences in the Android vs. Apple
- Participation in PCRx events to enhance customer service skills

Required Materials:
A Lab Connection access code is required to complete the labs for this course. This access code is
bundled with the textbook if purchased in the SCC Book Inn. To purchase the access code separately,
visit www.cengagebrain.com.

Grading System:
An overall grade of C or higher is required for transferability.
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:

- Define and compare operating systems.
- Install and maintain Windows operating systems.
- Set up a simple LAN able to share resources on a network.
- Differentiate operating systems used on mobile devices.
- Research and document computer components.
- Build a personal computer system.
CPT 242

Database

Hours: Class 3, Lab 0, Credit 3  
Pre-requisite: CPT 101 with a minimum grade of “C.”  
Co-requisite: None  
Course Description:

This course introduces database models and the fundamentals of database design. Topics include database structure, database processing, and application programs which access a database.

Course Topics:

• Creating a Database  
• Building a Database and Defining Tables  
• Maintaining and Querying a Database  
• Creating Forms and Reports  
• Creating Advanced Queries and Enhancing Table Design  
• Using Form Tools and Creating Custom Forms  
• Creating Custom Reports  
• Sharing, Integrating and Analyzing Data

Required Materials:

• USB Flash Drive (min. capacity 8 Gb.)  
• Skills Assessment Manager Office 2013 (SAM 2013) – Assessment, Projects, and Training Microsoft  

Grading System:

An overall grade of C or higher is required for transferability.

A 90 – 100  
B 80 – 89  
C 70 – 79  
D 60 – 69  
F 0 – 59

Student Learning Outcomes:

• Design and create a database  
• Design and create tables  
• Design and create queries  
• Design and create forms  
• Design and create reports  
• Explain the role of the database management system (DBMS) in a database integrity.

CPT 244

Data Structures

Hours: Class 3, Lab 0, Credit 3  
Pre-requisite: CPT 242 with a minimum grade of “C.”  
Co-requisite: None  
Course Description:

This course examines data structures widely used in programming. Topics include linked lists, stacks, queues, trees, and sorting and searching techniques.

Course Topics:

• Crystal Reports  
• Using Action  
• Using Macros  
• Using and Writing Visual Basic codes in the Database  
• Database Security and Split  
• Database Normalizations and Relationships

Required Materials:

• USB Flash Drive (min. capacity 8 Gb.)  
• Skills Assessment Manager Office 2013 (SAM 2013) – Assessment, Projects, and Training Microsoft  
• Office 2013 especially Access Database from the Prerequisite course
Grading System:

An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:

• Use Crystal Reports program to create custom reports.
• Use action queries and advanced table relationships.
• Automate database tasks with Macros.
• Write application codes in the database using Visual Basic.
• Manage and secure the database.
• Demonstrate competency in relational database and database design (normalization).
• Design and create tables in a blank database.

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CPT 264
Systems and Procedures

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: CPT 101 with a minimum grade of "C."
Co-requisite: None
Course Description:

This course covers the techniques of system analysis, design, development, and implementation.

Course Topics:

• Systems Analysis and Design
• Systems Development Life Cycle (SDLC)
• Designing an application system
• Economic feasibility and breakeven analysis
• Designing an application system

Required Materials:

• USB Flash Drive (min. capacity 8 Gb.)

Grading System:

An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:

• Describe the system development environment and Systems Development Life Cycle.
• Identify ways to manage the information systems projects.
• Define system planning and selection.
• Determine all the system requirements.
• Describe structuring system requirements: Process modeling.
• Describe structuring system requirements: Conceptual Data modeling (CDM).
• Summarize selecting the best alternative design strategy.
• Describe designing the human interface.
• Describe systems implementation and operation.

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CPT 270
Advanced Microcomputer Applications

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: CPT 172, CPT 174, CPT 179 with a minimum grade of "C."
Co-requisite: None
Course Description:

This course emphasizes the integration of popular microcomputer software packages using advanced concepts in microcomputer applications software.
Course Topics:
- Advanced features of office application software
- Interpreting the best methods to solving application problems
- Presenting expertise in integrating software to solve problems
- Adding visual elements to presentation

Required Materials:
- Computer with Internet access.
- Word processing software (must be able to save Word format)
- Anti-virus software

Grading System:
An overall grade of C or higher is required for transferability.
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Create and modify business projects using appropriate software tools.
- Demonstrate integration of at least three office application software.
- Develop and present a final project with advanced office application software.
- Develop meaningful business-related reports using a spreadsheet.
- Create business-related documents using a word-processing system.

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CPT 275
COMPUTER TECHNOLOGY SENIOR PROJECT

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: CPT 202 and CPT 206 with a minimum grade of C.
Co-requisite:
Course Description:
This course includes the design, development, testing, and implementation of an instructor approved project.

Course Topics:

Required Materials:

Grading System:

Student Learning Outcomes:

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CPT 282
Information Systems Security

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: CPT 101, IST 166
Co-requisite: None
Course Description:
This course is the study of the protection of information and equipment in computer systems. Topics include all aspects of system protection, including physical security, hardware, software and communications security. Addresses technical, legal and ethical issues.

Course Topics:
- The challenges of securing information.
- Information security and basic cryptography.
- Ways to protect information
- Various security threats

Required Materials:
A Lab Connection access code is required to complete the labs for this course. This access code is bundled with the textbook if purchased in the SCC Book Inn. To purchase the access code separately, visit www.cengagebrain.com.

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:

- Define security threats.
- Give examples of challenges encountered when securing information.
- Examine ways to protect information.
- Explain types of network vulnerabilities.
- List types of organizational security policies.

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CPT 290
MICROCOMPUTER MULTIMEDIA CONCEPTS AND APPLICATIONS

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: CGC 101, CPT 170 or CPT 101 with a minimum grade of "C."
Co-requisite: None

Course Description:
This course will cover introductory microcomputer multimedia concepts and applications. The course will utilize text, graphics, animation, sound, video, and various multimedia applications in the design, development, and creation of multimedia presentations.

Course Topics:
Required Materials:
Grading System:

Student Learning Outcomes:

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CRJ 101
Introduction to Criminal Justice

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: Pre-Requisites: ENG 100 AND RDG 100
Co-requisite: None

Course Description:
This course includes an overview of the functions and responsibilities of agencies involved in the administration of justice to include police organizations, court systems, correctional systems, and juvenile justice agencies.

Course Topics:

- Crime and Criminal Justice
- The Nature of Crime and Victimization
- Criminal Law: Substance and Procedure
- Police in Society: History and Organization
- The Police: Role and Function
- Issues in Policing: Professional, Social, Legal
- Courts, Prosecution, and the Defense
- Pretrial and Trial Procedures
- Punishment and Sentencing
- Community Sentences: Probation, Intermediate Sanctions, and Restorative Justice
- Corrections: History, Institutions, and Populations
- Prison Life: Living in and Leaving Prison
- Juvenile Justice in the Twenty First Century
- Crime and Justice in the New Millennium

Required Materials:
None

Grading System:
An overall grade of C or higher is required for transferability.
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:

- Describe the origins, perspectives, and methods of criminal justice as a social science.
- Describe the history, development, and functions of law enforcement.
- List the basic roles of the court system.
- Explain the court process.
- Describe the role of corrections and alternative sanctions.
- List the key components of the Juvenile Justice System.

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CUL 101
Principles of Food Production I

Hours: Class 0, Lab 9, Credit 3
Pre-requisite: MAT 032, RDG 032
Co-requisite: None

Course Description:

This is an introductory course in food preparation, including kitchen safety and sanitation. Emphasis is placed on the practical presentation of simple foods, terminology, and techniques of preparation of nutritious quality food.

Course Topics:

- Knife skills, hand tool and equipment operation, emphasizing proper safety techniques.
- Parts/components of a recipe.
- Standardized recipes
  - Procedure for writing a standardized recipe.
- Utensils, pots and pans and safe practices using stoves, mixers, ovens, etc.
- The sauté

Required Materials:

- Standard Culinary Arts Program Uniform and Supplies as stated in Culinary Arts Program Policies.

Grading System:

An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:

- Maintain sanitation and food safety in a kitchen.
- Define and integrate common vocabulary of cooking terms.
- Define and classify a variety of stocks, soups and sauces.
- Identify a variety of fruits, vegetables, starches, legumes and grains.
- Fabricate a variety of meat, poultry and seafood items.
- Prepare and critique foods using different cooking methods.

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CUL 102
Principles of Food Production II

Hours: Class 0, Lab 9, Credit 3
Pre-requisite: CUL 101
Co-requisite: None

Course Description:

This course is a study of the preparation of food categories such as sauces, salads, baked products, meats, poultry, vegetables, etc. Special attention is given to presentation and garnishing.

Course Topics:

Required Materials:
Grading System:
An overall grade of C or higher is required for transferability.
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Monitor locally enforced food code standards as regulated and inspected by SC DHEC.
- Classify and compare a variety of herbs, condiments and marinades.
- Compare a variety of salad dressings.
- Construct a variety of cold food platters.
- Identify and assemble diverse categories of sandwiches.
- Discuss prepared food according to its appearance, nutritive value, and flavor foods.

CUL 103
Nutrition
Hours: Class 2, Lab 3, Credit 3
Pre-requisite: MAT 032, RDG 032
Co-requisite: None
Course Description:
This course is a study of general nutritional needs of the life cycle, including carbohydrates, proteins, fats, vitamins, and minerals. Practical applications for the food service professional are emphasized.

Course Topics:
- USDA My Pyramid principles and food groups.
- The nutrient contributions of each food group.
- Nine areas where dietary guidelines make recommendations.
- Developing and evaluating recipes and menus using dietary guideline recommendations, food guides and food labels.
- Characteristics, functions and best sources of each of the major nutrients.
- Primary characteristics, functions and sources of vitamins, water and minerals.
- Process of human digestions.
- Determining energy needs based upon basal metabolic rate and exercise expenditure.
- Cooking techniques, storage principles and portion sizes for maximum retention of nutrients and effective weight management.
- Exchange groups.
- Common food allergies and determine appropriate substitutions, (i.e. Gluten, sugar lactose free)
- Contemporary nutritional issues (i.e. vegetarianism, heart, healthy menus and religious dietary laws).
- Emerging technologies (computerization) for nutrient analysis (i.e. Internet, recipe analysis software).
- Marketing of healthy menu options.
- Weight management and exercise and nutrition over the life cycle.

Required Materials:
- Standard Culinary Arts Program Uniform and Supplies as stated in Culinary Arts Program Policies.

Grading System:
An overall grade of C or higher is required for transferability.
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Identify the USDA My Pyramid principles.
- Develop and evaluate recipes and menus using dietary guidelines, recommendations, food guides and labels.
- Recognize common food allergens, altering menus to accommodate them.
- Use emerging technology to assist in menu altering to accommodate nutritional concerns.
Recognize emerging trends in nutrition.

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CUL 104
Introduction to Culinary Arts

Hours: Class 0, Lab 9, Credit 3
Pre-requisite: ENG 032, RDG 032
Co-requisite: None

Course Description:
This survey course introduces students to the world of culinary arts. Students will be exposed to culinary history, culinary organizations and branches of the culinary field that offer different opportunities in the profession.

Course Topics:
- Hospitality and the philosophy of the hospitality industry
- Growth and development of the hospitality and tourism industry
- Various cuisines and contributions of leading culinarians
- Professional organizations within the field
- Organization, structure and functional areas in various hospitality organizations
- Roles of the FDA, USDA, OSHA, State Fire Marshal, and DHEC
- Career opportunities through participation in field trips and guest speakers in class
- Industry trends as they relate to career opportunities and the future of the industry
- Industry trade periodicals
- Professional ethics practiced in the industry
- Career paths within the food service industry and steps to pursue them
- Process of management through effective communication skills
- Leadership styles and when each is most appropriate
- Supervisor's role in decision-making, problem solving and delegation of duties
- Role of job descriptions and specifications
- Mock interviews, resumes, job applications and cover letters
- Training methods
- Necessity of change and ways of implementing change with the least employee resistance
- Methods of conflict resolution and grievance procedures (union/non-union)
- Motivational techniques/problems.
- Procedures for attitudinal changes
- Dealing with stress in the workplace
- Time management and other organizational management techniques
- Material Safety Data Sheets (MSDS) and requirements in handling hazardous materials.
- Right-to-know laws
- Common causes of typical accidents and injuries in the foodservice industry
- Outlining a safety management program
- Appropriate emergency policies for kitchen and dining room injuries
- Appropriate types and use of fire extinguishers used in the foodservice area
- Laws and rules of the regulatory agencies governing sanitation and safety in foodservice operations
- Utensils, pots and pans,
- Safe practices using stoves, mixers, ovens, etc.
- Basic cooking methods
- Preparing meat, seafood, poultry, and variety meats to the proper doneness
- Evaluating the quality of prepared meats, seafood, poultry, and variety meats
- Preparing a variety of fruits, vegetables, starches, legumes and grains using the basic cooking methods

Required Materials:
- Standard Culinary Arts Program Uniform and Supplies as stated in Culinary Arts Program Policies.

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
• Outline the specific job opportunities within the food service industry.
• Define various kitchen positions in retail and institutional facilities.
• Describe common career progression.
• Identify supportive and connected industries, and potential related career paths (i.e. food broker or DHEC inspector).
• List a variety of related professional organizations.
• Outline the pertinent regulatory agencies and their roles.
• Compile an updated resume.

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CUL 115

Quantity Food Preparation

Hours: Class 0, Lab 15, Credit 5
Pre-requisite: CUL 102 and ENG 100, RDG 100
Co-requisite:
Course Description:

This course is a study of cooking methods and food cost controls for food items prepared in large quantities. Planning and production of meals are included in this course.

Course Topics:
• Sanitation rules set forth in DHEC guidelines
• Planning a variety of menus for differing styles of buffets
• Food placement for flow of service
• Costing out buffets for cost per person
• Prep work for prior to buffets
• Different styles of buffets and their correct use
• Flow of food through the prep and service to maintain correct and safe temperatures
• Flow of service between the front and back of the house
• Different ethnic ingredients, methods of cooking and equipment.
• Different ethnic cultures and its effect on the cuisine.

Required Materials:
• Standard Culinary Arts Program Uniform and Supplies as stated in Culinary Arts Program Policies.

Grading System:

An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
• Develop a menu and execute on a buffet.
• Lay out food for ease of flow in a buffet.
• Maintain correct temperatures of food during a buffet.
• Cost out menu for buffet and develop a cost per person.
• Run the flow of service between front and back of house during buffet.
• Produce foods for a buffet from different cultures.

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CUL 122

Advanced Culinary Skills

Hours: Class 0, Lab 6, Credit 2
Pre-requisite: CUL 115 with a minimum grade of “C” or permission of director.
Co-requisite:
Course Description:

This course applies advanced cooking techniques and theories in a production setting. Emphasis is placed on individual as well as team production. This course also includes menu development and execution, basic costing and buffet management.

Course Topics:

Required Materials:
Grading System:
Student Learning Outcomes:

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CUL 129

Storeroom and Purchasing

Hours: Class 0, Lab 9, Credit 3
Pre-requisite: ENG 032, MAT 032, RDG 032
Co-requisite:
Course Description:

This course combines purchasing theory with practical experience in the storeroom. Students develop skills in purchasing, developing requisitions, food transfers, inventory and organization of the storeroom.

Course Topics:
Required Materials:
Grading System:
Student Learning Outcomes:

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CUL 135

Introduction to Dining Room Service

Hours: Class 2, Lab 3, Credit 3
Pre-requisite: ENG 032, MAT 032, RDG 032
Co-requisite: None
Course Description:

This course introduces the student to the basics of the dining room to include buffet, banquet, tableside and a la carte styles of service.

Course Topics:

- General rules of table settings and service.
- American, English, French and Russian Service.
- Service methods such as banquets, buffets and catering and a la carte.
- Functions of dining service personnel.
- Training procedures for dining room staff.
- Procedures for processing guest checks.
- Guest service and customer relations, including handling of difficult situations and accommodations for the disabled.
- Inter-relationships and work flow between dining room and kitchen operations.
- Sales techniques for service personnel including menu knowledge and suggestive selling.

Required Materials:

- Standard Culinary Arts Program Uniform and Supplies as stated in Culinary Arts Program Policies.

Grading System:

An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:

- Set and serve a table using different cultural techniques.
- Set up and serve different methods of service other than table service.
- Describe the different functions and training of all service personnel.
- Set up a dining room to facilitate a natural flow and communication between the front and back of the house.
- Execute different styles of sales techniques.

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CUL 155
Sanitation

Hours: Class 2, Lab 3, Credit 3
Pre-requisite: RDG 032
Co-requisite: None

Course Description:
This course is a study of local, state, and national regulations governing sanitary food handling practices.

Course Topics:
- Microorganisms related to food spoilage and food-borne illnesses
- Symptoms common to food-borne illnesses
- Fundamentals of good personal hygiene.
- Good personal hygiene and health habits in a laboratory setting.
- Acceptable procedures when preparing potentially hazardous foods, including time/temperature principles.
- Major causes of food spoilage and spoilage indicators
- The flow of food through an establishment and list the various ways contamination may be prevented along the pathway.
- Proper receiving and storage of both raw and prepared foods.
- Sanitary and safety design and construction features of food production equipment and facilities.

Required Materials:
- Standard Culinary Arts Program Uniform and Supplies as stated in Culinary Arts Program Policies.

Grading System:
An overall grade of C or higher is required for transferability.
A 90 – 100  
B 80 – 89  
C 70 – 79  
D 60 – 69  
F 0 – 59

Student Learning Outcomes:
- Identify food borne illnesses and their symptoms.
- Explain the importance and procedures to follow for personal hygiene.
- Explain the flow of food in a non-commercial kitchen and the areas where contamination can occur, along with the proper food storage.
- Identify the cleaner, its proper use and storage.
- Identify all safety equipment, its uses and any forms that need to be displayed.

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CUL 235
Menu Planning

Hours: Class 2, Lab 3, Credit 3
Pre-requisite: CUL 102 with a minimum grade of C.

Course Description:
This course is a study of the principles of menu planning and design with application of basic nutrition, organization plans, and recordkeeping techniques.

Course Topics:
Required Materials:
Grading System:
Student Learning Outcomes:

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CUL 236
Restaurant Capstone

Hours: Class 1, Lab 6, Credit 3
Pre-requisite: Permission of Program Director
Co-requisite:
Course Description:
This course will include capstone competencies for culinary arts students. Students will manage and work multiple stations, develop food specials, cost menus, take inventories, produce a menu analysis and expedite food from the kitchen to the dining room.

Course Topics:
Required Materials:
Grading System:
Student Learning Outcomes:

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CUL 299
SPECIAL TOPICS IN CULINARY STUDIES
Hours: Class 1, Lab 6, Credit 3
Pre-requisite: CUL 102 with a minimum grade of “C”
Co-requisite:
Course Description:
This course will focus on a special topics in culinary or baking pastry arts such as regional world cuisines, food history, or current trends.

Course Topics:
Required Materials:
Grading System:
Student Learning Outcomes:

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CWE 112
COOPERATIVE WORK EXPERIENCE I
Hours: Class 0, Lab 10, Credit 2
Pre-requisite: All CWE courses require permission of instructor or department chair.
Co-requisite:
Course Description:
This course includes cooperative work experience in an approved setting.

Course Topics:
Required Materials:
Grading System:
Student Learning Outcomes:

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CWE 113
COOPERATIVE WORK EXPERIENCE I
Hours: Class 0, Lab 15, Credit 3
Pre-requisite: All CWE courses require permission of instructor or department chair.
Co-requisite:
Course Description:
This course includes cooperative work experience in an approved setting.

Course Topics:
Required Materials:
Grading System:
Student Learning Outcomes:

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CWE 114
COOPERATIVE WORK EXPERIENCE I
Hours: Class 0, Lab 20, Credit 4
Pre-requisite: All CWE courses require permission of instructor or department chair.
Co-requisite:
Course Description:
This course includes cooperative work experience in an approved setting.
Course Topics:
Required Materials:
Grading System:
Student Learning Outcomes:

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CWE 123
Cooperative Work Experience II

Hours: Class 0, Lab 15, Credit 3
Pre-requisite: All CWE courses require permission of instructor or department chair.
Co-requisite:
Course Description:
This course includes cooperative work experience in an approved setting.

Course Topics:
• The role of an administrative professional
• Office politics and interpersonal skills
• Self-assessment of professional goals
• Confidence in the workplace and personal abilities
• Gaining experience in administrative responsibilities

Required Materials:
• Computer with Internet access
• Word processing software (must be able to save Word format)
• Anti-virus software

Grading System:
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
• Perform general office duties independently as assigned by the preceptor/ supervisor with minimal supervision.
• Interpret policies and procedures.
• Speak clearly and articulately using proper grammar and vocabulary.
• Project a professional image in accordance with the assigned work environment.
• Complete a 240 hour cooperative work experience in an approved administrative role.

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CWE 124
COOPERATIVE WORK EXPERIENCE II

Hours: Class 0, Lab 20, Credit 4
Pre-requisite: All CWE courses require permission of instructor or department chair.
Co-requisite:
Course Description:
This course includes cooperative work experience in an approved setting.

Course Topics:
Required Materials:
Grading System:
Student Learning Outcomes:

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CWE 131
Cooperative Work Experience III

Hours: Class 0, Lab 5, Credit 1
Pre-requisite: All CWE courses require permission of instructor or department chair.
Co-requisite:
Course Description:
This course includes cooperative work experience in an approved setting.
Course Topics:
- The role of an administrative professional
- Office politics and interpersonal skills
- Self-assessment of professional goals
- Confidence in the workplace and personal abilities
- Gaining experience in administrative responsibilities.

Required Materials:
- Computer with Internet access
- Word processing software (must be able to save Word format)
- Anti-virus software

Grading System:
A 90 – 100  
B 80 – 89  
C 70 – 79  
D 60 – 69  
F 0 – 59

Student Learning Outcomes:
- Perform general office duties independently as assigned by the preceptor/supervisor with minimal supervision.
- Interpret policies and procedures.
- Speak clearly and articulately using proper grammar and vocabulary.
- Project a professional image in accordance with the assigned work environment.
- Complete an 80-hour cooperative work experience in an approved administrative role.

CWE 132 
COOPERATIVE WORK EXPERIENCE III

Hours: Class 0, Lab 10, Credit 2
Pre-requisite: All CWE courses require permission of instructor or department chair.
Co-requisite:
Course Description:
This course includes cooperative work experience in an approved setting.

Course Topics:
Required Materials:
Grading System:
Student Learning Outcomes:

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CWE 134 
COOPERATIVE WORK EXPERIENCE III

Hours: Class 0, Lab 20, Credit 4
Pre-requisite: All CWE courses require permission of instructor or department chair.
Co-requisite:
Course Description:
This course includes cooperative work experience in an approved setting.

Course Topics:
Required Materials:
Grading System:
Student Learning Outcomes:

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CWE 214 
COOPERATIVE WORK EXPERIENCE IV

Hours: Class 0, Lab 20, Credit 4
Pre-requisite: All CWE courses require permission of instructor or department chair.
Co-requisite:
Course Description:
This course includes cooperative work experience in an approved setting.
CWE 224
COOPERATIVE WORK EXPERIENCE V

Hours: Class 0, Lab 20, Credit 4
Pre-requisite: All CWE courses require permission of instructor or department chair.
Co-requisite: None
Course Description:
This course includes cooperative work experience in an approved setting.

Course Topics:
Required Materials: Computer with Internet access
Grading System: An overall grade of C or higher is required for transferability.
Student Learning Outcomes:

CWE 232
COOPERATIVE WORK EXPERIENCE VI

Hours: Class 0, Lab 10, Credit 2
Pre-requisite: All CWE courses require permission of instructor or department chair.
Co-requisite: None
Course Description:
This course includes cooperative work experience in an approved setting.

Course Topics:
Required Materials: Computer with Internet access
Grading System: An overall grade of C or higher is required for transferability.
Student Learning Outcomes:

DAT 110
Dental Terminology

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 032 and RDG 032 or equivalent.
Co-requisite: None
Course Description:
This course provides a study of dental terminology as it relates to procedures and techniques used in dental assisting.

Course Topics:
- Formation of Teeth
- Dental Professionals and Facility Setups
- Infection Control
- Emergency Care
- Prevention and Examination
- Pharmacology and Pain Management
- Tooth Restorations
- Cosmetic Dentistry

Required Materials:
- Computer with Internet access
- Word processing software (must be able to save Word format)
- Anti-virus software.

Grading System:
An overall grade of C or higher is required for transferability.

A 94 – 100
B 85 – 93
Student Learning Outcomes:

- Recognize terms used in a dental practice, associating the need of breaking down each term into separate parts for combining into difficult words.
- List and locate terms related to the anatomy and oral structures.
- Associate terms related to the formation of teeth.
- Define words related to dental professionals and facility setups.
- List and describe use of terms related to infection control.
- Recognize terms related to emergency care.
- Restate terms related to prevention and examination.
- List and explain terms related to pharmacology and pain management.
- Describe term related to tooth restorations.
- Associate terms related to cosmetic dentistry.

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**DAT 113**

**Dental Materials**

Hours: Class 3, Lab 3, Credit 4

Pre-requisite: DAT 110 and admission into the Expanded Duty Dental Assisting Program.

Co-requisite: None

Course Description:

This course is a study of physical and chemical properties of matter and identification, characteristics, and manipulation of dental materials.

Course Topics:

- Hazardous Materials in the Dental Office
- Various Restoration Placement
- Restorative and Esthetic Material
- Properties of Liners, Varnishes, Bases, and Dentin
- Dental Impression Materials and Luting Agents
- Properties of Dental Impression
- Dental Laboratory Equipment and Wax Materials

Required Materials:

- Safety Glasses
- Utility Gloves
- Lab Jacket (Disposable)

Grading System:

An overall grade of C or higher is required for transferability.

A 94 – 100
B 85 – 93
C 80 – 84
D 75 – 79
F 0 – 74

Student Learning Outcomes:

- Discuss management of hazardous materials in the dental office.
- Identify the properties of amalgam and composite materials and various restoration placements.
- Identify the properties of dental materials used for restorative and esthetic material.
- Identify the properties of liners, varnishes, bases, and dentin.
- Identify the properties of dental impression material and luting agents.
- Demonstrate and describe differences of dental impression materials and luting agents.
- Identify the properties of dental impression materials.
- Demonstrate the correct mixing techniques for a dental impression.
- Identify characteristics of dental laboratory equipment and wax materials as used in dentistry.

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**DAT 115**

**Ethics and Professionalism**

Hours: Class 0, Lab 3, Credit 1

Pre-requisite: DAT 110 and admission into the Expanded Duty Dental Assisting Program.
Co-requisite: None
Course Description:
This course introduces a cursory history of dental assisting, professional associations, scope of service in dentistry, and ethical, legal and professional considerations. The state dental practice act is reviewed.

Course Topics:
- Historical Events in Dentistry
- The Professional Assistant
- Dental Health Care Team Members
- Ethical Aspects of Dentistry
- Dentistry and the Law
- South Carolina Dental Practice Act

Required Materials:
- None

Grading System:
An overall grade of C or higher is required for transferability.
A 94 – 100
B 85 – 93
C 80 – 84
D 75 – 79
F 0 – 74

Student Learning Outcomes:
- Identify historical events in dentistry.
- Identify the role of the professional dental assistant.
- Identify the roles, responsibilities, and the education requirement of the dental health care team members.
- Discuss the ethical aspects of dentistry.
- Discuss dentistry and the law.
- Explain the provisions in the South Carolina Dental Practice Act referring to the dental assistant and utilization.

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DAT 118
Dental Morphology

Hours: Class 2, Lab 0, Credit 2
Pre-requisite: DAT 110 and admission into the Expanded Duty Dental Assisting Program.
Co-requisite: None
Course Description:
This course emphasizes the development, eruption, and individual characteristics of each tooth and surrounding structures.

Course Topics:
- Tooth Morphology
- Embryology and Histology
- Permanent Dentition and Primary Dentition

Required Materials:
- None

Grading System:
An overall grade of C or higher is required for transferability.
A 94 – 100
B 85 – 93
C 80 – 84
D 75 – 79
F 0 – 74

Student Learning Outcomes:
- Identify and describe parts of the mouth, surfaces, teeth, and tissues.
- Explain general tooth morphology.
- Describe dental embryology and histology.
- Demonstrate knowledge of permanent dentition.
- Describe the eruption sequence of primary and permanent dentition.
- Identify the teeth using the Universal Numbering System, Palmer's Notation and International Standards Organization.
- Identify the surfaces of the teeth including line and point angles.
- Explain different types of occlusion.

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DAT 121

Dental Health Education

Hours: Class 2, Lab 0, Credit 2
Pre-requisite: DAT 110 and admission into the Expanded Duty Dental Assisting Program.
Co-requisite: None
Course Description:

This course defines the responsibilities of the dental assistant in individual and community dental health education with emphasis on the etiology of dental disease, methods for prevention, and principles of nutrition in relationship to oral health and preventive dentistry.

Course Topics:
- Nutrition
- Ergonomics
- Dental Caries
- Periodontal Disease
- Preventive Dentistry

Required Materials:
- None

Grading System:
An overall grade of C or higher is required for transferability.

A 94 – 100
B 85 – 93
C 80 – 84
D 75 – 79
F 0 – 74

Student Learning Outcomes:
- Describe the importance Nutrition and its relationship to dental health and oral conditions in dentistry.
- Describe and demonstrate the importance of ergonomics and the goal of the dental health team.
- Recognize dental caries.
- Recognize periodontal disease.
- Discuss preventive dentistry.

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DAT 122

Dental Office Management

Hours: Class 2, Lab 0, Credit 2
Pre-requisite: Successful completion of prior program requirements.
Co-requisite: None
Course Description:

This course provides a study of the business aspect of a dental office.

Course Topics:
- Communication in the Dental Office
- Business Operating Systems
- Financial Management in the Dental Office

Required Materials:
- None

Grading System:
An overall grade of C or higher is required for transferability.

A 94 – 100
B 85 – 93
Student Learning Outcomes:

- Demonstrate professional communication skills with patients (verbal and nonverbal).
- Discuss and identify types of written communications that originate from a dental practice.
- Demonstrate and describe business operating systems used within a dental office.
- Discuss the role of the assistant in making financial arrangements and when such arrangements should be made.
- Describe the function of computerized practice management systems and manual bookkeeping systems.
- Describe account procedures.
- Identify banking responsibilities associated with a dental practice.

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DAT 123

Oral Medicine/Oral Biology

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: Successful completion of prior program requirements.
Co-requisite: None
Course Description:

This course presents a basic study of oral pathology, pharmacology, nutrition, and common emergencies as related to the role of the dental assistant.

Course Topics:

- Compromised Patient
- Drugs Commonly Used in Dentistry
- Medical Emergency
- Vital Signs Principles
- Pain Control and Anesthetic Techniques
- Diseases of the Teeth, Dental Pulp, and Oral Tissues

Required Materials:

- None

Grading System:

An overall grade of C or higher is required for transferability.

A 94 – 100
B 85 – 93
C 80 – 84
D 75 – 79
F 0 – 74

Student Learning Outcomes:

- Identify the medically and physically compromised patient.
- Use pharmacology references.
- Describe drugs commonly used in dentistry.
- Identify major medical conditions that can affect patient treatment and how to assist during a medical emergency.
- Define and recognize vital signs principles.
- Identify pain control and anesthetic techniques in dentistry.
- Identify possible diseases of the teeth, dental pulp, oral tissues, and their effects on dental health.

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DAT 124

Expanded Functions/Specialties

Hours: Class 0, Lab 3, Credit 1
Pre-requisite: Successful completion of prior program requirements.
Co-requisite: None
Course Description:

This course offers practice in performing the expanded clinical procedures designated by the South Carolina state board of dentistry for dental assistants.
Course Topics:
- Fixed Prosthodontics
- Provisional Coverage
- Dental Implants
- Periodontics
- Oral Maxillofacial Surgery
- Removable Prosthodontics
- Pediatric Dentistry
- Endodontics
- Orthodontics

Required Materials:
- Student Handbook
- Safety Glasses
- Lab Coat
- Clinical Uniform

Grading System:
An overall grade of C or higher is required for transferability.

A 94 – 100
B 85 – 93
C 80 – 84
D 75 – 79
F 0 – 74

Student Learning Outcomes:

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DAT 127
Dental Radiography

Hours: Class 3, Lab 3, Credit 4
Pre-requisite: Successful completion of prior program requirements.
Co-requisite: None
Course Description:
This course provides the fundamental background and theory for the safe and effective use of x-radiation in dentistry. It encompasses the history of x-rays, production and uses of radiation, radiographic film, exposure factors, interpretation of radiographs and radiation hygiene.

Course Topics:
- Radiographic equipment and Radiologic safety
- Processing of Dental Radiographs
- Radiographic Infection Control Measures
- Intraoral Radiographic Techniques
- Extraoral Radiographic Techniques
- Digital Radiographic Techniques

Required Materials:
- X-ray badge, X-ray film
- PPE
- 1 inch binder notebook

Grading System:
An overall grade of C or higher is required for transferability.

A 94 – 100
B 85 – 93
C 80 – 84
D 75 – 79
F 0 – 74

Student Learning Outcomes:
- Explain the foundation of radiography, radiographic equipment and radiologic safety.
- Explain the purpose and role of dental film.
- Interpret processed dental film.
- Process dental film and dental radiographs.
Define legal issues and quality assurance as they relate to dental radiography.
Apply radiographic infection control measures.
Define intraoral, extraoral, and digital radiography.
Demonstrate intraoral, extraoral, and digital radiographic techniques.

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**DAT 154**

**Clinical Procedures I**

**Hours:** Class 2, Lab 6, Credit 4  
**Pre-requisite:** DAT 110 and admission into the Expanded Duty Dental Assisting Program.  
**Co-requisite:** None  
**Course Description:**

This course includes preparation to assist a dentist efficiently in four-handed dentistry. Emphasis is on the names and functions of all dental instruments, the principles involved in their use, and the assistants' role in dental instrumentation.

**Course Topics:**  
- Delivering of Dental Care  
- Dental Hand Instruments and Dental Handpieces and Accessories  
- Patient Record  
- Charting  
- Principles of Microbiology  
- Infection Control in the Dental Office  
- Instrument Processing and Sterilization  
- Moisture Control  

**Required Materials:**  
- Clinical uniform  
- Lab jackets  
- Safety glasses/shield  
- Utility gloves  
- Notebook (3 ring binder, 1 inch)

**Grading System:**

An overall grade of C or higher is required for transferability.

A 94 – 100  
B 85 – 93  
C 80 – 84  
D 75 – 79  
F 0 – 74

**Student Learning Outcomes:**  
- Describe the dental office and the delivering of dental care.  
- Demonstrate preparation skills for patient care using dental hand instruments, handpieces and accessories.  
- Demonstrate competency in documenting and interpreting the patient record.  
- Demonstrate skills in charting.  
- Demonstrate competency of the facts and principles of microbiology,  
- Discuss disease transmission and infection control in the dental office.  
- Demonstrate principles and techniques of disinfection and instrument processing and sterilization in a dental office.  
- Discuss moisture control.

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**DAT 164**

**Clinical Procedures II**

**Hours:** Class 0, Lab 12, Credit 4  
**Pre-requisite:** Successful completion of prior program requirements.  
**Co-requisite:** None  
**Course Description:**

This course introduces the instruments and chairside procedures of the dental specialties.

**Course Topics:**  
- Chairside Assisting
Dental Laboratory Procedures
Sterilization Equipment
Polishing Restorations and Supragingival Tooth Structure
Coronal Polishing and Fluoride
Dental Sealants
Dental Assisting National Board Certification Exam

Required Materials:
- One-inch three ring notebook
- Safety glasses
- Clinical uniform
- Disposable lab jacket

Grading System:
An overall grade of C or higher is required for transferability.

A 94 – 100
B 85 – 93
C 80 – 84
D 75 – 79
F 0 – 74

Student Learning Outcomes:
- Develop skills in chairside assisting and maintaining the operatory.
- Develop skills in selected dental laboratory procedures.
- Demonstrate proper sterilization techniques and maintenance of sterilization equipment.
- Develop skills in polishing restorations and supragingival tooth structure.
- Describe the purpose for coronal polishing perform and discuss fluoride.
- Describe the purpose of dental sealants.
- Prepare to take the Dental Assisting National Board Certification Exam.

DAT 177
Dental Office Experience

Hours: Class 0, Lab 21, Credit 7
Pre-requisite: Successful completion of prior program requirements.
Co-requisite: None
Course Description:
This course consists of practice in the dental office or clinic with rotation of assignments to encompass experiences in office management and clinical experience in all areas of dentistry.

Course Topics:
- Patient Management
- Chairside Assisting and Maintaining the Operatory
- Exposing, Processing, Mounting, Filing, and Storing Dental Radiographs
- Dental Laboratory Procedures
- Sterilization Techniques
- Oral Health Education
- Office Management Duties

Required Materials:
- Notebook
- Handbook

Grading System:
An overall grade of C or higher is required for transferability.

A 94 – 100
B 85 – 93
C 80 – 84
D 75 – 79
F 0 – 74

Student Learning Outcomes:
- Demonstrate patient management skills.
• Demonstrate skills in chairside assisting and maintaining the operatory.
• Demonstrate skills in exposing, processing, mounting, filing, and storing dental radiographs.
• Demonstrate skills in selected dental laboratory procedures.
• Demonstrate proper sterilization techniques and maintenance of sterilization equipment.
• Participate in oral health education.
• Participate in office management duties.

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DHM 105
Diesel Engines I

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: None
Co-requisite: None
Course Description:
This course covers the basic study of diesel engine design and operating principles.

Course Topics:
• Diesel Engine Design
• Diesel Engine Operating Principles
• Diesel and Biodiesel
• Diesel Engine Emissions Components
• Diesel Engine Air Induction Systems

Required Materials:
• Safety Glasses

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
• Explain how a diesel engine works.
• Describe the difference between direct and indirect injection in diesel engines.
• Identify the parts found in a typical diesel engine.
• Compare and contrast the advantages and disadvantages of a diesel engine.
• Explain the need for and how the glow plug system works.
• Research the need for emission control systems as they relate to diesel engines.

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ECD 101
Introduction to Early Childhood

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: Admission into the Early Care & Education Program or a TEACH Scholarship.
Co-requisite: None
Course Description:
This course is an overview of growth and development, developmentally appropriate curriculum, positive guidance techniques, regulations, health, safety, and nutrition standards in early care and education. Professionalism, family/cultural values and practical applications based on historical and theoretical models in early care and education are highlighted in this course.

Course Topics:
• The Early Childhood Professional
• Safety
• Physical Development
• Cognitive Development
• Language Development
• Emergent Literacy
• Social and Emotional Development
• Foundation of Guidance
• Guiding Children
• Diversity
• The Learning Environment
• Curriculum
• Children with Differing Needs
• The Family

Required Materials:
• 3 Ring Binder, Tab Dividers, Miscellaneous supplies for lesson plans.

Grading System:
An overall grade of C or higher is required for transferability.

A 94 – 100
B 85 – 93
C 75 – 84
D 70 – 74
F 0 – 69

Student Learning Outcomes:
• Demonstrate knowledge to coordinate space, time, and materials to plan developmentally appropriate experiences that encourage children's play, exploration, and learning. (NAEYC 1a, 1c)
• Demonstrate an understanding of the principles of child growth and development to serve as a foundation for working effectively with young children. (NAEYC 1a)
• Demonstrate knowledge to provide a safe environment for young children and promote the development of safe practices. (NAEYC 1c)
• Demonstrate knowledge to provide a healthy environment and promote the development of good health habits. (NAEYC 1c)
• Demonstrate knowledge of policies and practices needed to meet the nutritional needs of young children. (NAEYC 1a, 1c)
• Demonstrate knowledge of strategies and techniques for providing a supportive environment in which children can develop self-control and interact positively with others. (NAEYC 1c)
• Demonstrate knowledge about strategies for establishing and maintaining positive and productive relationships with families. (NAEYC 2a)
• Demonstrate knowledge about the identification of possible special needs and making program adaptations to provide an appropriate program for all children. (NAEYC 1b, 3d)
• Demonstrate knowledge to advocate for quality care in early childhood programs and take advantage of opportunities to improve competence, both for personal and professional growth and for the benefit of families and children. (NAEYC 5a, 5c, 5e)
• Demonstrate knowledge of ways to utilize community resources to assist children with diverse abilities, their families, and early care and education professionals. (NAEYC 1b, 2a, 2b, 2c)
• Demonstrate an awareness of the importance of and techniques for reflecting diversity in programs for young children. (NAEYC 1b, 2a, 4a, 4b)
• Demonstrate knowledge of national, state and local standards, policies, regulations, and laws that are applicable to early care and education programs. (NAEYC 1c, 5b).

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ECD 102
Growth and Development I

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 032, MAT 032, and RDG 032 with a "C" or better; Criminal background investigation (CBI), health form, student portfolio information
Co-requisite:
Course Description:
This course is an extensive study of philosophies and theories of growth and development of infants/toddlers. Focus is on "total" development of the child, with emphasis on physical, social, emotional, cognitive, and nutritional areas. Developmental tasks and appropriate activities are explored in the course.

Course Topics:
• Learning about Children
• Families Today
• Preparing for Parenting
• Pregnancy
• Prenatal Care
• Childbirth
• The Newborn
• Physical Development of the Infant and Toddler
• Intellectual development of the Infant and Toddler  
• Social-Emotional Development of the Infant and Toddler  
• Providing for the Infant and Toddler’s Developmental Needs

Required Materials:
None

Grading System:
An overall grade of C or higher is required for transferability.

A 94 – 100
B 85 – 93
C 75 – 84
D 70 – 74
F 0 – 69

Student Learning Outcomes:
• Describe typical physical, social, emotional, language, and cognitive development of a child from conception to age 2. (NAEYC 1a, 1b, 4c)
• Identify the influence of heredity and environment on the development of the child from conception to age 2. (NAEYC 1a, 1b)
• Observe and record information that reflects interrelationships of the physical, social emotional, language, and cognitive domains of development of a child from 4 months to age 2. (NAEYC 3a, 3b, 3c, 3d)
• Plan and implement age and individually appropriate activities for a child from 4 months to age 2, based on knowledge of developmental milestones. (NAEYC 1a, 1c, 4b, 4c, 4d)
• Describe the importance of supportive adult relationships for children from birth through age 2. (NAEYC 1b, 2a, 2b, 2c)
• Identify the South Carolina Early Learning Standard to support created lessons/activities for a child from 4 months to age 2. (NAEYC 4b, 4c, 4d)

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ECD 105
Guidance-Classroom Management

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 032 and RDG 032 with a “C” or better.
Co-requisite: None

Course Description:
This course is an overview of developmentally appropriate, effective guidance and classroom management techniques for the teacher of young children. A positive pro-active approach is stressed in the course.

Course Topics:
• Preparing for Positive Guidance
• Why Guidance Matters
• Historical Perspectives and Guidance Theories
• Understanding Children’s Behaviors
• Valuing the Uniqueness of Each Child
• How to Observe Children
• Understanding Children with Ability Differences
• Preventing Behavior Problems
• Building Relationships through Positive Communication
• Fundamental Causes of Positive and Negative Behavior
• Effective Guidance Interventions
• Child Abuse

Required Materials:
• Computer with Internet access
• Word processing software (must be able to save Word format)
• Anti-virus software

Grading System:
An overall grade of C or higher is required for transferability.

A 94 – 100
B 85 – 93
C 75 – 84
Student Learning Outcomes:

- Describe how the principles of child growth and development serve as a foundation for working effectively in guiding and shaping behaviors of young children. (NAEYC 1a, 1b)
- Explain and determine the use of developmentally effective classroom management systems. (NAEYC 4b)
- Determine developmentally effective discipline/guidance techniques. (NAEYC 4b, 4c)
- Plan strategies and techniques for providing a supportive environment in which children develop self-control and interact positively with others. (NAEYC 4b)
- Reflect on observations of children in various situations and identify influences on behavior. (NAEYC 1b).

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ECD 107
Exceptional Child

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: Admission into the Early Care & Education Program, and ENG 032 and RDG 032 with a "C" or better.
Co-requisite:
Course Description:

This course includes an overview of special needs children and their families. Emphasis is on prevalence of disorders, treatment modalities, community resources serving exceptional children, the teacher’s role in mainstreaming and early identification, and on federal legislation affecting exceptional children.

Course Topics:

- Early Childhood Development and Intervention
- Characteristics of Developmental disabilities and at risk-conditions
- Federal legislation for children with special needs
- Screening and diagnostic instruments used with young children with developmental disabilities
- Inclusive Early Childhood Education
- Resources and Practice for Inclusive Early Childhood Education

Required Materials:

- Computer with Internet access
- Word processing software (must be able to save Word format)
- Anti-virus software

Grading System:

An overall grade of C or higher is required for transferability.

A 94 – 100
B 85 – 93
C 75 – 84
D 70 – 74
F 0 – 69

Student Learning Outcomes:

- Categorize and give written information on the exceptionality of a child. (NAEYC 1a, 3b, 3c)
- Select appropriate materials and activities for working with the exceptional child in early childhood programs. (NAEYC 1a, 1b, 1c, 5c)
- Describe environmental and educational accommodations necessary for including children with special needs. (NAEYC 1c)
- Describe the concept of inclusion and list the benefits of this instructional model. (NAEYC 1c)
- Explain the effects of federal legislation on children with special needs and their families. (NAEYC 6b)
- Explain the importance of utilizing systematic observations in different situations and demonstrate the ability to use two methods of observation. (NAEYC 3a -3d)
- Explain the importance of collaboration with professionals and families in serving young children with special needs, describe examples of collaborative activities, and demonstrate collaborative skills. (NAEYC 2c, 3d, 6b, 6e)

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ECD 108
Family and Community Relations

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ECD 101
Co-requisite: None
Course Description:

This course is an overview of techniques and materials for promoting effective family/program partnerships to foster positive child development. Emphasis is on availability and accessibility of community resources and on developing appropriate communication skills.

Course Topics:

- Role of parents and teachers as partners
- Elements that facilitate productive parent/teacher conferences
- Elements of effective parent education workshops
- Resources to support families
- Characteristics of family life
- External factors that cause stress on family life
- Methods teachers use to support families
- Effectively engaging families in an early childhood setting

Required Materials:

- Computer with Internet access
- Word processing software (must be able to save Word format)
- Anti-virus software

Grading System:

An overall grade of C or higher is required for transferability.

A 94 – 100
B 85 – 93
C 75 – 84
D 70 – 74
F 0 – 69

Student Learning Outcomes:

- Describe the role of parents and teachers as partners in the total development of the child, recognizing cultural diversity as a critical element in sensitive, responsive early childhood environments. (NAEYC 2a-2c)
- Identify elements that facilitate productive parent/teacher conferences or home visits, recognizing the emotional responses and protective urges of parents and developing ways to work effectively with them. (NAEYC 1b, 2c, 3c, 3d)
- Identify elements of effective parent education workshops. (NAEYC 1b, 2a, 4a, 4c)
- Identify resources to support families in the community. (NAEYC 2b, 2c)
- Describe characteristics of family life and external factors causing stress on family life. (NAEYC 2a)
- Identify methods teachers may use to convey interest, information, and support to families. (NAEYC 2a, 2c)
- Create a plan to effectively engage families in an early childhood setting. (NAEYC 2a-2c, 5c, 4b)

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ECD 109
Administration and Supervision

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ECD 101
Co-requisite: None
Course Description:

This course is a study of the role and responsibilities of an early childhood administrator. Special focus is on program monetary matters, space management, curriculum, health and food services, and relations among the public, staff, and parents.

Course Topics:

- The Working Director
- Assessing Community Need and Establishing a Program
- Licensing and Certification
• Handling Financial Matters
• Developing a Center Facility
• Equipping the Canter
• Staffing the Center
• Supporting Quality Curriculum
• Working with Families, Volunteers, and the Community
• Evaluating Center Components
• Marketing the Program

Required Materials:
• Computer with Internet access to take quizzes online (if not taking them on campus)

Grading System:
An overall grade of C or higher is required for transferability.

A 94 – 100
B 85 – 93
C 75 – 84
D 70 – 74
F 0 – 69

Student Learning Outcomes:
• Develop personal and professional goals. (NAEYC 6a, 6d)
• Discuss the child care law and current regulations and state licensing standards. (NAEYC 2b)
• Discuss various child care programs and how they differ in philosophy and goals. (NAEYC 6d)
• Develop supervision techniques and personnel policies. (NAEYC 3c, 6b)
• Identify curriculum models and choose appropriate curriculum. (NAEYC 4a-d, 5a-5c)
• Identify and describe the early childhood facility and equipment that meet the needs of children, staff members and families. (NAEYC 1a-c, 2a, 4a)
• Design effective and appropriate marketing materials. (NAEYC 6a, 6d)

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ECD 131
Language Arts

Hours: Class 2, Lab 3, Credit 3
Pre-requisite: ENG 032 and RDG 032 with a “C” or better.
Co-requisite: None

Course Description:
This course is a study of methods and materials in age-appropriate language experiences. Opportunities are provided to develop listening, speaking, prereading and prewriting skills through planning, implementation, and evaluation of media, methods, techniques and equipment. Methods of selection, evaluation, and presentation of children's literature are included.

Course Topics:
• Development of Language
• Environmental Print
• Prewriting Skills
• Read-Aloud Strategies and Techniques
• Components of a Literacy-Rich Environment
• Developmentally Appropriate Language Arts Activity
• Methods and Materials in age-appropriate language experiences

Required Materials:
• South Carolina State Standards for the English Language Arts (ELA) for Early Childhood-grades PreK-2.
• Miscellaneous art/oce supplies
• 3 Ring Binder

Grading System:
An overall grade of C or higher is required for transferability.

A 94 – 100
B 85 – 93
C 75 – 84
ECD 132
Creative Experiences

Hours: Class 2, Lab 3, Credit 3
Pre-requisite: ENG 032 and RDG 032 with a "C" or better.
Co-requisite: None
Course Description:

In this course the importance of creativity and independence in creative expression are stressed. A variety of age-appropriate media, methods and equipment are utilized. Students plan, implement, and evaluate instructional activities.

Course Topics:
- The Concept of Creativity and Promoting Creativity
- The Concept of Aesthetics and Promoting Aesthetics Experiences
- Children, Teachers, and Creative Activities (Developmental levels, DAP)
- Creative Environments
- Play, Development, and Creativity
- Using Technology to Promote Creativity
- Art and Physical Mental Growth
- Art and Social-Emotional Growth
- Developmental Levels and Art
- Program Basics: Goals, Setting Up, Materials, and Strategies
- Two-Dimensional and Three-Dimensional Activities
- Activities involving the Curriculum Areas
  - Dramatic Play and Puppetry
  - Creative Movement
  - Creative Language Experiences
  - Creative Science
  - Creative Social Studies
  - Creative Multicultural Curriculum
- Making a Musical Instrument

Required Materials:
- Computer with Internet access to take quizzes online (if not taking them on campus)

Grading System:

An overall grade of C or higher is required for transferability.

A 94 – 100
B 85 – 93
C 75 – 84
D 70 – 74
F 0 – 69

Student Learning Outcomes:
- Explain the values of creative experiences in a young child's life. (NAEYC 5a, 5b)
- Utilize a variety of media, methods, techniques, and equipment to support age appropriate creative experiences for young children. (NAEYC 5b)
Design creative activities for selected areas of the curriculum. (NAEYC 5a, 5b, 5c)
Analyze the classroom environment for creative components. (NAEYC 5a, 5b, 5c)
Recognize and support the need for musical experiences in the daily lives of children. (NAEYC 1a, 5a)

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ECD 133
Science and Math Concepts

Hours: Class 2, Lab 3, Credit 3
Pre-requisite: Take ENG-032, MAT-032 and RDG-032 with a "C" or better.
Co-requisite: None
Course Description:
This course includes an overview of pre-number and science concepts developmentally-appropriate for young children. Emphasis is on the planning, implementation, and evaluation of developmentally-appropriate activities utilizing a variety of methods and materials.

Course Topics:
- Mathematics Process Standards/Mathematical Practices
- Mathematics Content Standards
- Number and Number Operations
- Measurement
- Geometry
- Algebraic Thinking
- Data Analysis
- Science Process Skills
- Life, Physical, Health, Earth and Environmental Science

Required Materials:
- Container with dividers for handouts, activities, etc.
- 4 x 6

Grading System:
An overall grade of C or higher is required for transferability.
A 94 – 100
B 85 – 93
C 75 – 84
D 70 – 74
F 0 – 69

Student Learning Outcomes:
- Utilize appropriate media, materials, techniques, and methods during development of science and math activities. (NAEYC 4c, 5a, 5c)
- Evaluate age appropriate science and math activities. (NAEYC 4b)
- Integrate science and math activities into various areas of the preschool program. (NAEYC 4b, 4c, 5a, 5c)
- Plan, implement, and evaluate age-appropriate science and math activities. (NAEYC 4b, 4d, 5c)
- Prepare and organize resources for curriculum use in science and math. (NAEYC 4b, 4d, 5c)
- Create and demonstrate science and math experiences that are important and relevant to preschool children. (NAEYC 4b, 4c, 5b, 5c)

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ECD 135
Health, Safety and Nutrition

Hours: Class 2, Lab 3, Credit 3
Pre-requisite: Take ENG-032, RDG-032 and ECD-101 with a "C" or better.
Co-requisite: None
Course Description:
This course covers a review of health/safety practices recommended for child care and includes information on common diseases and health problems. Certification preparation is provided in pediatric safety, CPR, and first aid. Guidelines and information on nutrition and developmentally-appropriate activities are also studied in the course.

Course Topics:
- Review of health/safety practices in Early Childhood Settings
- Common diseases and health problems in Early Childhood Settings

• Pediatric Safety, CPR and First Aid
• Nutrition in Early Childhood Settings
• Developmentally appropriate activities for Health, Safety, and Nutrition in the Early Childhood Settings
• Child Abuse and Maltreatment

Required Materials:
• Computer with Internet access
• Word processing software (must be able to save Word format)
• Anti-virus software

Grading System:
An overall grade of C or higher is required for transferability.
A 94 – 100
B 85 – 93
C 75 -84
D 70 – 74
F 0 – 69

Student Learning Outcomes:
• Plan, design, and evaluate activities for promoting good nutrition, health, and safety practices in young children. (NAEYC 1a, 4a-4d)
• Describe and assess the components of a healthy, safe and unsafe environment for young children. (NAEYC 1a, 1c, 4a, 4b)
• Recognize symptoms and describe treatments and procedures for common diseases and illnesses for young children. (NAEYC 1a)
• Demonstrate knowledge of the basic components of CPR and First Aid for young children. (NAEYC 6b, 6c)
• Identify the South Carolina Early Learning Standards to support health, safety, and nutrition activities for children. (NAEYC 4b, 4c, 4d)

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ECD 200
Curriculum Issues in Infant and Toddler Development

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ECD 101, ECD 102
Co-requisite: None
Course Description:
This course is a study of infant and toddler care. Emphasis is on brain development and its implications for caring for infants and toddlers. Planning and teaching strategies as they relate to child development, curriculum and environment are included in the course.

Course Topics:
• Infant-Toddler Education
• Caregiving as Curriculum
• Play and Exploration as Curriculum
• Perception
• Motor Skills
• Cognition
• Language
• Emotions
• Social Skills
• The Physical Environment
• The Social Environment
• Adult Relationships in Infant-Toddler Care and Education Programs

Required Materials:
• Computer with Internet access
• Word processing software (must be able to save Word format)
• Anti-virus software

Grading System:
An overall grade of C or higher is required for transferability.
A 94 – 100
B 85 – 93
Student Learning Outcomes:

- Demonstrate an understanding that infant/toddler curriculum must reflect the individual child's needs and interest. (NAEYC 1a, 1b, 2a, 3b-d)
- Create a physical and social environment that reflects knowledge of current growth and development research and addresses and meets the needs of children and families. (NAEYC 3a-d)
- Identify appropriate strategies for interacting with infants and toddlers and creating safe, stimulating and nurturing environments for their care and education. (NAEYC 1a-c, 4a-d)
- Demonstrate an understanding that curriculum should be based on knowledge of an information gained from children's families (NAEYC 2a-c, 4a-d).
- Demonstrate the ability to responsibly observe, document, and assess young children to promote positive outcomes for young children. (NAEYC 3d)

ECD 201

Principles of Ethics and Leadership in Early Care and Education

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ECD 101
Co-requisite: None
Course Description:

This course includes an overview of historical views on leadership and issues and challenges of leadership in early care and education. Emphasis is on current trends and issues. This course also reviews ethical principles as they relate to children, families, colleagues, and the community and society.

Course Topics:

- Morality and Ethics
- Addressing Ethical Issues
- Ethical Responsibilities to Children
- Ethical Responsibilities to Families
- Ethical Responsibilities to Colleagues
- Ethical Responsibilities to Community and Society
- Advocacy in Early Care and Education
- Leadership in Early Care and Education

Required Materials:

- Miscellaneous supplies for toy project

Grading System:

An overall grade of C or higher is required for transferability.

A 94 – 100
B 85 – 93
C 75 -84
D 70 – 74
F 0 – 69

Student Learning Outcomes:

- Develop a personal philosophy of early care and education. (NAEYC 5a)
- Identify major historical views on leadership and describe how they have impacted current early care and education programs. (NAEYC 5d, 5e)
- Describe appropriate ethical relationships with children, families, colleagues, community, and society. (NAEYC 2a, 4a, 5b)
- Develop a personal professional leadership career plan for the field of early care and education. (NAEYC 5a, 5c)
- Develop the five core areas of knowledge in mentoring for early childhood professionals. (NAEYC 5b, 5c, 5e)
- Develop a unit to reflect personal statements of philosophy, leadership and ethical responsibilities. (NAEYC 5)

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Growth and Development II

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 032 and RDG 032 with a "C" or better
Co-requisite: None

Course Description:
This course is an in-depth study of preschool children growing and developing in today's world. Focus is on "total" development of the child with emphasis on physical, social, emotional, cognitive, and nutritional areas of development. Developmental tasks and appropriate activities are explored in the course.

Course Topics:
• Physical development of the Preschooler and School-Age Child
• Intellectual development of the Preschooler and School-Age Child
• Social-Emotional Development of the Preschooler and School-Age Child
• Providing for the Preschool and School-Age Child's Needs
• Assessing the Physical, Intellectual, and Social-Emotional Development of Children

Required Materials:
• Miscellaneous supplies for toy project

Grading System:
An overall grade of C or higher is required for transferability.
A 94-100
B 85-93
C 75-84
D 70-74
F 0-69

Student Learning Outcomes:
• Describe typical physical, social, emotional, language, and cognitive development of a child from ages 3-8. (NAEYC 1a, 1b, 4c)
• Identify the influence of environment on the development of the child. (NAEYC 1a, 1b)
• Observe and record information that reflects inter-relationships of the physical, social, emotional, language and cognitive domains of development of a child from ages 3-8. (NAEYC 3a, 3b, 3c, 3d)
• Plan and implement age and individually appropriate activities for a child from 3-8 years, based on knowledge of developmental milestones. (NAEYC 1a, 1c, 4b, 4c, 4d)
• Describe the importance of supportive adult and peer relationships for children from ages 3-8. (NAEYC 1b, 2a, 2b, 2c).

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ECD 205

Socialization and Group Care of Infants and Toddlers

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 032 and RDG 032 with a "C" or better
Co-requisite: None

Course Description:
This course is the study of the socialization and group care of infants and toddlers. Emphasis is on guidance and management, understanding behavior, temperament, the importance of routines, primary care and continuity of care, and examining the elements of quality environments.

Course Topics:
• Program Policies
• Temperament
• Responsive Practices
• Emotional Development
• Socialization and Behavior
• Impact of Routines and Environment on the Child's Social Emotional Development

Required Materials:
None

Grading System:
An overall grade of C or higher is required for transferability.

A 94 – 100
B 85 – 93
C 75 -84
D 70 – 74
F 0 – 69

Student Learning Outcomes:

- Use a variety of strategies to encourage infant and toddler social-emotional development. (NAEYC 1a, 1b, 1c)
- Identify different young children's temperamental traits and develop techniques for dealing with these different styles in infant/toddler groups. (NAEYC 1b, 1c, 2b)
- Develop guidance and discipline techniques to foster responsive caregiving practices with infants and toddlers in group care. (NAEYC 1b, 1c)
- Match caregiver strategies to infant/toddler social-emotional milestones. (NAEYC 1a-c, 3b 4b)
- Identify the multiple influences on infants and toddlers and the importance of partnerships with the child's family. (NAEYC 1b, 2a, 2b, 2c)

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ECD 207
Infants and Toddlers with Special Needs

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 032 and RDG 032 with a “C” or better
Co-requisite: None
Course Description:
This course provides an overview of the field of infants and toddlers with special needs. Emphasis will be placed on instructional strategies, adaptations, environment, inclusion, etiology, federal legislation, family partnership, multicultural considerations, and optimal development.

Course Topics:
- Instructional strategies
- Adaptations
- Environment
- Inclusion
- Etiology
- Federal legislation
- Family partnership
- Multicultural considerations

Required Materials:
None

Grading System:
An overall grade of C or higher is required for transferability.

A 94-100
B 85-93
C 75-84
D 70-74
F 0-69

Student Learning Outcomes:

- Identify the benefits and challenges of including infants and toddlers in a child care program. (NAEYC 1a, 4a)
- Identify and understand the principles of infant/toddler physical, cognitive, language, social, self-help, and motor development. (NAEYC 1a, 1b)
- Create and modify the environment and experiences to meet the individual needs in fostering independence for all infants and toddlers. (NAEYC 1c)
- Identify and practice strategies for discussing developmental concerns with families. (NAEYC 2b)
- Support and facilitate family/child interactions as primary focus for infants and toddlers. (NAEYC 2b)
- Identify and practice adapting materials and activities for infants and toddlers with special needs. (NAEYC 5b, 5c)
- Develop an understanding of the major provisions and implications of legal issues. (NAEYC 6b)
Identify resources for parents and caregivers at the local and state level that would assist in meeting needs. (NAEYC 6b)

ECD 237
Methods and Materials

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ECD 101, ECD 102, ECD 105, ECD 131, ECD 132, ECD 133, ECD 135, ECD 203 and completion of a student portfolio; ECE Department Chair approval required.
Co-requisite: ECD 243

Course Description:
This course includes an overview of developmentally-appropriate methods and materials for planning, and evaluating environments. Emphasis is on integrating divergent activities in each curriculum area.

Course Topics:
- Defining Developmentally Appropriate Practice (DAP)
- Planning for DAP Curriculum
- DAP Physical Environments
- DAP Social/Emotional Environments
- DAP Cognitive/Language/Literacy Environments
- Ethics in the Classroom Environment
- Completion of Professional Portfolio
- Bulletin Board preparation

Required Materials:
- Computer with Internet access
- Word processing software (must be able to save Word format)
- Anti-virus software

Grading System:
An overall grade of C or higher is required for transferability.
A 94-100
B 85-93
C 75-84
D 70-74
F 0-69

Student Learning Outcomes:
- Develop effective instructional techniques for teaching young children. (NAEYC 1c)
- Demonstrate understanding of developmentally appropriate practices. (NAEYC 1a, 1b, and 1c)
- Select, evaluate, and utilize appropriate equipment and materials for a preschool program. (NAEYC 4c)
- Develop and implement lesson plans and activities which support a fully integrated curriculum. (NAEYC 1a-1c, 4b, 4c, 5a-5c)
- Demonstrate understanding of ethical standards and guidelines and how to implement them in teaching practices. (NAEYC 6b)
- Assemble evidence that demonstrates professional readiness in the Early Care and Educational field. (NAEYC 6a)

ECD 243
Supervised Field Experience I

Hours: Class 1, Lab 6, Credit 3
Pre-requisite: ECD 101, ECD 102, ECD 105, ECD 131, ECD 132, ECD 133, ECD 135, ECD 203 and completion of a student portfolio; ECE Department Chair approval required.
Co-requisite: ECD 237

Course Description:
This course includes emphasis on planning, implementing, and evaluating scheduled programs, age appropriate methods, materials, activities, and environments of early childhood principles and practices.

Course Topics:
- Participate in Classroom Activities
• Keep record of Daily attendance on Time Sheet
• Reflective Journal Writings
• Case Study promoting Observation, Documentation and Assessment
• Lesson Plan Requirement and Evaluations

Required Materials:
• Computer with Internet access
• Word processing software (must be able to save Word format)
• Anti-virus software

Grading System:
An overall grade of C or higher is required for transferability.
A 94-100
B 85-93
C 75-84
D 70-74
F 0-69

Student Learning Outcomes:
• Incorporate knowledge of infant/toddler development and practices to design and implement developmentally appropriate activities. (NAEYC 1a, 4b, 4c)
• Plan, implement, and evaluate instructional activities for infants/toddlers with an understanding of content knowledge in early education. (NAEYC 5a, 5b)
• Create healthy, respectful, supportive, and challenging environments for infants/toddlers. (NAEYC 1c)
• Collaborate with classroom teachers and involve oneself with the early childhood field. (NAEYC 6a, 6c)
• Utilize observation, documentation and other appropriate assessment tools. (NAEYC 3a-d)
• Implement and uphold ethical standards and other professional guidelines. (NAEYC 6b)
• Integrate knowledgeable, critical and reflective perspectives on early education. (NAEYC 6d)

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ECD 251
Supervised Field Experiences in Infant/Toddler Environment

Hours: Class 1, Lab 6, Credit 3
Pre-requisite: Take ECD-101, ECD-102, ECD-205 and ECD-207 with a minimum grade of “C.” ECE Department Chair approval required.
Co-requisite: None
Course Description:
This course is a study of planning, implementing, and evaluating scheduled programs, age-appropriate methods, materials, activities and environments of infants and toddlers.

Course Topics:
• Participate in Classroom Activities
• Keep record of Daily attendance on Time Sheet
• Reflective Journal Writings
• Case Study promoting Observation, Documentation and Assessment
• Lesson Plan Requirement and Evaluations

Required Materials:
• Computer with Internet access
• Word processing software (must be able to save Word format)
• Anti-virus software

Grading System:
An overall grade of C or higher is required for transferability.
A 94-100
B 85-93
C 75-84
D 70-74
F 0-69

Student Learning Outcomes:
• Incorporate knowledge of infant/toddler development and practices to design and implement developmentally appropriate activities. (NAEYC 1a, 4b, 4c)
• Plan, implement, and evaluate instructional activities for infants/toddlers with an understanding of content knowledge in early education. (NAEYC 5a, 5b)
• Create healthy, respectful, supportive, and challenging environments for infants/toddlers. (NAEYC 1c)
• Collaborate with classroom teachers and involve oneself with the early childhood field. (NAEYC 6a, 6c)
• Utilize observation, documentation and other appropriate assessment tools. (NAEYC 3a-d)
• Implement and uphold ethical standards and other professional guidelines. (NAEYC 6b)
• Integrate knowledgeable, critical and reflective perspectives on early education. (NAEYC 6d)

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ECD 257
Supervised Field Experiences in Early Childhood Special Education

Hours: Class 0, Lab 9, Credit 3
Pre-requisite: ECD 101, ECD 102, ECD 203, ECD 207, PSY 214, and completion of a student portfolio.
ECE Department Chair approval required.
Co-requisite: None
Course Description:
This course includes a supervised field experience in a team environment by certified/licensed professionals who monitor and evaluate students' skills in order to work with children who are developmentally delayed.

Course Topics:
• Participate in Classroom Activities
• Keep record of Daily attendance on Time Sheet
• Reflective Journal Writings
• Case Study promoting Observation, Documentation and Assessment
• Lesson Plan Requirement and Evaluations

Required Materials:
• Computer with Internet access
• Word processing software (must be able to save Word format)
• Anti-virus software

Grading System:
An overall grade of C or higher is required for transferability.
A 94-100
B 85-93
C 75-84
D 70-74
F 0-69

Student Learning Outcomes:
• Incorporate knowledge of children with special needs to design and implement developmentally appropriate activities. (NAEYC 1a, 4b, 4c)
• Plan, implement, and evaluate instructional activities for children with special needs with an understanding of content knowledge in early education. (NAEYC 5a, 5b)
• Create healthy, respectful, supportive, and challenging environments for all children. (NAEYC 1c)
• Collaborate with classroom teachers and involve oneself with the early childhood field. (NAEYC 6a, 6c)
• Individualize developmentally effective approaches that connect with children and families. (NAEYC 2b, 3b, 4a)
• Utilize observation, documentation and other appropriate assessment tools. (NAEYC 3a-d)
• Implement and uphold ethical standards and other professional guidelines. (NAEYC 6b)
• Integrate knowledgeable, critical and reflective perspectives on early education. (NAEYC 6d)

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ECO 201
Economic Concepts

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: Take ENG 032, RDG 032, and MAT 032 wall with a minimum grade of "C"
Co-requisite: None
Course Description:
This course is a study of micro- and macro-economic concepts and selected economic problems.

Course Topics:
- Opportunity Cost
- Comparative Advantage
- Supply and Demand
- Price elasticity
- Production and Cost
- National Income Accounting
- Labor Market
- Monetary Policy

Required Materials:
- Computer with Internet access
- Word processing software (must be able to save in Word format)
- Anti-virus software.
- Online component access code required for online sections only.

Grading System:
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Construct a marginal analysis of costs and benefits resulting in efficient resource allocation.
- Interpret supply and demand models.
- Calculate price elasticity, income elasticity, and cross elasticity.
- Analyze short-run and long-run production cost
- Apply profit maximization rules to perfectly competitive market structures.
- Examine the national income accounting process.
- Calculate unemployment and other labor market statistics.
- Assess monetary policy strategies used to promote stability in the business cycle.

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ECO 210
Macroeconomics

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 032 and RDG 032 with a "C" or better
Co-requisite: None
Course Description:
This course includes the study of fundamental principles and policies of a modern economy to include markets and prices, national income accounting, cycles, employment theory and fiscal policy, banking and monetary controls, and the government's role in economic decisions and growth.

Course Topics:
- Opportunity Cost
- Thinking on the Margin
- Comparative Advantage / International Trade
- Supply and Demand / Aggregate Supply and Aggregate Demand
- National Income Accounting
- Labor Market
- Consumer Price Index
- Monetary and Fiscal Policies
- Economic Growth

Required Materials:
- Computer with Internet access
- Word processing software (must be able to save in Word format)
- Anti-virus software.
- Online component access code required for online sections only.
Grading System:
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Construct a marginal analysis of costs and benefits resulting in efficient resource allocation.
- Interpret aggregate supply and aggregate demand models.
- Examine the determinants of GDP growth and the national income accounting process.
- Calculate unemployment and changes in the cost of living.
- Dissect international trade models using the theory of comparative advantage.
- Compare various fiscal and monetary policy strategies used to promote stability in the business cycle.

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ECO 211
Microeconomics

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 032, MAT 032, RDG 032
Co-requisite: None

Course Description:
This course includes the study of the behavior of households and firms, including supply and demand, elasticity, price/input in different market structures, pricing of resources, regulations, and comparative advantage and trade.

Course Topics:
- Opportunity Cost
- Thinking on the Margin
- Comparative Advantage
- Supply and Demand
- Price elasticity
- Resource Allocation Systems
- Market Intervention
- Production and Cost
- Pricing/Output Decisions by Market Structure

Required Materials:
- Computer with Internet access
- Word processing software (must be able to save in Word format)
- Anti-virus software.
- Online component access code required for online sections only.

Grading System:
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Construct a marginal analysis of costs and benefits resulting in efficient resource allocation.
- Interpret supply and demand models.
- Calculate price elasticity, income elasticity, and cross elasticity.
- Contrast various systems of resource allocation.
- Assess the impact of government intervention within various markets.
- Analyze short-run and long-run production costs.
- Apply profit maximization rules to different market structures.

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EDU 230
Schools in Communities

Hours: Class 4, Lab 0, Credit 4
Pre-requisite: ENG 100, RDG 100 with a minimum grade of "C."
Co-requisite: None
Course Description:
This course provides students with a basic understanding of the social, political, and historical aspects of diverse educational institutions in American culture with an emphasis on families, schools, and communities. Within the parameters of an approved articulation agreement, this course may transfer to an accredited Education program at a comprehensive four-year college or university.

Course Topics:
- Teachers and Students
- Historical Foundations
- Philosophical Foundations
- Instruction and Classroom Management
- Finance
- Curriculum
- School Reform and Accountability
- Student Diversity
- School Law

Required Materials:
Headphones will be required to complete online activities in class. Students are responsible for providing their headphones.

Grading System:
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Describe the major historical influences on American education by creating a timeline of historical events and their impact on the educational experience.
- Analyze the major philosophical influences on American education by writing a philosophy of education.
- Examine the societal influences upon schools by participating in a community service project.
- Explain the political impact upon the community school by observing a local school governance body during the decision-making process.
- Reflect upon experiences and activities completed during the semester by creating a portfolio of major assignments.

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EEM 105
Basic Electricity
Hours: Class 1, Lab 3, Credit 2
Pre-requisite: None
Co-requisite: None
Course Description:
This course is a survey of basic electrical principles, circuits, and measurements.

Course Topics:
- Ohm's Law
- Series Circuits
- Parallel Circuits
- Series-Parallel Circuits

Required Materials:
- Fluke Meter
- Calculator
- Safety glasses
- Basic hand tools

Grading System:
A 90 – 100
B 80 – 89
C 70 – 79
EEM 107
Industrial Computer Techniques

Hours: Class 2, Lab 0, Credit 2
Pre-requisite: None
Co-requisite: None
Course Description:
This course is an introduction to microcomputers. Topics include definitions of computer types, hardware and software structure, movement of data, and application of microcomputers.

Course Topics:
- Operating Systems
- Industry Specific Systems
- Networking
- Types of Software Packages

Required Materials:
- Each student will need a flash drive (at least 1GB).

Grading System:
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Describe the basic parts of the computer system.
- Judge the effectiveness of shared data.
- Investigate various Operating Systems.
- Use a word processing application to create business documents.
- Use a spreadsheet software application to create spreadsheets and/or databases.
- Design a presentation using various presentation software applications.

EEM 109
NCCER Core Curriculum

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: None
Co-requisite: None
Course Description:
This is an introductory craft skills course that teaches basic safety, rigging, communication and employability skills. An introduction to hand tools, power tools, blueprints and craft skills math is included.

Course Topics:
- Safety
- NCCER Core Curriculum
- Construction Trades
- OSHA
- Print Reading

Required Materials:
- None
Grading System:
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Identify the safety obligations of workers and managers to ensure a safe workplace.
- Compare various types of hazards and accident reporting techniques.
- Identify the various OSHA standards and regulations.
- Apply the effective use of written and oral communication techniques.
- Demonstrate the proper use of various mechanical tools and equipment.
- Employ the proper basic employability skills used in an industrial environment.

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EEM 117
AC/DC Circuits I

Hours: Class 2, Lab 6, Credit 4
Pre-requisite: None
Co-requisite: None
Course Description:
This course is a study of direct and alternating theory, Ohm's Law, series, parallel, and combination circuits. Circuits are constructed and tested.

Course Topics:
- DC Theory
- Resistors
- Magnetism
- Batteries
- Ohms Law
- Circuit Computations

Required Materials:
- Safety Glasses
- Volt-Ohm (VOM) Meter
- Calculator-(TI-30xa preferred)

Grading System:
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Calculate the values of Ohm's Law and Circuits.
- Solve combination circuits.
- Compare batteries to energy.
- Select proper wire size per application.
- Analyze magnetism.
- Differentiate Alternating Current from Direct Current.
- Measure values in circuits.

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EEM 118
AC/DC Circuits II

Hours: Class 2, Lab 6, Credit 4
Pre-requisite: EEM 117
Co-requisite: None
Course Description:
This course is a continuation of the study of direct and alternating current theory to include circuit analysis using mathematics and verified with electrical measurements.

Course Topics:
Alternating Current Theory
Investigating Capacitors, Inductors and Resistors in circuits
Designing circuits using Multisim software
Building and Testing circuits in lab

Required Materials:
- Calculator
- Safety Glasses
- Digital Multimeter

Grading System:
- A 90 – 100
- B 80 – 89
- C 70 – 79
- D 60 – 69
- F 0 – 59

Student Learning Outcomes:
- Distinguish between direct and alternating current.
- Analyze various configurations of AC circuits containing resistance and inductance.
- Evaluate various configurations of AC circuits containing resistance and capacitance.
- Calculate various configurations of AC circuits containing resistance, inductance and capacitance.
- Differentiate between 3-phase and single-phase volts.
- Construct and measure various delta and wye circuits.

EEM 121
Electrical Measurements

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: None
Co-requisite: None
Course Description:
This course covers the basic principles of electrical measuring instruments and how they are used in industries.

Course Topics:
- Safety
- Voltage
- Amperage
- Resistance
- Power
- Ohm's Law
- Meters
- Measurements

Required Materials:
- Safety Glasses
- Volt-Ohm (VOM) Meter
- Calculator (TI-30xa preferred)

Grading System:
- A 90 – 100
- B 80 – 89
- C 70 – 79
- D 60 – 69
- F 0 – 59

Student Learning Outcomes:
- Consider the safety obligations of workers and managers to ensure a safe workplace.
- Identify various types of hazards and accident reporting techniques.
- Identify the various OSHA standards and regulations.
- Identify different types of electrical measurements.
- Compute values for measurements.
- Demonstrate the proper use of various electrical tools and equipment for testing and measurement.

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EEM 123
Schematics Analysis

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: EEM 117
Co-requisite: None
Course Description:
This course covers the interpretation of electrical and electronic schematics, including the mathematical analysis of these circuits.

Course Topics:
- Classifying various electrical/electronic symbols
- Identifying components by symbol
- Power Circuits and Control Circuits
- Components on a schematic

Required Materials:
- Calculator

Grading System:
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Compare and classify various electronic and electrical symbols.
- Identify power circuits versus control.
- Classify various wiring diagrams by their construction and application.
- Assess various schematic diagrams by their construction and application.
- Explain the relationship between currents on a schematic diagram.
- Evaluate and convert a ladder diagram to either a wiring or schematic drawing.

EEM 145
Control Circuits

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: EEM 117
Co-requisite: None
Course Description:
This course covers the principles and applications of component circuits and methods of motor control.

Course Topics:
- Differentiating between Open and Closed Loop Systems
- Physical properties of different systems
- Thermal properties in control systems

Required Materials:
None

Grading System:
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Distinguish between the operations of open and closed loop control systems.
- Outline the physical properties of Liquids and methods used in the measurement of pressure systems.
- Describe the fundamental thermal properties of matter and methods used in the measurement of temperature controlled systems.
- Explain physical properties involved in the measurement and control of flow of Liquids.
Summarize physical properties involved in the measurement and control of level of Liquids.

Select and specify industrial detection sensors.

EEM 151
Motor Controls I

Hours: Class 2, Lab 6, Credit 4
Pre-requisite: None
Co-requisite: EEM 117

Course Description:
This course is an introduction to motor controls, including a study of the various control devices and wiring used in industrial processes.

Course Topics:
- Safety
- Power Sources
- Control Circuits
- Load Calculation
- Motors
- Control Devices

Required Materials:
- Safety Glasses
- Volt-Ohm (VOM) Meter
- Calculator-(TI-30xa preferred)

Grading System:
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Associate safety considerations for personnel, work area, and maintenance of equipment.
- Construct and operate magnetic motor starter circuits using push button stations.
- Simulate run, jog and stop circuits.
- Develop timer circuits.
- Test multiple push button station circuits.
- Create Forward /Reversing motor circuits.

EEM 152
Motor Controls II

Hours: Class 2, Lab 6, Credit 4
Pre-requisite: EEM 151
Co-requisite: None

Course Description:
This course is a continuation of the study of motor controls, including additional techniques and control devices.

Course Topics:
- Advanced Study of relay components and circuits
- Designing control and power circuits
- Constructing control and power circuits using relay logic

Required Materials:
- Calculator
- Safety Glasses
- Digital Multimeter

Grading System:
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:

- Experiment with Pilot and Control Devices.
- Construct pilot Device Circuits.
- Identify logic control circuits.
- Construct Control Circuits.
- Design and construct various electrical schematics and motor control operating circuits commonly used in the motor controls industry.
- Troubleshoot motor control circuits used in industry.

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EEM 162

Introduction to Process Control

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: None
Co-requisite: None
Course Description:

This course is an introduction to control systems theory and process control characteristics.

Course Topics:

- Safety
- Industrial Processes
- Methods of Control
- Pressure
- Temperature
- Flow rate
- Sensors and Devices

Required Materials:

- Safety Glasses
- Volt-Ohm (VOM) Meter
- Calculator-(TI-30xa preferred)

Grading System:

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:

- Define internal and external factors that affect a control system.
- Identify the components and explain the operation of the major internal parts of a process controller.
- Develop and demonstrate the execution of a system program.
- Categorize various sensors used in instrumentation, explaining their relationship to transducers.
- Analyze a process control system operation, selecting the appropriate sensing equipment for that operation.
- Research an industrial process or environment that affects you.

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EEM 200

SEMICONDUCTOR DEVICES

Hours:

Pre-requisite: None
Co-requisite: None
Course Description:

This course is a study of solid state devices such as; FETs, Op Amps and the thyristor family.

Course Topics:

Required Materials:

Grading System:
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
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EEM 201
Electronic Devices I

Hours: Class 2, Lab 3, Credit 3
Pre-requisite: EEM 117
Co-requisite: None
Course Description:
This course is a study of the fundamental principles of common electronic devices and circuits. Emphasis is placed on solid-state principles and applications.

Course Topics:
- Discrete semiconductor devices
- Component characteristics
- Designing circuits using components
- Testing circuits on breadboard

Required Materials:
- Calculator
- Safety Glasses
- Digital Multimeter

Grading System:
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Describe the basic fundamentals and construction of semiconductor materials.
- Construct circuits with Diodes, Bridges, and Filters.
- Compute values of components in a circuit
- Examine the construction and operation of the transistor.
- Demonstrate the applications of FET's.
- Evaluate circuits using semiconductor devices.
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EEM 202
Electronic Devices II

Hours: Class 2, Lab 3, Credit 3
Pre-requisite: EEM 201
Co-requisite: None
Course Description:
This course is a continuation of the study of electronic devices and circuits. Components and circuit configurations are analyzed to achieve a more comprehensive coverage of electronic devices and circuits.

Course Topics:
- IC Chips
- 555 Timers
- Power Supply
- Oscillators
- Operational Amplifiers
- Circuit Computations

Required Materials:
- Safety Glasses
**EEM 211**

**AC Machines**

Hours: Class 2, Lab 3, Credit 3  
Pre-requisite: None  
Co-requisite: EEM 117  
Course Description:  
This course is a study of application, operation, and construction of AC machines.

Course Topics:  
- Safety  
- Ohm's Law  
- Three Phase Power  
- AC Motors  
- DC Motors  
- Transformers  
- Circuit Calculations  

Required Materials:  
- Safety Glasses  
- Volt-Ohm (VOM) Meter  
- Calculator (TI-30xa preferred)  

Grading System:  
- A 90 – 100  
- B 80 – 89  
- C 70 – 79  
- D 60 – 69  
- F 0 – 59  

Student Learning Outcomes:  
- Demonstrate safety practices in lab area.  
- Review electrical properties of three phase circuits.  
- Demonstrate the operation of single-phase motors.  
- Demonstrate the operation of three-phase motors.  
- Differentiate between three-phase and single-phase voltages.  
- Utilize transformers in various circuit configurations.  

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**EEM 221**

**DC/AC Drives**

Hours: Class 2, Lab 3, Credit 3  
Pre-requisite: EEM 117, 201, 211  
Co-requisite: None  
Course Description:  
This course covers the principles of operation and application of DC drives and AC drives.

Course Topics:  
- AC & DC drive characteristics  
- Analyze various Drive schematics
Test Drive circuits
Identify factors that contribute to drive failure

Required Materials:
- Calculator
- Safety Glasses
- Digital Multimeter

Grading System:
- A 90 – 100
- B 80 – 89
- C 70 – 79
- D 60 – 69
- F 0 – 59

Student Learning Outcomes:
- Compare the basic fundamentals of DC Drive Fundamentals, DC Controllers, and Braking.
- Evaluate DC Chopper Drives.
- Demonstrate the DC Drive Troubleshooting and setup procedures.
- Explain the safety precautions that must be taken while troubleshooting an AC drive system.
- Compare the AC Drive Fundamentals, VVIs, and CSI's.
- Simulate the operation of a Variable Voltage Inverters.

EEM 230
DIGITAL ELECTRONICS

Hours:
Pre-requisite: None
Co-requisite: None

Course Description:
This course is a study of logic, mathematics, components and circuits utilized in digital equipment.

Course Topics:
Required Materials:

Grading System:
- A 90 – 100
- B 80 – 89
- C 70 – 79
- D 60 – 69
- F 0 – 59

Student Learning Outcomes:

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EEM 231
Digital Circuits I

Hours: Class 2, Lab 3, Credit 3
Pre-requisite: EEM 117 or permission
Co-requisite: None

Course Description:
This course is a study of the logic elements, mathematics, components, and circuits utilized in digital equipment. Emphasis is placed on the function and operation of digital integrated circuit devices.

Course Topics:
- Safety
- Converting Numbering Systems
- Analogue-Digital Conversion
- Logic Gates
- Integrated Circuits
- Circuit Calculations

Required Materials:
• Safety Glasses
• Volt-Ohm (VOM) Meter

Grading System:
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
• Outline the basic fundamentals and the difference between analog and digital.
• Convert the use of the different numbering systems used in digital circuits.
• Assess the operation of different logic gates.
• Demonstrate methods used in logic circuit simplification.
• Explain the combinational networks used in digital circuits.
• Experiment with the different uses for latches and flip-flops.
• Evaluate the use of combining multiple gates and devices to perform specific functions.

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EEM 240
Basic Microprocessors
Hours: Class 3, Lab 3, Credit 4
Pre-requisite: EEM 231
Co-requisite: EEM 117 or permission
Course Description:
This course is a study of basic microprocessor concepts such as microprocessor structure, programming, architecture and interfacing.

Course Topics:
• Study of microprocessor concepts
• Architecture
• Programming
• Interfacing

Required Materials:
• Calculator
• Safety Glasses
• Digital Multimeter

Grading System:
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
• Analyze the integration of microprocessor systems, software and programs.
• Explain basic levels of microprocessor programs.
• Write programs using machine code.
• Explain microprocessor cycles and basic hardware concepts.
• Define the types of memories used and their applications.
• Describe the design of basic microprocessor circuitry used for address decoding, memories, peripherals, and system control.

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EEM 250
PROGRAMMABLE LOGIC CONTROLLERS
Hours:
Pre-requisite: None
Co-requisite: None
Course Description:
This course is a study of programmable control systems with emphasis on basic programming techniques. Additional topics such as interfacing, data manipulation and
report generation will be covered.

Course Topics:
Required Materials:
Grading System:

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:

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EEM 251
Programmable Controllers

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: EEM 151
Co-requisite: None
Course Description:

This course is an introduction to programmable control systems with emphasis on basic programming techniques. A variety of input/output devices and their applications are covered.

Course Topics:

- Safety
- History of Programmable Logic Controller (PLC)
- Overview of a PLC System
- Intro to Programming Languages/Software
- Manipulating Field Devices with a PLC

Required Materials:

- Safety Glasses
- Volt-Ohm (VOM) Meter
- Calculator (TI-30xa preferred)

Grading System:

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:

- Explain logic functions.
- Describe the fundamentals of the Allen Bradley PLC 5.
- Interpret the wiring of a Power Supply, Input Modules, and Output Modules.
- Utilize PLC Software.
- Illustrate basic programming and program design.
- Design a Block Program.

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EEM 252
Programmable Controllers Applications

Hours: Class 2, Lab 3, Credit 3
Pre-requisite: EEM 251
Co-requisite: None
Course Description:

This course covers the application of programmable controller theories and operation procedures. Topics such as interfacing data manipulation and report generation are covered. Programmable controller projects are constructed, operated, and tested.

Course Topics:

- Safety
- Controller Functionality
• Designing Input/Output Files (I/O)
• Writing Data Files
• Programming using Sequencers
• Use Timer Functions to manipulate programming

Required Materials:
• Safety Glasses
• Volt-Ohm (VOM) Meter
• Calculator-(TI-30xa preferred)

Grading System:
A  90 – 100
B  80 – 89
C  70 – 79
D  60 – 69
F  0 – 59

Student Learning Outcomes:
• Analyze the components of a programmable controller.
• Compare the relationship of the data table and the input/output data files.
• Illustrate the steps required to load a ladder type program onto a programmable controller.
• Evaluate the use of timers and counters in a program.
• Write programs using data manipulation instructions.
• Generate reports that monitor the operation of a controlled operation.

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EEM 275
Technical Troubleshooting

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: EEM 201
Co-requisite: None

Course Description:
This course consists of a systematic approach to troubleshooting. Techniques used to analyze proper circuit operation and malfunctions are studied.

Course Topics:
• Electronic schematic symbols and their use in circuits.
• Isolating the defective components to circuit board level.
• Troubleshooting and repair techniques

Required Materials:
• Calculator
• Safety Glasses
• Digital Multimeter

Grading System:
A  90 – 100
B  80 – 89
C  70 – 79
D  60 – 69
F  0 – 59

Student Learning Outcomes:
• Describe electronic schematic symbols and interpret their use in circuits.
• Isolate the defective equipment, circuit board, stage, and components.
• Define troubleshooting techniques on power supplies and software driven circuits.
• Evaluate manufacturer's methods of part identification.
• Demonstrate ability to use logic in determining the nature of a problem.
• Determine if a possible corrective action for the cause of the problem exists.

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EEM 276
Applied Troubleshooting

Hours: Class 1, Lab 6, Credit 3
Pre-requisite: None
Co-requisite: EEM 202

Course Description:
This course is an application of electronic troubleshooting methods. The student analyzes, troubleshoots, and repairs circuits.

Course Topics:
- Safety practices in industry
- Troubleshooting methods for electronics
- Analyzing and Repairing electronic circuits

Required Materials:
- Calculator
- Safety Glasses
- Digital Multimeter

Grading System:
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Test various stages of electronic equipment.
- Demonstrate proper use of specialized test instruments to determine faulty analog and digital signals.
- Employ proper techniques to construct a complete printed circuit board.
- Design a comprehensive project utilizing knowledge of electronic properties.
- Make an electronic device using discrete and integrated components.
- Research and prepare an oral and written presentation on technical data for an audience.

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EET 111

DC Circuits

Hours: Class 3, Lab 3, Credit 4
Pre-requisite: ENG 100, MAT 102, RDG 100
Co-requisite: MAT 110

Course Description:
This course is a study of resistance, voltage, current, power and energy in series, parallel, and series-parallel circuits using Ohm's Law, Kirchhoff's laws, and circuit theorems. Circuits are analyzed using mathematics and verified using electrical instruments.

Course Topics:
- Simple series circuits using proper units, prefixes, and notation.
- Complex DC series circuits.
- Simple parallel DC circuits.
- Combinations DC series-parallel circuits.
- DC circuits using network theorems.
- Electromagnetic circuits.

Required Materials:
- None

Grading System:
An overall grade of C or higher is required for transferability.
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Identify and use the appropriate bench test equipment in a laboratory setting.
• Collect and organize experimental data.
• Use electronic and industrial schematics in finding solutions to given case studies, scenarios or word problems.
• Report lab data clearly and accurately.
• Construct analog and digital circuits using basic schematic diagrams.

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EET 112

AC Circuits

Hours: Class 3, Lab 3, Credit 4
Pre-requisite: EET 111
Co-requisite: MAT 110

Course Description:

This course is a study of capacitive and inductive reactance and impedance in series, parallel and series-parallel circuits. It also includes power, power-factors, resonance and transformers. Circuits are analyzed using mathematics, and verified using electrical instruments.

Course Topics:

• AC resistor circuits.
• Capacitor DC circuits
• Inductor DC circuits
• Capacitor and inductor response in AC circuits.
• RC, RL, and RLC AC circuits.
• Power utilization in AC circuits.
• Series and parallel impedance circuits.
• Transformer, resonant, and three-phase circuits.

Required Materials:

• None

Grading System:

An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:

• Recognize how experimental results relate or differ from theory.
• Demonstrate the ability to share project responsibility with other team members.
• Demonstrate professional writing skills and technical knowledge in creating technical project reports.
• Apply advanced mathematics with electronic and scientific principles in solving electronic circuit problems.
• Identify and use the appropriate bench test equipment in a laboratory setting.
• Demonstrate the ability to collaborate on a shared goal contributing to the success of the team.

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EET 113

ELECTRICAL CIRCUITS I

Hours: Class 4, Lab 0, Credit 4
Pre-requisite:
Co-requisite:

Course Description:

This course is a study of direct and alternating currents, covering resistance and impedance in series, parallel, and series-parallel circuits using Ohm's Law, Kirchhoff's laws, and basic circuit theorems. Circuits are analyzed using mathematics and verified using electrical instruments.
Course Topics:  
Required Materials:  
Grading System:  
Student Learning Outcomes:  

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EET 131  
Active Devices  
Hours: Class 3, Lab 3, Credit 4  
Pre-requisite: EET 112  
Co-requisite: None  
Course Description:  
This course is a study of semiconductor theory and principles, diodes and diode circuits,  
transistors, transistor circuits, and other components. Circuits are modeled,  
constructed, and tested.  
Course Topics:  
• Diode circuit characteristics and application.  
• Bipolar transistor circuit characteristics and applications.  
• Field-effect transistor circuit characteristics and applications.  
Required Materials:  
• None  
Grading System:  
An overall grade of C or higher is required for transferability.  
A 90 – 100  
B 80 – 89  
C 70 – 79  
D 60 – 69  
F 0 – 59  
Student Learning Outcomes:  
• Identify and use the appropriate bench test equipment in a laboratory setting.  
• Recognize how experimental results relate or differ from theory.  
• Solve engineering technology problems using practical knowledge of mathematics,  
science, engineering and technology.  
• Apply advanced mathematics with electronic and scientific principles in solving  
electronic circuit problems.  
• Demonstrate professional writing skills and technical knowledge in creating technical  
project reports.  
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EET 141  
Electronic Circuits  
Hours: Class 3, Lab 3, Credit 4  
Pre-requisite: EET 131  
Co-requisite: None  
Course Description:  
This course is a study of electronic circuits using discrete and integrated devices,  
including analysis, construction, testing and troubleshooting.  
Course Topics:  
• The construction analysis of small signal amplifiers.  
• The construction and analysis of operational amplifiers.  
• The use of various software applications in electronic circuit analysis.  
• The use of laboratory procedures to build and test various electronic circuits.  
• The analysis of laboratory results to theoretical predictions in a written report.  
Required Materials:  
None  
Grading System:  

An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:

• Construct analog and digital circuits using basic schematic diagrams.
• Collect and organize experimental data.
• Use Excel to analyze experimental data.
• Use circuit simulation software to design, test and analyze electronic circuits.
• Demonstrate time management skills, adhering to all deadlines for assignments, tests, and projects.

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EET 145
Digital Circuits

Hours: Class 3, Lab 3, Credit 4
Pre-requisite: ENG 100, MAT 102 or MAT 153, RDG 100
Co-requisite: MAT 110

Course Description:

This course is a study of number systems, basic logic gates, Boolean algebra, logic optimization, flip-flops, counters and registers. Circuits are modeled, constructed, and tested.

Course Topics:

• Converting between various number systems
• Performing arithmetic operations in binary numbers
• Writing and decipher binary codes
• Determining the function of logic gates
• Constructing and analyzing contents of truth tables
• Writing and simplifying Boolean expressions
• Defining adder and subtraction circuits
• Determining the characteristic of latches and flip-flops
• Using the logic lab trainer to build and test digital circuits
• Designing, building, and testing a digital control circuit

Required Materials:

• EET 145 laboratory book

Grading System:

An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:

• Construct analog and digital circuits using basic schematic diagrams.
• Design, troubleshoot and test electronic and industrial circuits.
• Demonstrate time management skills, adhering to all deadlines for assignments, tests, and projects.
• Critique their own performance, finding and correcting errors based upon feedback.
• Choose the appropriate solution to engineering technology problems based on given criteria.

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EET 221
BROADBAND COMMUNICATIONS SYSTEMS

Hours: Class 2, Lab 3, Credit 3
Pre-requisite: EET 145
EET 231

Industrial Electronics

Hours: Class 3, Lab 3, Credit 4
Pre-requisite: EET 141
Co-requisite: None

Course Description:

This course is a survey of topics related to industrial application of electronic devices and circuits. The course covers switches, DC and AC motor controls, sensors and transducers, open and closed loop control circuits and voltage converting interfaces. Circuits are constructed and tested.

Course Topics:

- Safety issues pertinent to industrial work environments.
- AC power application including 3-phase circuits
- Electronic components in industrial switches and control circuits.
- Feedback systems and servomechanisms in industrial control applications.
- The operation and characteristics of AC and DC machines.
- Final correcting devices and amplifiers in a closed loop system.
- Proportional, derivative and integral control in closed loop systems.
- Fiber optic transmission media and its use in industrial systems.

Required Materials:

- None

Grading System:

An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:

- Collaborate on a shared goal contributing to the success of the team.
- Share project responsibility with other team members.
- Plan, produce and orally deliver a digital presentation that utilizes graphics on a given technical topic.
- Critique own performance, finding and correcting errors based upon feedback.
- Collect and organize experimental data.

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EET 235

Programmable Controllers

Hours: Class 2, Lab 3, Credit 3
Pre-requisite: EET 112
Co-requisite: None

Course Description:

This course is a study of number systems, basic logic gates, Boolean algebra, logic optimization, flip-flops, counters and registers. Circuits are modeled, constructed, and tested.

Course Topics:
Basic relay logic diagrams
Basic PLC ladder logic diagrams.
PLC hardware, operation, and theory of use.
The design and programming of ladder logic programs.

Required Materials:
- EET 235 laboratory manual

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Design, troubleshoot and test electronic and industrial circuits.
- Use electronic and industrial schematics in finding solutions to given case studies, scenarios or word problems.
- Use programming software to code solutions for engineering technology problems.
- Choose the appropriate solution to engineering technology problems based on given criteria.
- Critique their own performance, finding and correcting errors based upon feedback.

EET 236
PLC Systems Programming

Hours: Class 2, Lab 3, Credit 3
Pre-requisite: EET 235
Co-requisite: None
Course Description:
This course covers advanced topics in programmable logic controllers (PLC) systems and programming including timing, conversions, analog operations, PID control, auxiliary commands and functions, and PLC to PLC systems communications.

Course Topics:
- Advanced PLC instructions
- Advanced PLC programming techniques
- PLC process control operation, and theory of use
- PLC to PLC systems communications

Required Materials:
None

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Use electronic and industrial schematics in finding solutions to given case studies, scenarios or word problems.
- Choose the appropriate solution to engineering technology problems based on given criteria.
- Use programming software to code solutions for engineering technology problems.
- Design, troubleshoot and test electronic and industrial circuits.
- Solve engineering technology problems using practical knowledge of mathematics, science, engineering and technology.

EET 241
ELECTRONIC COMMUNICATIONS

Hours: Class 3, Lab 3, Credit 4
Pre-requisite: EET 131
Co-requisite: None
Course Description:
This course is a study of the theory of transmitters and receivers, with an emphasis on the receivers, mixers, if amplifiers and detectors. Some basic FCC rules and regulations are also covered.

Course Topics:

Required Materials:

Grading System:

Student Learning Outcomes:

EET 273
Electronics Senior Project

Hours: Class 0, Lab 3, Credit 1
Pre-requisite: EET 141
Co-requisite: None
Course Description:
This course includes the construction and testing of an instructor-approved project.

Course Topics:

Required Materials:

Grading System:
An overall grade of C or higher is required for transferability.

A 90 - 100
B 80 - 89
C 70 - 79
D 60 - 69
F 0 - 59

Student Learning Outcomes:

EGR 104
Engineering Technology Foundations

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 032, MAT 032, RDG 032
Co-requisite: MAT 102
Course Description:
This problem-based course introduces the student to fundamental concepts of electrical, mechanical, thermal, fluids, optical, and material systems related to engineering technology. Workplace readiness skills such as laboratory safety, communications, and teamwork are integrated into the course.

Course Topics:

The development of Engineering and Technology through history
• The varied career choices in engineering technology
• Problem solving techniques and other tools used in engineering technology
• Calculator usage to solve algebraic equations and conversions
• Knowledge of electronics industry vocabulary
• Good study habits
• The value of a resume and good career search skills
• The importance of social and ethical responsibility in the technology industry
• The biography of an electronics contributor and give an oral presentation

Required Materials:
None

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
• Show knowledge of the steps to successful problem solving.
• Recognize and explain the role, responsibility, duties, work environment and educational requirements of an Electronic Engineering Technician.
• Recognize the educational and career opportunities that exist beyond the current curriculum of study.
• List the technicians code of ethics.
• Recognize the importance of ethical behavior in the technology field.
• Explain the importance of diversity in the technology field.

EGR 112
Engineering Programming

Hours: Class 2, Lab 3, Credit 3
Pre-requisite: ENG 032, MAT 032, RDG 032
Co-requisite: MAT 102

Course Description:
This course covers interactive computing and the basic concepts of programming.

Course Topics:
• The effects of computing on today's society.
• A working knowledge of a computer system.
• Disk and file management using operating system commands.
• Document creation using a word processing application.
• Data analysis using a spreadsheet application.
• An oral presentation using presentation software.
• Basic search operations on the INTERNET.
• Programming functions in a high level programming language

Required Materials:
• USB flash drive

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
• Use Excel to analyze experimental data
• Plan, produce and orally deliver a digital presentation that utilizes graphics on a given technical topic.
• Demonstrate time management skills, adhering to all deadlines for assignments, tests, and projects.
EGR 140
Collaborative Product Development

Hours: Class 1, Lab 6, Credit 3
Pre-requisite: AMT 106, IMT 112, and IMT 171 or IMT 102
Co-requisite: None

Course Description:
This course provides insight into nonlinear product design processes in which all the people necessary to produce a product work together as a team.

Course Topics:
- Team work
- Safety
- Product development
- Design

Required Materials:
- Safety glasses
- Calculator
- 3 ring notebook
- Tape measure

Grading System:
An overall grade of C or higher is required for transferability.
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:

EGR 269
Engineering Disciplines and Skills

Hours: Class 1, Lab 3, Credit 2
Pre-requisite: MAT 110
Co-requisite: None

Course Description:
This course assists students in selecting an engineering field while studying professionalism, ethics, safety, communications, and career planning. Computers are used to study spreadsheets, obtain graphical solutions to problems, perform on-line tasks, and work on a team design project and report.

Course Topics:
- Various engineering disciplines and engineering major.
- Project work in the form of a written report.
- Estimation techniques to engineering problems:
- Data collection and analysis for simple engineering experiments.
- Microsoft Excel to analyze engineering data
- Commonly used engineering units both SI and US customary systems.

Required Materials:
- Engineering calculator
  (No, you may not use your cell phone as a calculator on tests and exams)

Grading System:
An overall grade of C or higher is required for transferability.
EGR 270
Introduction to Engineering

Hours: Class 2, Lab 3, Credit 3
Pre-requisite: EGR 269
Co-requisite: None

Course Description:
This course covers the applications of computers in engineering practices, including the use of an appropriate operating system, programming in a high level language, spreadsheets, and word processing applications.

Course Topics:
- Algorithms to aid in the analysis of an engineering task.
- MATLAB programming basics.
- Test computer solutions using exact calculations.
- Complete an engineering project using MATLAB.

Required Materials:
- Engineering calculator (No, you may not use your cell phone as a calculator on tests and exams)

Grading System:
An overall grade of C or higher is required for transferability.

EGT 102
Technical Drawing

Hours: Class 2, Lab 0, Credit 2
Pre-requisite: Prerequisites _ MAT 032, RDG 032, ENG 032
Co-requisite: None

Course Description:
This course covers the application of drawing equipment and drawing techniques in the preparation of multiview orthographic, pictorial, working and/or assembly drawings. Basic methods for dimensioning, tolerancing, sectioning and fit of mating parts as performed in industrial fabrication and assembly practices are included.
Course Topics:
- Major components of CAD system
- Draw commands in both Metric and Imperial systems
- Orthographic Projection

Required Materials:
- 1 Portable Storage mediums (USB drives)

Grading System:
An overall grade of C or higher is required for transferability.
- A 90 – 100
- B 80 – 89
- C 70 – 79
- D 60 – 69
- F 0 – 59

Student Learning Outcomes:
- Demonstrate a working knowledge of Orthographic Projection using CAD software.
- Create an Isometric Projection using CAD software.
- Establish an appropriate computer aided drafting environment in both metric and imperial scale.
- Create various types of Sectional Views in a CAD environment.
- Dimension an Orthographic Projection using proper dimensioning techniques.

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EGT 104
Print Reading

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: None
Co-requisite: None

Course Description:
This course covers the interpretation of industrial drawings.

Course Topics:
- Blueprint Interpretation
- Blueprint Symbols
- Blueprint Dimensioning Plans
- Blueprint Views and Planes

Required Materials:
- Scientific Calculator (TI-30XA)

Grading System:
An overall grade of C or higher is required for transferability.
- A 90 – 100
- B 80 – 89
- C 70 – 79
- D 60 – 69
- F 0 – 59

Student Learning Outcomes:
- Identify and explain the use of various lines on industrial blueprints.
- Interpret one-, two-, and three-view orthographic drawings drawn in third angle projection.
- Interpret and explain various dimensions, tolerances, screw threads, and notes used on industrial drawings.
- Solve problems by interpretation and making calculations on industrial blueprints.
- Interpret various types of sectional views utilized on industrial blueprints.

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EGT 108
Advanced Print Reading and Sketchings
EGT 110
ENGINEERING GRAPHICS I
Hours: Class 1, Lab 9, Credit 4
Pre-requisite: MAT 032, RDG 032, ENG 032
Co-requisite:
Course Description:
This is an introductory course in engineering graphics science which includes beginning drawing techniques and development of skills to produce basic technical drawings.
Course Topics:
Required Materials:
Grading System:
Student Learning Outcomes:
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EGT 123
Industrial Print Reading
Hours: Class 1, Lab 3, Credit 2
Pre-requisite:
Co-requisite: None
Course Description:
This course covers basic print reading and sketching for the industrial trades area. Sketching of geometric shapes and interpretation of working shop drawings are also included.
Course Topics:
Required Materials:
Drawing Kit
• #2 pencil with eraser
• 6-inch scale
• calculator
• 3 ring notebook

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
• Identify views, dimensions, tolerances and translate title block information.
• Compute lengths, widths, heights, differences, products and sums using standard and metric dimensions.
• Read and interpret one-, two-, and three-view drawings.
• Identify the different types of lines used on mechanical drawings.
• Identify and dimension on the following scales:
• Detail the arrangement of three-view drawings.
• Place required dimensions correctly on a three-view drawing, and observe correct methods of tolerances and specifying threads.
• Sketch three-view drawings using horizontal, vertical, and slant lines, including irregular shapes and curves.
• Identify orthographic views and prepare sketches which properly agree and evaluate the uses of the American National Standard Geometric characteristics symbols for engineering drawing.

EGT 150
BASIC CAD

Hours: Class 0, Lab 6, Credit 2
Pre-requisite: MAT 032, RDG 032, ENG 032
Co-requisite: None

Course Description:
This course covers the basics of computer aided drafting, including hardware, software systems, and operating systems and development of skills for creating and plotting simple technical drawings.

Course Topics:
Required Materials:
Grading System:
Student Learning Outcomes:

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EGT 151
Introduction to CAD

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: MAT 032, RDG 032, ENG 032
Co-requisite: None

Course Description:
This course covers the operation of a computer aided drafting system. The course includes interaction with a cad station to produce technical drawings.

Course Topics:
• The major components of CAD system
• DRAW function to produce a drawing
• EDIT commands to modify graphic input
• Format commands to setup a drawing
• LAYER functions to establish drawing control
• DISPLAY commands to view object
• PLOT function to make hardcopy of a drawing

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Required Materials:
- 2 Portable Storage mediums (USB drives)
- Grading System:
  An overall grade of C or higher is required for transferability.
  
  A 90 – 100
  B 80 – 89
  C 70 – 79
  D 60 – 69
  F 0 – 59

Student Learning Outcomes:
- Use absolute, relative, and polar concepts in a CAD environment.
- Format CAD drawing using correct parameters.
- Create title blocks for CAD drawings.
- Use computer aided design software to develop schematics for electronic systems.
- Choose the appropriate solution to engineering technology problems based on given criteria.

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EGT 152
Fundamentals of CAD
Hours: Class 3, Lab 0, Credit 3
Pre-requisite: None
Co-requisite: EGT 108
Course Description:
This course includes a related series of problems and exercises utilizing the computer graphics station as a drafting tool.

Course Topics:
- Basic AutoCad Functions
- Creating 2-D AutoCad Drawings
- Dimensioning Autocad Drawings

Required Materials:
- Scientific Calculator (TI-30XA)
- USB Drive

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Identify the major components of a CAD system.
- Perform basic AutoCad functions in creating 2D drawings in CAD.
- Create working 2D drawings.
- Dimension a drawing using current drafting standards.
- Produce a drawing hard copy from AutoCAD.

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EGT 155
Intermediate CAD
Hours: Class 1, Lab 3, Credit 2
Pre-requisite: EGT 150 or EGT 151
Co-requisite: None
Course Description:
This course covers advanced computer aided drafting skills, including topics such as creating isometrics and script files and customizing menus, text fonts, and hatch fonts to produce advanced drawings.

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Course Topics:
- Drafting Environment
- Dimensioning an object
- Print drawings in Lay Out or Paper Space
- Draw an Isometric figure
- Make a block, manipulate a WBlock

Required Materials:
- 1 Portable Storage mediums (USB drives)

Grading System:
An overall grade of C or higher is required for transferability.
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Create hard copies using paper space.
- Demonstrate a knowledge of Block with Attributes.
- Extract Attributes from a drawing.
- Export a drawing outside a CADD environment through the use of Power Point and PDF's
- Create a block and a wblock.
CAD/CAM Applications

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: EGT 245
Co-requisite: None
Course Description:

This course includes applications using cad/cam routines.

Course Topics:
- CAD/CAM Conversion
- Solid Modeling
- Reverse Engineering Techniques

Required Materials:
- Clear Safety Glasses
- Scientific Calculator (TI-30XA)
- USB Drive

Grading System:

An overall grade of C or higher is required for transferability.

A 90 - 100
B 80 - 89
C 70 - 79
D 60 - 69
F 0 - 59

Student Learning Outcomes:

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EMS 105

Emergency Medical Care I

Hours: Class 2, Lab 6, Credit 4
Pre-requisite:
Co-requisite:
Course Description:

This course is a study of preparatory and pharmacology, airway management, patient assessment, and trauma and shock as it relates to the provision of pre-hospital emergency medical care to critically ill and injured patients.

Course Topics:
- Preparatory
  - EMS Systems
  - Research
  - Workforce safety and wellness
  - Documentation
  - Report and document assessment data and interventions.
- EMS system communication
- Therapeutic communication
- Medical/legal & ethical
- Anatomy & physiology
- Medical terminology
- Pathophysiology
- Life span development
- Public health
- Pharmacology
- Airway Management
  - Airway patency
  - Nasopharyngeal airway
  - Oropharyngeal airway
  - Positive pressure ventilation
  - Manually-triggered ventilators
  - Automatic transport ventilators
  - Supplemental oxygen therapy
  - Humidifiers
  - Partial-rebreather mask
• Venturi mask
• Supraglottic airway devices

• Cardiopulmonary Resuscitation
• One and two rescuer adult CPR
• One and two rescuer child CPR
• One and two rescuer infant CPR
• Automated External Defibrillator use
• First aid for choking victims

• Patient Assessment
• Scene size up
• Primary assessment
• History Taking
• Secondary Assessment
• Monitoring devices
• Reassessment

• Trauma
• Trauma overview and kinematics
• Bleeding
• Chest trauma
• Abdominal and genitourinary trauma
• Orthopedic trauma
• Soft tissue trauma
• Burns
• Head, facial, neck and spine trauma
• Nervous system trauma
• Special considerations in trauma
• Environmental emergencies
• Multi-system trauma

Required Materials:
Pocket mask with one-way valve and oxygen port

Grading System:
An overall grade of C or higher is required for transferability.
A 93-100
B 85-92
C 78-84
D 71-77
F 0-70

Student Learning Outcomes:
• Apply fundamental knowledge of the EMS system, safety/well-being of the EMT, medical/legal and ethical issues to the provision of emergency care.
• Demonstrate knowledge of the anatomy and function of all human systems to the practice of EMS.
• Integrate anatomical and medical terms and abbreviations in written and oral communication with colleagues and other health care professionals.
• Apply the pathophysiology of respiration and perfusion to patient assessment and management.
• Relate life span development to patient assessment and management.
• Apply the principles of illness and injury prevention in emergency care.
• Administer medications to a patient during an emergency.
• Manage a patient's airway to ensure patency, adequate mechanical ventilation and respiration for patients of all ages.
• Analyze scene information and patient assessment findings (scene size up, primary and secondary assessment, patient history, and reassessment) to guide emergency management.
• Apply fundamental knowledge to provide basic emergency care and transportation based on assessment findings for an acutely injured patient.

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EMS 106
Emergency Medical Care II
Hours: Class 2, Lab 6, Credit 4
Pre-requisite: Successful completion of EMS 105
Co-requisite:

Course Description:

This course is a study of medical emergencies, operations, pediatrics and other special populations as it relates to the provision of pre-hospital emergency medical care to critically ill and injured patients.

Course Topics:

- Medical
  - Medical overview
  - Neurology
  - Abdominal and gastrointestinal disorders
  - Immunology
  - Infectious diseases
  - Endocrine disorders
  - Psychiatric
  - Cardiovascular
  - Toxicology
  - Respiratory
  - Hematology
  - Genitourinary/renal disorders
  - Gynecology
  - Non-traumatic musculoskeletal disorders
  - Diseases of the eyes, ears, nose and throat

- Special populations
  - Obstetrics
  - Neonatal care
  - Pediatrics
  - Geriatrics
  - Patients with special challenges

- Operations
  - Principles of safely operating a ground ambulance
  - Incident management
  - Multiple casualty incidents
  - Air medical
  - Vehicle extrication
  - Hazardous materials awareness
  - Mass casualty incidents due to terrorism and disaster

Required Materials:

- Pocket mask with one-way valve and oxygen port

Grading System:

An overall grade of C or higher is required for transferability.

A 94-100
B 87-93
C 80-86
D 73-79
F 0-72

Student Learning Outcomes:

- Apply fundamental knowledge of medical emergencies, special patient populations and EMS operations to the provision of emergency care.
- Apply knowledge of growth, development, and aging and assessment findings to provide basic emergency care and transportation for a patient with special needs.
- Integrate knowledge of operational roles and responsibilities to ensure safe patient, public, and personnel safety.
- Integrate attributes of professional behavior including, but not limited to, integrity, empathy, self-motivation, appearance/personal hygiene, self-confidence, communications, time management, teamwork/diplomacy, respect, patient advocacy, and careful delivery of service into all aspects of patient care.
- Administer medications to a patient during an emergency.

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Emergency Medical Services Operations

Hours: Class 1, Lab 3, Credit 2
Pre-requisite: Successful completion of prior program requirements.
Co-requisite: EMS 270 and EMS 272.

Course Description:
This course is a multi-faceted approach to theory of EMS operations. Topics include expanded provider roles, EMS systems overview, medical/legal aspects, theory of ambulance operations, mass casualty incident management, rescue awareness, crime scenes, terrorism, and weapons of mass destruction.

Course Topics:
- Principles of safely operating a ground ambulance
- Incident management
- Multiple casualty incidents
- Air medical
- Vehicle extrication
- Hazardous materials awareness
- Mass casualty incidents due to terrorism and disaster

Required Materials:
None

Grading System:
An overall grade of C or higher is required for transferability.
A 93-100
B 85-92
C 78-84
D 71-77
F 0-70

Student Learning Outcomes:
- Describe risks and responsibilities of emergency response.
- Construct a working plan to establish and work within the incident management system.
- Use triage principles to categorize acutely traumatized patients with varying injuries and of varying acuity levels.
- Prioritize resources for effective on-scene management.
- Justify and defend criteria for utilizing air medical response.
- Describe safe air medical operations.
- Explain establishment of a proper air medical landing zone.
- Discuss principles of safe vehicle extrication.
- Predict the need for, and discuss the use of simple hand tools.
- Describe risks and responsibilities of operating in a cold zone at a hazardous material or other special incident.
- Describe risks and responsibilities of operating on the scene of a natural or man-made disaster.

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EMS 150
Introduction to Advanced Care

Hours: Class 2, Lab 9, Credit 5
Pre-requisite: Successful completion of prior program requirements.
Co-requisite: EMS 151

Course Description:
This course covers advanced care preparatory material, trauma, advanced airway material, and shock management.

Course Topics:
- Preparatory
  - EMS Systems
  - Research
  - Workforce safety and wellness
  - Documentation
  - EMS system communication
- Therapeutic communication
- Medical/legal & ethical issues
- Principles of pharmacology
- Medication administration
- Emergency medications

- Airway management
- Respiration
- Artificial ventilation

- Patient Assessment
  - Scene size up
  - Primary assessment
  - History taking
  - Secondary assessment
  - Monitoring devices
  - Reassessment

- Trauma
  - Trauma overview and kinematics
  - Bleeding
  - Chest trauma
  - Abdominal and genitourinary trauma
  - Orthopedic trauma
  - Soft tissue trauma
  - Burns
  - Head, facial, neck and spine trauma
  - Nervous system trauma
  - Special considerations in trauma
  - Environmental emergencies
  - Multi-system trauma

Required Materials:
- Paramedic Clinical & Internship Manual
- EMS 151 Paramedic Clinical I Competency Logs

Grading System:
An overall grade of C or higher is required for transferability.

A 93-100
B 85-92
C 78-84
D 71-77
F 0-70

Student Learning Outcomes:
- Demonstrate knowledge of the anatomy and function of all human systems to the practice of EMS.
- Integrate anatomical and medical terms and abbreviations in written and oral communication with colleagues and other health care professionals.
- Apply the pathophysiology of respiration and perfusion to patient assessment and management.
- Relate life span development to patient assessment and management.
- Apply the principles of illness and injury prevention in emergency care.
- Administer medications to a patient during an emergency.
- Manage a patient's airway to ensure patency, adequate mechanical ventilation and respiration for patients of all ages.
- Analyze scene information and patient assessment findings (scene size up, primary and secondary assessment, patient history, and reassessment) to guide emergency management.
- Develop a list of differential diagnoses through clinical reasoning to modify a patient assessment and formulate a treatment plan.
- Provide basic emergency care and transportation based on assessment findings for an acutely injured patient.

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EMS 151
Paramedic Clinical I
EMS 221
Paramedic Internship II

Hours: Class 0, Lab 9, Credit 3
Pre-requisite: Successful completion of prior program requirements.
Co-requisite: EMS 240 and EMS 241.
Course Description:

This course provides an introduction to hospital care in an emergency and trauma setting. Emphasis is placed on care for adult, obstetrical, pediatric, and behavioral patients.

Course Topics:
- Scene safety
- Patient complaints
- Patient assessment
- Therapeutic communication and cultural competency
- Decision making
- Psychomotor skills
- Record keeping
- Professionalism
- Practical application of principles of emergency care as a team member

Required Materials:
- Clinical Manual
- EMS 151 Paramedic Clinical I Competency Logs

Grading System:
An overall grade of C or higher is required for transferability.
A 94-100
B 87-93
C 80-86
D 73-79
F 0-72

Student Learning Outcomes:
- Integrate basic principles of operational roles and responsibilities to ensure safe patient, public, and personnel safety.
- Demonstrate completion of a comprehensive history and physical examination to identify factors affecting the health and health needs of a patient.
- Relate assessment findings to underlying pathological and physiological changes in the patient's condition.
- Report and document assessment findings and interventions.
- Perform basic and advanced interventions as part of a treatment plan intended to mitigate the emergency, provide symptom relief, and improve the overall health of the patient.
- Demonstrate safe and effective performance of airway management.
- Demonstrate safe and effective performance of venipuncture to include intravenous access, blood draws and fingersticks.
- Calculate proper medication dosages for patient administration in a clinical setting.
- Demonstrate safe and effective performance of intramuscular and subcutaneous injections.
- Provide basic and advanced emergency care as a team member in a controlled clinical environment with more experienced personnel in the lead role.
- Express attributes of exemplary professional behavior including, but not limited to, integrity, empathy, self-motivation, appearance/personal hygiene, self-confidence, communications, time management, teamwork/diplomacy, respect, patient advocacy, and careful delivery of service.

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This course builds on the experiences gained in Paramedic Internship I. Focus is on the student and their ability to apply knowledge gained in the classroom during an emergency situation while treating a wide variety of patients in different situations.

**Course Topics:**
- Practical application of principles of emergency care as a team member on a 911 emergency ambulance
- Assessment
- Therapeutic communication and cultural competency
- Psychomotor skills
- Professionalism
- Decision making
- Record keeping
- Patient complaints
- Scene leadership
- Scene safety

**Required Materials:**
- Paramedic Internship and Clinical Manual
- EMS 221 Internship II Clinical Competency Logs
- Stethoscope

**Grading System:**
An overall grade of C or higher is required for transferability.

A 94-100  
B 87-93  
C 80-86  
D 73-79  
F 0-72

**Student Learning Outcomes:**
- Apply principles of safety to ensure the safety of the rescuer and others during an emergency.
- Demonstrate completion of a comprehensive history and physical examination to identify factors affecting the health and health needs of a patient.
- Formulate a field impression based on an analysis of comprehensive assessment findings, anatomy, physiology, pathophysiology, and epidemiology.
- Relate assessment findings to underlying pathological and physiological changes in the patient's condition.
- Integrate patient assessments to formulate a treatment and disposition plan for patients with a variety of medical and traumatic complaints of varying acuity levels.
- Perform basic and advanced interventions as part of a treatment plan intended to mitigate the emergency, provide symptom relief, and improve the overall health of the patient.
- Evaluate the effectiveness of interventions and modifies treatment plan accordingly.
- Integrate and synthesize the multiple determinants of health and clinical care.
- Perform health screenings and referrals.
- Demonstrate safe and effective performance of all psychomotor skills within the National EMS Scope of Practice Model and state Scope of Practice at the paramedic level.
- Express attributes of exemplary professional behavior including, but not limited to, integrity, empathy, self-motivation, appearance/personal hygiene, self-confidence, communications, time management, teamwork/diplomacy, respect, patient advocacy, and careful delivery of service.
- Report and document assessment findings and interventions.
- Assemble and report data to be used for epidemiological and research purposes.

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**EMS 230**

**Advanced Emergency Medical Care I**
Hours: Class 2, Lab 9, Credit 5
Pre-requisite: Successful completion of prior program requirements.
Co-requisite: EMS 231 and EMS 232

Course Description:
This course provides an introduction to pre-hospital pharmacology and cardiology as they relate specifically to patient care. Emphasis is placed on the appropriate methods for patient physical exams and solicitation of medical history to maximize patient outcomes.

Course Topics:
- Preparatory
  - Principles of Pharmacology
  - Medication Administration
  - Emergency Medications
- Medical
  - Cardiovascular
  - Anatomy of the CV System
- Physiology
- Electrophysiology
- Epidemiology
- Primary survey for CV assessment
- Secondary survey for CV assessment
- ECG monitoring to include arrhythmia recognition
- Management of a patient with a cardiac arrhythmia
- Causes, differential diagnoses, and assessment findings for a patient with a variety of cardiovascular disorders
- Development and execution a treatment plan for a patient with a variety of cardiovascular disorders

Required Materials:
- ECG Calipers

Grading System:
An overall grade of C or higher is required for transferability.
A 93-100
B 85-92
C 78-84
D 71-77
F 0-70

Student Learning Outcomes:
- Integrate pathophysiological principles of pharmacology and the assessment findings to formulate a field impression and implement a pharmacologic management plan.
- Calculate precise drug dosages.
- Demonstrate safe medication administration by a variety of enteral and parenteral routes.
- Apply principles of electrocardiography and criteria for cardiac rhythm interpretation to identify basic cardiac dysrhythmias originating in the sinoatrial node, atria, AV junction and ventricles.
- Apply principles of electrocardiography to identify ischemia, ST segment elevation and myocardial injury location on a multi-lead electrocardiogram.
- Apply fundamental knowledge to provide basic and advanced emergency care based on assessment findings for an acutely ill cardiovascular patient.
- Apply the general concepts of pathophysiology for the assessment and management of emergency patients with cardiovascular complaints.
- Integrate concepts of assessment, pharmacology and electrocardiography to formulate a treatment and transport plan for a patient with a cardiovascular emergency.
- Demonstrate integration of assessment, pharmacology and electrocardiography by leading a resuscitation team in the management of a cardiac arrest.
- Demonstrate professional behavior including, but not limited to, integrity, empathy, self-motivation, appearance/personal hygiene, self-confidence, communications, time management, teamwork/diplomacy, respect, patient advocacy, and careful delivery of service.

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EMS 231
Paramedic Clinical II

Hours: Class 0, Lab 6, Credit 2
Pre-requisite: Successful completion of prior program requirements.
Co-requisite: EMS 230 and EMS 232

Course Description:
This course provides application of the knowledge and skills learned in the classroom to patients in the emergency department setting and in other appropriate clinical facilities.

Course Topics:
- Scene safety
- Patient complaints
- Patient assessment
- Therapeutic communication and cultural competency
- Decision making
- Psychomotor skills
- Record keeping
- Professionalism
- Practical application of principles of emergency care as a team member

Required Materials:
- Paramedic Clinical and Internship Manual
- Clinical packet for Paramedic Clinical and Internship Manual
- EMS 231 Paramedic Competency Logs
- SCC Paramedic Student Uniform
- SCC Photo Identification
- Stethoscope

Grading System:
An overall grade of C or higher is required for transferability.

A 94-100
B 87-93
C 80-86
D 73-79
F 0-72

Student Learning Outcomes:
- Integrate knowledge of operational roles and responsibilities to ensure safe patient, public, and personnel safety.
- Demonstrate completion of a comprehensive history and physical examination to identify factors affecting the health and health needs of a patient.
- Relate assessment findings to underlying pathological and physiological changes in the patient's condition.
- Perform basic and advanced interventions as part of a treatment plan intended to mitigate the emergency, provide symptom relief, and improve the overall health of the patient.
- Demonstrate safe and effective performance of all psychomotor skills within the National EMS Scope of Practice Model and state Scope of Practice at the paramedic level.
- Apply comprehensive knowledge to provide basic and advanced emergency care as a team member in a controlled clinical environment with more experienced personnel in the lead role.
- Report and document assessment findings and interventions.
- Express attributes of exemplary professional behavior including, but not limited to, integrity, empathy, self-motivation, appearance/personal hygiene, self-confidence, communications, time management, teamwork/diplomacy, respect, patient advocacy, and careful delivery of service.
- Assemble and report data to be used for epidemiological and research purposes.

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EMS 232
Paramedic Internship I
Hours: Class 0, Lab 6, Credit 2

Prerequisite: Successful completion of prior program requirements.
Co-requisite: EMS 230 and EMS 231

Course Description:

This course provides application of the knowledge and skills learned in the classroom using the team approach to emergency medical patients in the pre-hospital environment.

Course Topics:

- Practical application of principles of emergency care as a team member on a 911 emergency ambulance
- Assessment
- Therapeutic communication and cultural competency
- Psychomotor skills
- Professionalism
- Decision making
- Record keeping
- Patient complaints
- Scene leadership
- Scene safety

Required Materials:

- Paramedic Internship and Clinical Manual
- Internship packet for Paramedic Clinical and Internship Manual
- EMS 232 Paramedic Internship I Competency Logs
- Stethoscope

Grading System:

An overall grade of C or higher is required for transferability.

A 94-100
B 87-93
C 80-86
D 73-79
F 0-72

Student Learning Outcomes:

- Apply principles of safety to ensure the safety of the rescuer and others to during an emergency.
- Demonstrate completion of a comprehensive history and physical examination to identify factors affecting the health and health needs of a patient.
- Formulate a field impression based on an analysis of comprehensive assessment findings, anatomy, physiology, pathophysiology, and epidemiology.
- Relate assessment findings to underlying pathological and physiological changes in the patient's condition.
- Integrate patient assessments to formulate a treatment and disposition plan for patients with a variety of medical and traumatic complaints of varying acuity levels.
- Perform basic and advanced interventions as part of a treatment plan intended to mitigate the emergency, provide symptom relief, and improve the overall health of the patient.
- Evaluate the effectiveness of interventions and modifies treatment plan accordingly.
- Integrate and synthesize the multiple determinants of health and clinical care.
- Perform health screenings and referrals.
- Demonstrate safe and effective performance of all psychomotor skills within the National EMS Scope of Practice Model and state Scope of Practice at the paramedic level.
- Express attributes of exemplary professional behavior including, but not limited to, integrity, empathy, self-motivation, appearance/personal hygiene, self-confidence, communications, time management, teamwork/diplomacy, respect, patient advocacy, and careful delivery of service.
- Report and document assessment findings and interventions.
- Assemble and report data to be used for epidemiological and research purposes.
EMS 240

Advanced Emergency Medical Care II

Hours: Class 2, Lab 9, Credit 5

Pre-requisite: Successful completion of prior program requirements.

Co-requisite: EMS 221 and EMS 241

Course Description:

This course is a study of complex recurring emergency medical conditions that encompass all stages of the patient’s life span.

Course Topics:

- Medical
  - Medical overview
  - Neurology
  - Abdominal and gastrointestinal disorders
  - Immunology
  - Infectious diseases
  - Endocrine disorders
  - Psychiatric
  - Cardiovascular
  - Toxicology
  - Respiratory
  - Hematology
  - Genitourinary/renal disorders
  - Gynecology
  - Non-traumatic musculoskeletal disorders
  - Diseases of the eyes, ears, nose and throat

- Special populations
  - Obstetrics
  - Neonatal care
  - Pediatrics
  - Geriatrics
  - Patients with special challenges

- Operations
  - Principles of safely operating a ground ambulance
  - Incident management
  - Multiple casualty incidents
  - Air medical
  - Vehicle extrication
  - Hazardous materials awareness
  - Mass casualty incidents due to terrorism and disaster

Required Materials:

- Pocket mask with one-way valve and oxygen port

Grading System:

An overall grade of C or higher is required for transferability.

A 93-100
B 85-92
C 78-84
D 71-77
F 0-70

Student Learning Outcomes:

- Integrate assessment findings with principles of epidemiology and pathophysiology to formulate a field impression and implement a comprehensive treatment/disposition plan for a patient with a medical complaint.
- Integrate assessment findings with principles of pathophysiology and knowledge of psychosocial needs to formulate a field impression and implement a comprehensive treatment/disposition plan for patients with special needs.
- Integrate scene and patient assessment findings with knowledge of epidemiology and pathophysiology to form a field impression.
Develop a list of differential diagnoses through clinical reasoning to modify patient assessment and formulate a treatment plan.

Integrate knowledge of operational roles and responsibilities to ensure safe patient, public, and personnel safety.

Demonstrate professional behavior including, but not limited to, integrity, empathy, self-motivation, appearance/personal hygiene, self-confidence, communications, time management, teamwork/diplomacy, respect, patient advocacy, and careful delivery of service.

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EMS 241
Paramedic Clinical III

Hours: Class 0, Lab 6, Credit 2

Pre-requisite: Successful completion of prior program requirements.

Co-requisite: EMS 221 and EMS 240

Course Description:

This course is an advanced clinical experience and provides an overview of holistic patient care from the point of entry into the emergency department until patient discharge.

Course Topics:

- Scene safety
- Patient complaints
- Patient assessment
- Therapeutic communication and cultural competency
- Decision making
- Psychomotor skills
- Record keeping
- Professionalism
- Practical application of principles of emergency care as a team member

Required Materials:

- Clinical Manual
- EMS 221 Competency Logs
- Stethoscope

Grading System:

An overall grade of C or higher is required for transferability.

A 94-100
B 87-93
C 80-86
D 73-79
F 0-72

Student Learning Outcomes:

- Integrate knowledge of operational roles and responsibilities to ensure safe patient, public, and personnel safety.
- Demonstrate completion of a comprehensive history and physical examination to identify factors affecting the health and health needs of a patient.
- Relate assessment findings to underlying pathological and physiological changes in the patient's condition.
- Perform basic and advanced interventions as part of a treatment plan intended to mitigate the emergency, provide symptom relief, and improve the overall health of the patient.
- Demonstrate safe and effective performance of all psychomotor skills within the National EMS Scope of Practice Model and state Scope of Practice at the paramedic level.
- Apply comprehensive knowledge to provide basic and advanced emergency care as a team member in a controlled clinical environment with more experienced personnel in the lead role.
- Report and document assessment findings and interventions.
- Express attributes of exemplary professional behavior including, but not limited to, integrity, empathy, self-motivation, appearance/personal hygiene, self-confidence, communications, time management, teamwork/diplomacy, respect, patient advocacy, and careful delivery of service.
Assemble and report data to be used for epidemiological and research purposes.

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EMS 270

NREMT Review

Hours: Class 2, Lab 6, Credit 4
Pre-requisite: Successful completion of prior program requirements.
Co-requisite: EMS 119 and EMS 272
Course Description:

This course provides the opportunity to practice and demonstrate proficiency in all of the required National Registry of Emergency Medical Technician (NREMT) skill stations.

Course Topics:

- Review of cognitive material required of an entry-level paramedic
- Psychomotor skills
- Professionalism

Required Materials:

None

Grading System:

An overall grade of C or higher is required for transferability.

A 93-100
B 85-92
C 78-84
D 71-77
F 0-70

Student Learning Outcomes:

- Demonstrate cognitive knowledge consistent with that of an entry-level paramedic.
- Demonstrate effective performance of all psychomotor skills within the National EMS Scope of Practice Model and state Scope of Practice at the paramedic level.
- Demonstrate effective initiation of intravenous and intraosseous access and, administration of various parenteral medications via intravenous and intraosseous access.
- Demonstrate establishment and/or maintenance of a patent airway, oxygenation, and ventilation of a patient.
- Integrate scene findings and clinical reasoning to perform an effective assessment and field management plan of a patient with a medical illness or traumatic injury.
- Demonstrate assessment and management of a patient in shock and a seated or supine patient with spinal injury.
- Demonstrate professional behavior including, but not limited to, integrity, empathy, self-motivation, appearance/personal hygiene, self-confidence, communications, time management, teamwork/diplomacy, respect, patient advocacy, and careful delivery of service.

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EMS 272

Paramedic Capstone

Hours: Class 0, Lab 12, Credit 4
Pre-requisite: Successful completion of prior program requirements.
Co-requisite: EMS 119 and EMS 270
Course Description:

This course provides the opportunity for the student to function as a team leader in a 911 response agency by managing and accounting for all aspects of the emergency scene and patient care.

Course Topics:

- Scene safety
Therapeutic communication and cultural competency
Patient complaints
Assessment
Psychomotor skills
Professionalism
Decision making
Practical application of emergency care principles as a team member on a 911 emergency ambulance
Scene leadership
Record keeping

Required Materials:
- EMS 272 Paramedic Capstone Competency Logs
- Paramedic Clinical & Internship Manual
- Stethoscope

Grading System:
An overall grade of C or higher is required for transferability.
A 94-100
B 87-93
C 80-86
D 73-79
F 0-72

Student Learning Outcomes:
- Apply principles of safety to ensure the safety of the rescuer and others during an emergency.
- Demonstrate completion of a comprehensive history and physical examination to identify factors affecting the health and health needs of a patient.
- Formulate a field impression based on an analysis of comprehensive assessment findings, anatomy, physiology, pathophysiology, and epidemiology.
- Relate assessment findings to underlying pathological and physiological changes in the patient’s condition.
- Integrate patient assessments to formulate a treatment and disposition plan for patients with a variety of medical and traumatic complaints of varying acuity levels.
- Perform basic and advanced interventions as part of a treatment plan intended to mitigate the emergency, provide symptom relief, and improve the overall health of the patient.
- Evaluate the effectiveness of interventions and modify treatment plan accordingly.
- Integrate and synthesize the multiple determinants of health and clinical care.
- Demonstrate safe and effective performance of all psychomotor skills within the National EMS Scope of Practice Model and state Scope of Practice at the paramedic level.
- Express attributes of exemplary professional behavior including, but not limited to, integrity, empathy, self-motivation, appearance/personal hygiene, self-confidence, communications, time management, teamwork/diplomacy, respect, patient advocacy, and careful delivery of service.
- Perform health screenings and referrals.
- Report and document assessment findings and interventions.
- Assemble and report data to be used for epidemiological and research purposes.

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ENG 031
Developmental English

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: None
Co-requisite: ENG 032
Course Description:
Developmental English Basics is intended for students who need assistance with basic writing skills. Based on assessment of students’ needs,
instruction includes basic grammar and usage, mechanics, sentence structure, and basic writing. Assignments will include the writing of a variety of unified and coherent compositions with evidence of a controlling idea, introduction, body, and conclusion.

Course Topics:
- Composition
- Sentence structure
- Grammar and usage
- Mechanics

Required Materials:
- Notebook
- Divider sheets
- Notebook paper
- Pens and pencils
- Highlighter
- Small stapler
- Note cards (optional)
- Disk or USB drive for writing assignments

Grading System:
A 93 – 100
B 85 – 92
C 75 – 84
F 0 – 74

Student Learning Outcomes:
- Compose an email appropriate for an academic or business setting, applying the writing process.
- Develop a business writing style, using appropriate language and style.
- Demonstrate an understanding of basic grammar rules and mechanics incorporating simple and compound sentences in writing.
- Identify and label the eight parts of speech.
- Construct an e-mail with a college e-mail account, integrating technology with written communication.

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ENG 032
Developmental English

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: None
Co-requisite: ENG 031 (unless prior credit awarded)

Course Description:
Developmental English is an intensive review of grammar and usage; mechanics of punctuation, spelling, and capitalization; sentence structure; and the writing process. Evidence of planning, organizing, drafting, editing, and revising are emphasized in this course along with a study of different modes of writing for a variety of rhetorical situations.

Course Topics:
- Sentence variety
- Correct sentence structure
- Paragraph writing in various modes
- Paragraph revising and editing

Required Materials:
- Notebook
- College-level dictionary (included)
- Notebook paper
- Pens and pencils
- Highlighters
- Small stapler
- Disk for writing assignments

Grading System:
ENG 100
Introduction to Composition

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 032
Co-requisite: None

Course Description:
This course is a study of basic writing and different modes of composition and may include a review of usage. Non-degree credit

Course Topics:
- Basic sentence structure
- Evaluating and editing written passages
- Paragraph writing
- Essay writing
- Summary writing

Required Materials:
- Notebook
- Notebook paper
- Pens
- Pencils
- Highlighters
- Pocket stapler
- Index cards (optional)
- A USB drive/flash drive
- Access to a computer
- College-level dictionary

Grading System:
A 93 – 100
B 85 – 92
C 75 – 84
D 65 – 74
F 0 – 64

Student Learning Outcomes:
- Identify and correct errors in basic sentence structure.
- Assess a paragraph for correct grammar.
- Recognize and identify the parts of a correctly structured traditional college essay.
- Compose a five paragraph essay, using MLA format.
- Outline a reading selection and compose a summary, using MLA format and documentation.

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ENG 101
English Composition I
ENG 102
English Composition II

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 101 with grade of "C" or better.
Co-requisite: None
Course Description:

This is a (college transfer) course in which the following topics are presented: development of writing skills through logical organization, effective style, literary analysis and research. An introduction to literary genre is also included.

Course Topics:

- Elements of Short Fiction, Poetry, and Drama
- Analysis of Literary Works
- Thesis Statements
- Primary Sources
- Secondary Sources
- Literary Research (MLA)

Required Materials:

Access to a computer with Windows 2000 or newer (compatible with Microsoft 2007) and Internet access. Please note that many instructors will not accept assignments that are not formatted as .doc or .docx

Grading System:

An overall grade of C or higher is required for transferability.

A 93 – 100
B 85 – 92
C 75 – 84
D 65 – 74
F 0 – 64

Student Learning Outcomes:

- Analyze content and rhetorical structure in essay models.
- Support a thesis in an academic essay with well-organized, relevant evidence.
- Synthesize researched materials in a coherent, original essay focused on a clear thesis.
- Document source materials using Modern Language Association (MLA) guidelines.
- Compose essays with minimal grammatical, mechanical, including spelling, and punctuation errors.
- Compose timed essays during class periods and in a final exam period.

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ENG 110
Rhetoric and Advanced Composition

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 101 with grade of "C" or better.
Co-requisite: None
Course Description:
This course includes complex readings, emphasizes critical reading and thinking, focuses on persuasion and argumentation, and expands upon students' research and documentation skills.

Course Topics:
- Rhetorical structure
- Analysis of various works
- Synthesis of secondary sources

Required Materials:
- Access to a computer with Windows 2000 or newer
- Internet access

Grading System:
An overall grade of C or higher is required for transferability.
A 93 – 100
B 85 – 92
C 75 – 84
D 65 – 74
F 0 – 64

Student Learning Outcomes:
- Compose original arguments.
- Distinguish between facts and opinions.
- Diagnose a writer's purpose, tone, and bias.
- Recognize common propaganda techniques.
- Document primary and secondary sources.

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ENG 165
Professional Communications
ENG 201

American Literature I

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 102 with grade of "C" or better.
Co-requisite: None
Course Description:
This course is a study of American literature from the colonial period to the civil war.

Course Topics:
• Writers and their Works
• Social, Historical, and Cultural Influences on Literature
• Critical Analysis
• Synthesis of Secondary Criticism
• Essay Development
• MLA Guidelines

Required Materials:
• Access to a computer with Windows 2000 or newer
• Ability to format .doc, .rtf, or .html documents

Student Learning Outcomes:
• Consider audience and purpose in professional communication.
• Develop ideas in appropriate business and technical writing formats.
• Create a technical description of a mechanism.
• Plan and present professional oral presentations.
• Communicate instructions in oral and written formats.
• Produce documents with standard grammar, usage, and mechanics, including spelling.

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• Internet access.

Grading System:
An overall grade of C or higher is required for transferability.

A 93 – 100
B 85 – 92
C 75 – 84
D 65 – 74
F 0 – 64

Student Learning Outcomes:
• Identify writers and works of the period.
• Relate the social, historical, and cultural influences in literature in oral and/or written analyses.
• Analyze or explicate works using formalist criticism.
• Defend original theses with relevant evidence from primary sources.
• Synthesize several critical analyses/secondary sources into an essay that conforms to MLA guidelines.

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ENG 202
American Literature II

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 102 with grade of "C" or better.
Co-requisite: None

Course Description:
This course is a study of American literature from the civil war to the present.

Course Topics:
• Writers and their Works
• Social, Historical, and Cultural Influences on Literature
• Critical Analysis
• Synthesis of Secondary Criticism
• Essay Development
• MLA Guidelines

Required Materials:
• Access to a computer with Windows 2000 or newer
• Ability to format .doc, .rtf, or .html documents
• Internet access.

Grading System:
An overall grade of C or higher is required for transferability.

A 93 – 100
B 85 – 92
C 75 – 84
D 65 – 74
F 0 – 64

Student Learning Outcomes:
• Identify writers and works of the period
• Relate the social, historical, and cultural influences in literature in oral and/or written analyses.
• Analyze or explicate works using formalist criticism.
• Defend original theses with relevant evidence from primary sources.
• Synthesize several critical analyses/secondary sources into an essay that conforms to MLA guidelines.

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ENG 205
English Literature I
ENG 206

English Literature II

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 102 with a grade of "C" or higher.
Co-requisite: None
Course Description:
This is a (college transfer) course in which the following topics are presented: the study of English literature from the romantic period to the present with emphasis on major writers and periods.

Course Topics:
- Writers and their Works
- Social, Historical, and Cultural Influences on Literature
- Critical Analysis
- Synthesis of Secondary Criticism
- Essay Development
- MLA Guidelines

Required Materials:
- Supplementary text(s) may be chosen by individual instructors. These will be announced in class.
- Access to a computer with Windows 2000 or newer
- Ability to format .doc, .rtf, or .html documents
- Internet access.

Grading System:
An overall grade of C or higher is required for transferability.

A 93 – 100
B 85 – 92
C 75 – 84
D 65 – 74
F 0 – 64

Student Learning Outcomes:
- Identify writers and works of the period.
- Relate the social, historical, and cultural influences in literature in oral and/or written analyses.
- Analyze or explicate works using formalist criticism.
- Defend original theses with relevant evidence from primary sources.
- Synthesize several critical analyses/secondary sources into an essay that conforms to MLA guidelines.

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An overall grade of C or higher is required for transferability.

A 93 – 100
B 85 – 92
C 75 – 84
D 65 – 74
F 0 – 64

Student Learning Outcomes:
- Identify writers and works of the period.
- Relate the social, historical, and cultural influences in literature in oral and/or written analyses.
- Analyze or explicate works using formalist criticism.
- Defend original theses with relevant evidence from primary sources.
- Synthesize several critical analyses/secondary sources into an essay that conforms to MLA guidelines.

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ENG 208
World Literature I

Hours: Class 3, Lab 0, Credit 3

Pre-requisite: ENG 102 with a grade of "C" or higher.

Co-requisite: None

Course Description:
This course is a study of masterpieces of world literature in translation from the ancient world to the sixteenth century.

Course Topics:
- Writers and their Works
- Social, Historical, and Cultural Influences on Literature
- Critical Analysis
- Synthesis of Secondary Criticism
- Essay Development
- MLA Guidelines

Required Materials:
None

Grading System:
An overall grade of C or higher is required for transferability.

A 93 – 100
B 85 – 92
C 75 – 84
D 65 – 74
F 0 – 64

Student Learning Outcomes:
- Identify writers and works of the period.
- Relate the social, historical, and cultural influences in literature in oral and/or written analyses.
- Analyze or explicate works using formalist criticism.
- Defend original theses with relevant evidence from primary sources.
- Synthesize several critical analyses/secondary sources into an essay that conforms to MLA guidelines.

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ENG 209
World Literature II

Hours: Class 3, Lab 0, Credit 3

Pre-requisite: ENG 102 with a grade of "C" or higher.

Co-requisite: None

Course Description:
This course is a study of masterpieces of world literature in translation from the seventeenth century to the present.

Course Topics:
- Writers and their Works
- Social, Historical, and Cultural Influences on Literature
- Critical Analysis
- Synthesis of Secondary Criticism
- Essay Development
- MLA Guidelines

Required Materials:
- Supplementary text(s) may be chosen by individual instructors. These will be announced in class.
- Computer with Windows 2000 or newer
- Ability to format papers as .docs, .doc, .rtf, or .html
- Internet access

Grading System:
An overall grade of C or higher is required for transferability.

A 93 – 100
B 85 – 92
C 75 – 84
D 65 – 74
F 0 – 64

Student Learning Outcomes:
- Identify writers and works of the period.
- Relate the social, historical, and cultural influences in literature in oral and/or written analyses.
- Analyze or explicate works using formalist criticism.
- Defend original theses with relevant evidence from primary sources.
- Synthesize several critical analyses/secondary sources into an essay that conforms to MLA guidelines.

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ENG 228
Studies in Film Genre

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 100, RDG 100 with grade of "C" or better.
Co-requisite: None
Course Description:
This course is a critical examination of significant films. Films representing a variety of genres (western, film noir, screwball comedy, etc) and countries will be viewed and analyzed.

Course Topics:
- Elements of Film
- Genre Studies
- Scene Analysis (Setting, Subjects, Composition)
- Cinematography (Film Stock, Camera Movement, Lighting, and Digital Cinematography)
- Sound
- MLA Guidelines for Research

Required Materials:
- Computer with Windows 2000 or newer
- Ability to format papers as .docs, .doc, .rtf, or .html
- Internet access

Grading System:
An overall grade of C or higher is required for transferability.

A 93 – 100
B 85 – 92
C 75 – 84
D 65 – 74
F 0 – 64

Student Learning Outcomes:
• Employ the basic technical and critical vocabulary of film.
• Relate techniques associated with film genres and genre studies.
• Evaluate a film based on the technical elements associated with a genre.
• Evaluate a film based on the narrative techniques associated with a genre.
• Develop MLA research skills in the study of film and film genres.

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ENG 235
Southern Literature

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 102 with a grade of "C" or higher.
Co-requisite: None
Course Description:
This course is a study of the South's intellectual and literary contributions to national and world literature.

Course Topics:
• Writers and their Works
• Social, Historical, and Cultural Influences on Literature
• Critical Analysis
• Synthesis of Secondary Criticism
• Essay Development
• MLA Guidelines

Required Materials:
• Computer with Windows 2000 or newer
• Ability to format papers as .docs, .doc, .rtf, or .html
• Internet access

Grading System:
An overall grade of C or higher is required for transferability.
A 93 – 100
B 85 – 92
C 75 – 84
D 65 – 74
F 0 – 64

Student Learning Outcomes:
• Identify writers and works of the American South.
• Relate the social, historical, and cultural influences in literature in oral and/or written analyses.
• Analyze or explicate works using formalist criticism.
• Defend original theses with relevant evidence from primary sources.
• Synthesize several critical analyses/secondary sources into an essay that conforms to MLA guidelines

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ENG 236
African American Literature

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 102 with a grade of "C" or higher.
Co-requisite: None
Course Description:
This course is a critical study of African American literature examined from historical, social, and psychological perspectives.

Course Topics:
ENG 238
Creative Writing

Hours: Class 3, Lab 0, Credit 3

Pre-requisite: ENG 102 with a grade of “C” or higher.
Co-requisite: None

Course Description:
This course presents an introduction to creative writing in various genres.

Course Topics:
Topics covered in ENG 238 will necessarily vary depending upon the genre of creative writing being presented.

Required Materials:
- Computer with Windows 2000 or newer
- Ability to format papers as .docs, .doc, .rtf, or .html
  Please note that many instructors will not accept assignments that are not formatted as .doc or .docx
- Internet access

Grading System:
An overall grade of C or higher is required for transferability.

A 93 – 100
B 85 – 92
C 75 – 84
D 65 – 74
F 0 – 64

Student Learning Outcomes:
- Define and explain the elements of a particular genre of creative writing.
- Apply the elements of the particular genre to produce original works.
- Analyze examples of works in that genre and present those analyses.
- Evaluate classmates' writing, as well as his/her writing, critically and constructively.
• Apply criticism of his/her writing to produce revisions of original works in the genre.
• Produce a portfolio of original works in the genre that demonstrates the ongoing process of drafting, critiquing, evaluating, and revising his or her original writing in the genre.

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ENG 260
Advanced Technical Communications

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 102 with a grade of "C" or higher.
Co-requisite: None
Course Description:

This course develops skills in research techniques and increases proficiency in technical communications.

Course Topics:
• Technical documentation
• Research
• Collaboration
• Oral presentation

Required Materials:
• Computer with Windows 2000 or newer
• Ability to format papers as .docs, .doc, .rtf, or .html
• Internet access

Grading System:
An overall grade of C or higher is required for transferability.

A 93 – 100
B 85 – 92
C 75 – 84
D 65 – 74
F 0 – 64

Student Learning Outcomes:
• Compose technical documents that are appropriate for the audience
• Format technical documents.
• Incorporate graphic elements that enhance and support the content of technical documents.
• Research to compose a complex technical document.
• Collaborate to produce a technical document.
• Deliver oral reports on technical topics.

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ENG 265
Advanced Professional Communications

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 102 with a grade of "C" or higher.
Co-requisite: None
Course Description:

This course emphasizes purpose and audience analysis in determining the appropriate rhetorical mode, language usage, and format in professional communications.

Course Topics:
• Standard English and Usage
• Business Document Formatting
• Purpose/Audience/Tone
• E-Mail
• Memos
• Formal Letters
• Short Reports
Long Business Researched Reports
Collaborative Writing
Collaborative Formal Presentation
Meeting Planning
Writing of Minutes

Required Materials:
- Computer with Windows 2000 or newer;
- Access to Word, Excel, PowerPoint, Access, etc. (Microsoft Office)
- Internet access

Grading System:
An overall grade of C or higher is required for transferability.
A 93 – 100
B 85 – 92
C 75 – 84
D 65 – 74
F 0 – 64

Student Learning Outcomes:
- Consider audience and purpose in professional communication.
- Develop ideas in appropriate business and technical writing formats.
- Create a technical description of a mechanism.
- Plan and present professional oral presentations.
- Communicate instructions in oral and written formats.
- Produce documents with standard grammar, usage, and mechanics, including spelling.

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ESL 031
Developmental English Basics for ESL

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: None
Co-requisite: ESL 032

Course Description:
Intended for non-native English speaking students, this course focuses on listening/speaking skills, writing skills, and English grammar. Instruction includes grammar usage, mechanics, sentence structure, and basic writing of short compositions.

Course Topics:
- Composition
- Sentence structure
- Grammar and usage
- Mechanics

Required Materials:
- Notebook
- Divider sheets
- Notebook paper
- Pens and pencils
- Highlighter
- Small stapler
- Note cards (optional)
- Disk or USB drive for writing assignments

Grading System:
A 93 – 100
B 85 – 92
C 75 – 84
F 0 – 74

Student Learning Outcomes:
• Compose an email appropriate for an academic or business setting, applying the writing process.
• Develop a business writing style, using appropriate language and style.
• Demonstrate an understanding of basic grammar rules and mechanics incorporating simple and compound sentences in writing.
• Identify and label the eight parts of speech.
• Construct an e-mail with a college e-mail account, integrating technology with written communication.

ESL 032
Developmental English for ESL

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: None
Co-requisite: ESL 031 (unless prior credit awarded)
Course Description:
Intended for non-native speakers of English, this course intensively reviews grammar usage, mechanics, sentence structure, and the writing process. Instruction focuses on specific writing challenges of the ESL student.

Course Topics:
• Sentence variety
• Correct sentence structure
• Paragraph writing in various modes
• Paragraph revising and editing

Required Materials:
• Notebook
• A college-level dictionary (included)
• Notebook paper
• Pens and pencils
• Highlighters
• A small stapler
• A disk for writing assignments.

Grading System:
A 93 – 100
B 85 – 92
C 75 – 84
F 0 – 74

Student Learning Outcomes:
• Use the writing process when composing a short composition appropriate for academic setting.
• Write a composition with a clear main idea and supporting details.
• Integrate unity and coherence in a composition.
• Create sentence variety by combining simple sentences.
• Assemble a portfolio of previously written paragraphs applying editing skills.

ESL 100
Reading in English as a Second Language

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: RDG 032
Co-requisite: None
Course Description:
This course covers the application of basic reading skills to improve critical comprehension, higher order thinking skills, and standard academic vocabulary for students who are taking English as a Second Language.

Course Topics:
• Vocabulary Skills
• Main Idea and Supporting Details
Patterns of Organization
Inference
Critical Thinking

Required Materials:
- 3-ring notebook
- Notebook dividers
- College-level dictionary
- USB
- Pens and pencils
- Stapler
- Highlighter
- Access to a computer capable of formatting documents in Word or RTF
- Internet access

Grading System:
A 93 – 100
B 85 – 92
C 77 – 84
D 70 – 76
F 0 – 69

Student Learning Outcomes:
- Determine the meaning of unfamiliar words by employing context clues, recognizing word parts, and using dictionary skills in reading selections.
- Identify the main idea by determining the topic and key details in a reading selection.
- Demonstrate comprehension of readings by predicting patterns of organization.
- Deduce implied meaning in reading passages by employing inferential skills.
- Evaluate an argument by applying the four steps of critical thinking.

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EVT 201
Environmental Science

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 100, RDG 100, MAT 102 with minimum grade of C
Co-requisite: None
Course Description:
This course is an introduction to the basic principles of environmental science including ecology, energy, resources, waste management, air, water, and soil pollution.

Course Topics:
Required Materials:
- Any additional resources (handouts) will be provided to the Student by the Instructor.

Grading System:
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 69

Student Learning Outcomes:
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EVT 261
Special Topics in Environmental Science

Hours: Class 0, Lab 3, Credit 1
Pre-requisite:
Co-requisite:

Course Description:

This course is designed to provide current topics to keep students abreast of state-of-the-art concepts and applications in the EVT field. Students may wish to take this course offered in a lab format along with EVT-201 Environmental Science to transfer both courses as a four-credit lab science course. This course may be taken as a stand-alone course for students who may need a one credit course to complete requirements for graduation.

Course Topics:

Required Materials:

Grading System:

Student Learning Outcomes:

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FRE 101

Elementary French I

Hours: Class 4, Lab 0, Credit 4

Pre-requisite: ENG 100, RDG 032 with grade of "C" or better.

Co-requisite: None

Course Description:

This course consists of a study of the four basic language skills: listening, speaking, reading and writing, including an introduction to French culture.

Course Topics:

- Introduction to basic French grammar (verbs, adjectives, prepositions, etc.)
- Forming questions
- Possessive adjectives
- Introductory vocabulary (numbers, days of week, etc.)
- French culture

Required Materials:

- French/English Dictionary recommended

Grading System:

An overall grade of C or higher is required for transferability.

A 93 – 100
B 85 – 92
C 75 – 84
D 65 – 74
F 0 – 64

Student Learning Outcomes:

- Demonstrate listening comprehension of spoken French.
- Develop conversational skills in speaking French.
- Demonstrate reading comprehension of written French.
- Demonstrate writing comprehension in French.
- Demonstrate knowledge of the culture, history, and daily lives of the French.

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FRE 102

Elementary French II

Hours: Class 4, Lab 0, Credit 4

Pre-requisite: FRE 101 with grade of "C" or better.

Co-requisite:

Course Description:

This course continues the development of basic language skills and includes a study of French culture.

Course Topics:

- Continuation of recognition and use of verbs (regular and irregular)
• Introduction of interrogative pronouns and adjectives
• Use of definite, indefinite and partitive articles
• Use of direct and indirect objects
• Continuation of vocabulary development
• Continuation of French culture, customs, and ways of life

Required Materials:
• French/English Dictionary recommended

Grading System:
An overall grade of C or higher is required for transferability.
A 93 – 100
B 85 – 92
C 75 – 84
D 65 – 74
F 0 – 64

Student Learning Outcomes:

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FRE 201
INTERMEDIATE FRENCH I

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: FRE 102 with grade of “C” or better.
Co-requisite:
Course Description:
This course is a review of French grammar with attention given to complex grammatical structures and reading difficult prose.

Course Topics:
Required Materials:
Grading System:
Student Learning Outcomes:

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FRE 202
INTERMEDIATE FRENCH II

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: FRE 201 with grade of “C” or better.
Co-requisite:
Course Description:
This course continues the review of French grammar with attention given to more complex grammatical structures and reading more difficult prose.

Course Topics:
Required Materials:
Grading System:
Student Learning Outcomes:

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GEO 101
Introduction to Geography

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 032, RDG 032
Co-requisite: None
Course Description:
This course is an introduction to the principles and methods of geographic inquiry.

Course Topics:
• Maps
• Landforms
• Weather and climate
Natural Resources
Population Geography
Cultural Geography
Political Geography
Economic Geography

Required Materials:
None

Grading System:
An overall grade of C or higher is required for transferability.
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Identify various countries on a map.
- Discuss the methods of geographic inquiry and the tools of geography.
- Describe cause and effect relationships in physical geography.
- Name and discuss the components of human geography.
- Demonstrate understanding of the basic concepts of economic geography.

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GEO 102
World Geography

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 032, RDG 032
Co-requisite: None

Course Description:
This course includes a geographic analysis of the regions of the world, i.e., North and South America, Europe, Australia, Asia and Africa. Diversity of each region is emphasized by examining its physical environment, natural resources, social, cultural, economic and political systems.

Course Topics:
- Globalization and Diversity
- The changing global environment
- North America
- Latin America
- The Caribbean
- Sub Saharan Africa
- Southwest Asia and North Africa
- Europe
- East Asia
- South Asia

Required Materials:
None

Grading System:
An overall grade of C or higher is required for transferability.
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Discuss the physical, human, and economic geography of North America.
- Explain the physical, human, and economic geography of Europe and Russia.
Examine the physical, human and economic geography of Mexico, Central America, and South America.
Describe the physical, human, and economic geography of the Middle East and Sub Saharan Africa.
Demonstrate an understanding of the physical, human, and economic geography of South Asia, China, Korea, and Japan.

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GER 101
Elementary German I

Hours: Class 4, Lab 0, Credit 4
Pre-requisite: ENG 100, RDG 032 with a minimum grade of
Co-requisite: None
Course Description:
This course is a study of the four basic language skills: listening, speaking, reading, and writing. The course includes an introduction to German culture.

Course Topics:
- Reading skills appropriate for non-native speakers of German at the first semester level
- Writing skills appropriate for non-native speakers of German at the first semester level
- Speaking skills appropriate for non-native speakers of German at the first semester level
- Listening skills appropriate for non-native speakers of German at the first semester level
- Cultural awareness of German traditions/events/significant persons

Required Materials:
- Workbook and supplementary A/V material packaged with textbook.

Grading System:
An overall grade of C or higher is required for transferability.
A 93 – 100
B 85 – 92
C 75 – 84
D 65 – 74
F 0 – 64

Student Learning Outcomes:
- Demonstrate listening comprehension of spoken German.
- Develop conversational skills in speaking German.
- Demonstrate reading comprehension of written German.
- Demonstrate writing comprehension in German.
- Demonstrate knowledge of the culture, history, and daily lives of the German people.

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GER 102
Elementary German II

Hours: Class 4, Lab 0, Credit 4
Pre-requisite: GER 101 with grade of "C" or better.
Co-requisite: None
Course Description:
This course continues the development of the four basic language skills and the study of German culture.

Course Topics:
- Reading skills appropriate for non-native speakers of German at the first semester level
- Writing skills appropriate for non-native speakers of German at the first semester level
GER 201
INTERMEDIATE GERMAN I

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: GER 102 with grade of "C" or better.
Co-requisite:
Course Description:
This course is a review of German grammar with attention given to complex grammatical structures and reading difficult prose.

Course Topics:
Required Materials:
Grading System:
Student Learning Outcomes:

GER 202
INTERMEDIATE GERMAN II

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: GER 201 with grade of "C" or better.
Co-requisite:
Course Description:
This course continues the review of German grammar with attention given to more complex grammatical structures and reading more difficult prose.

Course Topics:
Required Materials:
Grading System:
Student Learning Outcomes:

HIM 102
Introduction to Coding and Classification Systems

Hours: Class 1, Lab 0, Credit 1
Pre-requisite: Admission into the Medical Coding and Reimbursement
Specialist Program
Co-requisite: AHS 102 and AHS 104
Course Description:

This course provides an introduction to classification systems, the role of coding in reimbursement, indexing and statistics, and the beginning foundation of the study of disease.

Course Topics:
Required Materials:
Grading System:
Student Learning Outcomes:

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HIM 105
Medical Office Communication and Practices

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: AHS 102 and AOT 141
Co-requisite: AOT 164, MED 109
Course Description:

This course is the study of the principles of effective medical office communications, with an emphasis on specific job responsibilities and communication skills needed in order to be successful in the health care industry.

Course Topics:

- Medical office tasks
- Telecommunication skills
- Appointment scheduling
- Keyboarding

Required Materials:

- One (1) USB/jump drive

Grading System:

An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:

- Demonstrate computer, office equipment and keyboarding proficiency.
- Prepare and revise written communications.
- Create appointment scheduling.
- Evaluate filing documents.
- Demonstrate telecommunication skills.

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HIM 115
MEDICAL RECORDS AND THE LAW

Hours: Class 2, Lab 0, Credit 2
Pre-requisite: BUS 121
Co-requisite:
Course Description:

This course provides an introduction to the study of laws applicable to the health care field with emphasis in health information practices.

Course Topics:
Required Materials:
Grading System:
Student Learning Outcomes:
HIM 130
Billing and Reimbursement

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: AHS 102, AHS 104, HIM 102, AHS 121, HIM 216
Co-requisite: HIM 225

Course Description:
This course provides an introduction to medical insurance billing and reimbursement practices with emphasis on the primary payers such as Medicare and Medicaid.

Course Topics:
- Career availability in Health Insurance
- Health Insurance
- Managed Care, Medicare, Medicaid, Blue Cross, Tricare
- HCFA 1500 Form
- Insurance processing terms
- Insurance appeal letters
- Processing insurance claims
- Insurance claim denials
- Reimbursement methodologies

Required Materials:
- Medical dictionary

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Complete a HCFA 1500 Form.
- Demonstrate insurance processing terms and meanings.
- Differentiate between Managed Care, Medicare, Medicaid, Blue Cross and Tricare.
- Write an appeal letter to an insurance company.
- Differentiate between the different reimbursement methodologies.

HIM 135
Medical Pathology

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: AHS 102, AHS 104, AHS 121, HIM 130, HIM 216 and HIM 225
Co-requisite: HIM 150

Course Description:
This course is a study of disease processes, general classification of disease, including signs and symptoms, systems affected by disease, diagnostic measures, types of treatment, including surgical and/or chemical intervention, and terminology.

Course Topics:
- Core concepts associated with human diseases
- Medical terminology related to human diseases
- Basic anatomy and physiology of body systems
- Etiology of various diseases and conditions
- Signs and symptoms of disorders
- Common diagnostics
- Course and management of disorders
- Preventive measures
• Effects of aging on various body systems

Required Materials:
None

Grading System:
An overall grade of C or higher is required for transferability.
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
• Describe the core concepts associated with human diseases.
• Utilize medical terminology as it relates to understanding human diseases.
• Discuss the basic anatomy and physiology of the body.
• Discuss the etiology of various diseases and conditions and important signs and symptoms of the diseases.
• Identify common diagnostics, typical course and management of diseases, and preventive measures.
• Discuss the effects of aging on the various body systems.

HIM 140
Current Procedural Terminology I

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: AHS 102 and AOT 141 with a minimum grade of "C" or better.
Co-requisite: AOT 252
Course Description:
This course provides a basic study of the CPT and HCPCS coding and classification systems particular to the physician's office setting. Students will learn how to assign codes to capture the professional component of services provided.

Course Topics:
• The role of professionalism and image in health care
• Organization of the ICD-9-CM and ICD-10-CM
• HIPPA impact on coding and reporting
• Acute care inpatient settings and outpatient settings
• Regulations mandated for third party provider participation
• Educational materials and insurance booklets

Required Materials:
• Computer with Internet access
• Word processing software (must be able to save Word format)
• Anti-virus software

Grading System:
An overall grade of C or higher is required for transferability.
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
• Define coding career opportunities and advancement in health care.
• Summarize the Organization of the ICD-9-CM Tabular list of disease and Index to Diseases.
• Apply the ICD-9-CM and ICD-10-CM coding conventions to coding scenarios in their proper sequence.
• Demonstrate proficiency in converting of diagnoses and/or procedures into numerical codes for health insurance claims processing.
• Identify acute care inpatient settings and outpatient settings.
• Examine the regulations mandated for third party provider participation.
• Prepare educational materials and an insurance booklet for beneficiaries.

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**HIM 141**

**Current Procedural Terminology II**

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: HIM 140 with a minimum grade of “C” or better.
Co-requisite:
Course Description:

This course provides an intermediate study of the CPT and HCPCS coding and classification systems with respect to surgical outpatient facilities and hospitals.

Course Topics:
Required Materials:
Grading System:
Student Learning Outcomes:

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**HIM 150**

Coding Practicum

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: AHS 102, AHS 104, AHS 121, AOT 180, HIM 102, HIM 216, HIM 130, HIM 225
Co-requisite: HIM 135 and HIM 250
Course Description:

This course provides clinical practice in the application of basic coding and classification system guidelines in selected health care facilities.

Course Topics:

• Practices of various medical offices
• Daily work of certified coders
• Coding operative notes
• Real world coding scenarios
• Coding issues and work denials

Required Materials:

• Medical dictionary

Grading System:

An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:

• Explain how a medical office functions.
• Demonstrate the daily work of certified coders and/or charge entry staff.
• Competently code operative notes.
• Employ real world coding scenarios.
• Rectify errors in coding issues and work denials.

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**HIM 216**

Coding and Classification I
HIM 225
Coding and Classification II

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: AHS 102, AHS 104, AHS 121, HIM 102, HIM 216
Co-requisite: HIM 130

Course Description:
This course provides a study of advanced coding and classification systems.

Course Topics:
- Documentation, reimbursement and compliance
- Radiology, pathology, and laboratory coding
- Medication coding
- Surgical modifiers assignments
- Coding operative notes
- CPC exam prep

Required Materials:
- Medical dictionary

Grading System:
An overall grade of C or higher is required for transferability.
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Explain documentation, compliance, and reimbursement.
- Assign modifiers in surgery.
- Demonstrate the proper procedure for coding operative notes.
HIM 250
Coding and Classification III

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: Completion of all prior program requirements.
Co-requisite: HIM 135 and HIM 150 with a "C" or higher.
Course Description:
This course is study of ICD-10-CM, ICD-10-PCS and the coding guidelines and procedures associated with this classification system.
Course Topics:
- ICD-9 and ICD-10
- ICD-10 guidelines
- Applying diagnosis codes to claims
- AAPC ICD-10 Proficiency Assessment prep

Required Materials:
- Medical dictionary

Grading System:
An overall grade of C or higher is required for transferability.
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Identify the purpose of ICD-10.
- Differentiate between ICD-9 and ICD-10 codes.
- Demonstrate the ICD-10 guidelines.
- Appropriately apply the correct diagnosis codes to claims and in the correct order.
- Prepare for the AAPC ICD-10 Proficiency Assessment.

HIS 101
Western Civilization to 1689

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 100, RDG 100
Co-requisite: None
Course Description:
This course is a survey of western civilization from ancient times to 1689, including the major political, social, economic, and intellectual factors shaping western cultural tradition.
Course Topics:
- Progress toward civilization in the Paleolithic & Neolithic eras.
- Civilization in the Ancient Near East.
- Civilization in Ancient Greece.
- Sources of Hellenistic diffusion.
- Rome's rise under Republican authority.
- Rome's transition to an empire.
- Significance of the Christian faith.
- Byzantine, Islamic & German society.
- Rise of the Carolingian Dynasty and its impact on Europe in the Early Middle Ages.
- Feudal society during the High Middle Ages.
- Rise of European states and rise of Church influence during the High Middle Ages.
- Crisis and failure in the Late Middle Ages.
Chief traits of the Renaissance.
Protestant Reformation and its influence on western society.
European exploration and expansion.
War in sixteenth and seventeenth century Europe and political consolidation.

Required Materials:
None

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
• Define the origins of civilization and contrast its development in the Ancient Near East and Greece.
• Describe the spread of Hellenic culture & its utilization by Rome to a world state.
• Explain the remaking of Europe in the face of Roman collapse.
• Contrast the vitality of the High Middle Age with the crisis and dissolution of the Late Middle Ages and revival during the Renaissance.
• Describe Europe's evolution into a modern state.

HIS 102
Western Civilization Post 1689

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG: 100, RDG 100
Co-requisite: None

Course Description:
This course is a survey of western civilization from 1689 to the present, including major political, social, economic, and intellectual factors which shape the modern western world.

Course Topics:
• Scientific Revolution of the sixteenth and seventeenth centuries.
• Political, religious, social and economic theories of the Enlightenment.
• French revolution and the rise of Napoleon.
• Industrial Revolution.
• Social and cultural revolutions of late eighteenth and early nineteenth centuries.
• Political revolution and counterrevolution, beginning with the close of the Napoleonic wars and concluding with the revolutions of 1848.
• Philosophical and cultural traits leading to western progress and breakdown.
• Impact of western nationalism and imperialism.
• Drive toward modernization.
• Origins of the World War I.
• Strategies of German and Allied powers.
• Emergence of the Soviet Union.
• Origins and course of World War II.
• Origins of the Cold War.
• End of the Cold War.

Required Materials:
None

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69  
F 0 – 59  

Student Learning Outcomes:

- Describe the effects of the Enlightenment on eighteenth century Europe.  
- Assess the progress of western civilization during the Age of Revolution, 1789-1848.  
- Contrast developments leading to western progress and those leading to breakdown in the Age of Contradiction, 1848-1914.  
- Describe the impact of World War I on western society and culture.  
- Identify the primary characteristics of western passage into the contemporary world.

HIS 104  
World History  

Hours: Class 3, Lab 0, Credit 3  
Pre-requisite: ENG: 100, RDG 100  
Co-requisite: None  
Course Description:  
This course covers world history from prehistory to circa 1500 A.D., focusing on economic, social, political, and cultural aspects of people before the onset of western dominance and identifying major patterns and trends which characterized the world in each era.

Course Topics:  
- Progress towards civilization in the Paleolithic & Neolithic eras.  
- Civilization in Mesopotamia and Africa.  
- Civilization in Ancient India and China.  
- Society in newly unified China.  
- Society and the quest for salvation in India.  
- Mediterranean world under the Greeks.  
- Mediterranean world under the Romans.  
- Byzantine Empire.  
- Rise and expansion of Islam.  
- Sui, Tang and Sung dynasties of China.  
- Mayan and Toltec civilization.  
- European society during the Early and High Middle Ages.  
- Mongol empire.  
- Feudal Japan.  
- Society and culture of Sub-Saharan Africa.  
- Western Europe during the Late Middle Ages and Renaissance.  
- European exploration and colonization.  
- Chinese exploration under the Ming dynasty.  
- Aztec and Inca society and the impact of European penetration.

Required Materials:  
None  

Grading System:  
An overall grade of C or higher is required for transferability.  
A 90 – 100  
B 80 – 89  
C 70 – 79  
D 60 – 69  
F 0 – 59  

Student Learning Outcomes:  
- Examine the origins of ancient societies in Mesopotamia, Africa, India and China, 4000-500 B.C.E.  
- Chart the formation of the Classical Societies, 500 B.C.E. -500 C.E.  
- Compare and contrast world societies during the postclassical era, 500-1000 C.E.  
- Identify and describe world contacts and conflicts, 1000-1300 C.E.  
- Describe the process of consolidation and interaction of world civilizations, 1300-1500 C.E.
HIS 105
World History II

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG: 100, RDG 100
Co-requisite: None

Course Description:
This course covers world history from circa 1500 A.D. to the present, focusing on the development of a system of interrelationships based on western expansion and on the economic, social, political, and cultural aspects of each era.

Course Topics:
- Transformation of Europe in the early modern era.
- Impact of European penetration in Africa and the Americas.
- Society in Ming and Ch’ing China and in Tokugawa Japan.
- Origins, course and impact of the French Revolution.
- Industrial Revolution in the West.
- Steps leading to the unification of Germany.
- Responses of China and Japan to Western imperialism.
- Origins, course and impact of the First World War.
- Path to autonomy in India, China and Japan.
- Origins, course and impact of the Second World War.
- Origins and impact of the Cold War.
- Collapse of the Soviet Union and the end of the bipolar world.

Required Materials:
None

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Examine the rise of global contact and conflict, 1500-1800.
- Explain how revolutions reshaped the early modern world, 1750-1870.
- Assess the impact of Industry and Empire in the making of the modern world, 1780-1900.
- Identify and describe world contacts and conflicts, 1900-1937.
- Describe the perils and promises of a global system in the modern era.

HIS 112
Nonwestern Civilization

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 100, RDG 100
Co-requisite: None

Course Description:
This course is a survey of the major developments and characteristics of nonwestern civilizations and cultures in Asia, Africa, and the Americas.

Course Topics:
- Progress toward civilization in the Paleolithic and Neolithic eras.
- Civilization in Ancient India, to ca C.E. 200.
- Civilization in Ancient China, to ca C.E. 2000.
- Civilization in early Africa, to ca C.E. 1400.
- Early Japanese civilization.
- Civilization in the Americas prior to European penetration.
- Indian civilization, ca 300-1400.
Imperial China prior to and during early European intrusion, ca 300-1800.
Impact of European intrusion on Japan, ca 1400-1800.
Impact of European intrusion on India, ca 1450-1800.
Impact of European intrusion on Africa, ca 1450-1850.
Indian and African encounter with western modernity, ca 1850-1945.
Chinese and Japanese encounter with western modernity, ca 1850-1945
Postwar (II) experience of Asia and Africa.

Required Materials:
None

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Describe and contrast the origins of civilization with its development in ancient India and China.
- Examine the course of political consolidation and interaction among nonwestern civilizations, excluding China.
- Explain the process of consolidation and interaction in China prior to and during early European intrusion.
- Describe Japan, India and Africa on the eve of and during early European intrusion.
- Summarize the nonwestern world's encounter with western modernity and its ensuing postcolonial experience.

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HIS 115
African-American History

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 100, RDG 100
Co-requisite: None

Course Description:
This course is a study of the history of African Americans, including African heritage, American history, and significant contributions by individuals or groups.

Course Topics:
- Progress toward civilization in Early Africa.
- Primary characteristics of the Atlantic slave trade.
- New World (colonial) servitude.
- American Revolution's liberalizing impact on African Americans.
- New conservatism in place by 1800.
- Slavery in the Antebellum South.
- Black participation in the American Civil War.
- Trials and tribulations of freedmen during the Reconstruction era.
- Booker T. Washington's and W.E.B. Dubois's racial remedies.
- Black participation in World War I.
- Black response to racism in the 1920s.
- Black role in World War II.
- Successes and failures of the Civil Rights Movement.
- Current status of race relations within America.

Required Materials:
None

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:

- Examine the African way of life, the slave trade and New World (colonial) servitude.
- Describe the position of blacks in the new republic, 1790-1861.
- Examine black involvement during the Civil War and Reconstruction eras.
- Assess the impact of America's color line in the early twentieth century.
- Examine the status of African Americans from World War II to present.

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HIS 201
American History: Discovery to 1877

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 100, RDG 100
Co-requisite: None

Course Description:

This course is a survey of U.S. history from discovery to 1877. This course includes political, social, economic, and intellectual developments during this period.

Course Topics:

- Cultural collision between European and Native American.
- English patterns of colonization and settlement.
- Society and culture in the New England, Middle and Southern colonies.
- America's transition from empire to independence.
- American and British roles/strategies in the War of Independence.
- Failure under the Confederation and success under the Constitution.
- Federalist era.
- Rise of Democratic-Republicans.
- Primary traits of Jacksonian society.
- Reform and politics in the Age of Jackson.
- Antebellum South.
- Factors and incidents placing the Union in a position of crisis.
- War Between the States.
- Presidential and Congressional Reconstruction.

Required Materials:

None

Grading System:

An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:

- Identify the origins of the American colonies, distinguishing colonial ways of life.
- Contrast the Imperial from the colonial perspective of the American Rebellion.
- Describe America's transition from Confederation to Constitution and from the politics of Federalism to Democratic-Republicanism.
- Describe the Age of Jackson.
- Explain America's descent into Civil War and distinguish between the Reconstruction policies of President and Congress.

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HIS 202
American History: 1877 to Present
Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 100, RDG 100
Co-requisite: None

Course Description:

This course is a survey of U.S. history from 1877 to the present. This course includes political, social, economic, and intellectual developments during this period.

Course Topics:

- America's new frontiers.
- Rise of industry.
- Urban America at the turn of the century.
- America's rise to empire.
- Politics of progressivism.
- U.S. involvement in World War I.
- Roaring twenties.
- Reactionary politics in the 1920s.
- America's descent into the Great Depression.
- Steps leading to U.S. involvement in World War II.
- U.S. role in World War II.
- Origins of the Cold War.
- U.S. involvement in Vietnam.
- Civil Rights movement.
- Nixon presidency.
- Administrations of Carter, Reagan and Bush.

Required Materials:

None

Grading System:

An overall grade of C or higher is required for transferability.

- A 90 – 100
- B 80 – 89
- C 70 – 79
- D 60 – 69
- F 0 – 59

Student Learning Outcomes:

- Describe the emergence of modern America.
- Contrast progressivism at home with empire and war abroad.
- Describe America's return to normalcy.
- Explain America's rise to superpower status.
- Associate rebellion and reaction at home with internationalism and war abroad.

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HOS 156
Alcoholic Beverage Service and the Law

Hours: Class 1, Lab 0, Credit 1
Pre-requisite: None
Co-requisite: None

Course Description:

This course provides training intervention procedures to support the responsible service of alcohol. Emphasis is placed on the consequences and legal liabilities of failure to serve alcohol in a responsible manner.

Course Topics:

- Local, state and federal laws pertaining to the purchase and service of alcoholic beverages.
- Presentation and service of alcoholic, non-alcoholic and de-alcoholic beverages, including coffee and tea.
- Fundamentals and importance of responsible alcohol service.
- Levels of intoxication and methods to control excessive consumption by guests.
- Dram Shop Act and liquor law liability.
Required Materials:
- Standard Culinary Arts Program Uniform and Supplies as stated in Culinary Arts Program Policies.

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Identify laws that pertain to alcohol sales and service
- Serve beverages using sanitary and safety concerns.
- Discuss the fundamentals and importance of responsible service of beverages.
- Explain liability concerns of the server of beverages.
- Discuss the Dram Shop Act.

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HOS 255
Food Service Management

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: CUL 104
Co-requisite: None
Course Description:
This course is a study of operational food service management. Topics include food service operations, layout and design of restaurants, marketing and sales promotion, food and beverage procedures, and public relations

Course Topics:
- Process of management through effective communication skills.
- Leadership styles
- The supervisor's role in decision-making, problem solving and delegations of duties.
- Job descriptions and specifications.
- Mock interviews, resume preparation, job applications and cover letters.
- Procedures of new employee orientation.
- Training methods.
- Types and methods of employee evaluation.
- Necessity of change and ways of implementing change with the least employee resistance.
- Conflict resolution and grievance procedures (union/non-union).
- Disciplinary problems and the supervisor's role in handling them.
- Terminating employees.
- Motivational techniques/problems.

Required Materials:
- Standard Culinary Arts Program Uniform and Supplies as stated in Culinary Arts Program Policies.

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Identify leadership styles with advantages and disadvantages of each.
- Write a job description.
- Develop a training program for a job description.
- Identify different avenues for employee discipline.
HOS 264
Food and Beverage Pairing

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: CUL 135 with a minimum grade of "C" or Permission of Program Director
Co-requisite: None
Course Description:

This course focuses on the concepts of food and beverage pairing and the influence of ingredient selection, preparation techniques and presentation on sales, service and profitability.

Course Topics:

- Local, state and federal laws pertaining to the purchase and service of alcoholic beverages.
- Basic production process for distillation and fermentation.
- Distinguishing wines by grape and/or other fruit variety, country, growing region and production process.
- The relationship of beverages to food.
- Presentation and service of alcoholic, non-alcoholic and de-alcohol zed beverages, including coffee and tea.
- Equipment and glassware used for beverage preparation and service.
- Opening and closing procedures of a beverage operation.
- Fundamental and importance of responsible alcohol service.
- Levels of intoxication and methods to control excessive consumption by guests.
- The Dram Shop Act and liquor law liability.
- Procedures for implementing internal beverage controls.

Required Materials:

- Standard Culinary Arts Program Uniform and Supplies as stated in Culinary Arts Program Policies.

Grading System:

An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:

- Identify laws pertaining to beverage sales.
- Identify different beverages and their relationship to food and service.
- Serve beverages properly including using correct glassware.
- Recognize and implement responsible alcohol service procedures.
- Implement internal beverage controls.

HRT 101
Introduction to Horticulture

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 032, RDG 032
Co-requisite: None
Course Description:

This course covers the basic principles of horticulture as it relates to commercial production. It includes a survey of the important areas of horticulture, including nursery production and sales, greenhouse operations, landscaping, turf, fruits, and vegetables.

Course Topics:
The many career aspects of the horticulture industry such as greenhouse/nursery, landscaping, turf, etc.

Required Materials:
None

Grading System:
An overall grade of C or higher is required for transferability.

A 90-100
B 80-89
C 70-79
D 60-69
F 0-59

Student Learning Outcomes:
- Generalize the professional characteristics needed as a horticulturalist.
- Evaluate the scope and trends for the greenhouse industry.
- Evaluate the scope and trends for the landscaping industry.
- Explain the scope and cultural requirements for the turf industry.
- Generalize the requirements for producing quality tree and small fruits.

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HRT 104
Landscape Design and Implementation

Hours: Class 2, Lab 3, Credit 3 – Day
Class 3, Lab 0, Credit 3 – Night
Pre-requisite: MAT 032
Co-requisite: None

Course Description:
This course is a study of landscape design and drafting as well as landscape installation techniques.

Course Topics:
- Evaluation and use of proper landscape design principles will be presented.
- Creating landscape designs that include all supporting documents such as site analysis, plant list, etc.

Required Materials:
None

Grading System:
An overall grade of C or higher is required for transferability.

A 90-100
B 80-89
C 70-79
D 60-69
F 0-59

Student Learning Outcomes:
- Design a landscape plan based on a client's personal needs and property space utilization.
- Apply the design qualities of plants and the principles of landscape design.
- Create landscape design plans with quality graphics, lettering, and correct plan organization.
- Present landscape plans in a professional manor to a client using design objectives to identify and solve problems.
- Calculate proper scale and design conversions using an engineer's scale.

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HRT 105
Landscape Plant Materials

Hours: Class 3, Lab 3, Credit 4
Pre-requisite: RDG 032
Co-requisite: None

Course Description:

This course is a study of plant materials that are used in the southeastern landscaping and nursery trade. Identification of plants by common and scientific nomenclature, characteristics, culture, and use are included.

Course Topics:

- Evaluation and identification of woody plants recommended for our landscapes will be covered.
- Plant characteristics and potential issues for each will be discussed.

Required Materials:

None

Grading System:

An overall grade of C or higher is required for transferability.

A 90-100
B 80-89
C 70-79
D 60-69
F 0-59

Student Learning Outcomes:

- Identify most commonly used woody ornamentals.
- Recall scientific names when needed to identify plant material.
- Summarize particular characteristics of plants that are important to their use in landscaping.
- Generalize cultural problems associated with plants used in landscaping.
- Demonstrate ability to listen actively and communicate effectively in class discussions.

HRT 108

Annuals and Perennials

Hours: Class 2, Lab 0, Credit 2
Pre-requisite: None
Co-requisite: None

Course Description:

This course is a survey of herbaceous plants, both annual and perennial, which can be grown in local gardens. Emphasis is on form, texture, size, blooming season, color, and culture.

Course Topics:

- Proper identification and landscape uses of herbaceous plants such as annuals, perennials, ornamental grasses, herbs, and bulbs.
- Proper plant management and cultivation of herbaceous plants are discussed.

Required Materials:

None

Grading System:

An overall grade of C or higher is required for transferability.

A 90-100
B 80-89
C 70-79
D 60-69
F 0-59
Student Learning Outcomes:

- Summarize the general techniques in the design, planting, maintenance and use of herbaceous plants in landscape plantings.
- Select annuals appropriate for seasonal color in our landscapes.
- Select herbaceous perennials, ornamental grasses, and succulent plants for landscape gardening.
- Choose herbs, bulbs, corms, tubers and tuberous roots for seasonal color.
- Recommend herbaceous planting combinations for our southeastern landscapes.

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HRT 110
Plant Form and Function

Hours: Class 3, Lab 3, Credit 4
Pre-requisite: ENG 032, RDG 100
Co-requisite: None

Course Description:
This course is a study of morphology, anatomy, and physiology of higher plants. Emphasis is on plant structure, functions of plant parts, plant processes, plant growth and development, and plant inheritance.

Course Topics:
- Study of the various plant components and biological systems that influence plant behaviors and performance in the landscape and nursery.
- Evaluation of plant genetics and report on plant evolution.
- Summarization of the biological influences by plants in the environment.

Required Materials:
None

Grading System:
An overall grade of C or higher is required for transferability.

A 90-100
B 80-89
C 70-79
D 60-69
F 0-59

Student Learning Outcomes:
- Summarize the scope of botany and the importance of plants.
- Explain how life-sustaining substances create the basis for life.
- Consider the functions of cellular components.
- Summarize functions of the tissue systems of higher plants.
- Point out the functions of root components of higher plants.
- Summarize functions of stem components of higher plants.
- Summarize the function of leaf components of higher plants.
- Summarize functions of reproductive structures of higher plants.
- Describe the water relationships in plants.
- Formulate knowledge of the photosynthesis and respiration processes of growing plants.
- Point out the normal growth and development processes in plants.
- Consider the basic laws of inheritance and plan breeding.
- Explain the process of biotechnology.

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HRT 121
Commercial Irrigation

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: MAT 032 or permission
Co-requisite: None
Course Description:
This course examines the use of irrigation in the landscape industry with emphasis on design, equipment suitability, water application procedures, and construction. Design projects and job bidding are also included.

Course Topics:
• Irrigation components, system configuration and troubleshooting is discussed
• Irrigation design, bidding and customer relations are taught

Required Materials:
None

Grading System:
An overall grade of C or higher is required for transferability.
A 90-100
B 80-89
C 70-79
D 60-69
F 0-59

Student Learning Outcomes:
• Choose the component parts of a sprinkler irrigation system.
Design a sprinkler irrigation system for a residential or commercial site.
Plan a sprinkler irrigation system for landscapes and nurseries.
Choose the component parts of a low volume irrigation system.
Prepare a sprinkler irrigation system bid and presentation for a residential or commercial site.

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HRT 125

Soils

Hours: Class 3, Lab 3, Credit 4
Pre-requisite: MAT 032, RDG 100
Co-requisite: None

Course Description:
This course is a study of soils and plant nutrition. Emphasis is on physical and chemical properties, water, organic matter, and life of soils. Materials and methods for supplying nutrients to horticulture plants are also included.

Course Topics:
- Formation of soils and the many ways to evaluate and modify for proper plant growth in horticultural settings.
- Organic matter influences and fertility management in horticultural soils.

Required Materials:
- A soil sample will be required to be collected and sent to the Soil Testing Lab at Clemson University.

Grading System:
An overall grade of C or higher is required for transferability.

A 90-100
B 80-89
C 70-79
D 60-69
F 0-59

Student Learning Outcomes:
- Formulate a soil's plant growth capabilities by evaluating its physical properties.
- Recommend appropriate soil management techniques based on knowledge of its chemical properties.
- Develop knowledge of soil water, soil organic matter, and soil microorganisms related to plant growth.
- Recommend fertilizer materials for horticulture plants.
- Determine fertilizer applications to horticulture plants.

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HRT 132

Nursery Operation

Hours: Class 2, Lab 3, Credit 3
Pre-requisite:
Co-requisite: None

Course Description:
This course is a study of nursery and greenhouse operations and management. Operational details of plant production, management principles, and chemical safety are covered.

Course Topics:
- Generalization of facility set up, production specifics and industry preferences are discussed.
- Container production, Balled & Burlap production and Pot in Pot production are covered.

Required Materials:
HRT 139
Plant Propagation

Hours: Class 2, Lab 3, Credit 3
Pre-requisite: RDG 032
Co-requisite: None
Course Description:
This course is a study of the fundamental principles and techniques involved in plant propagation.

Course Topics:
- Complete understanding of how to perform and utilize seed propagation for commercial horticulture.
- Comparison and evaluation of asexual propagation and the many ways to use them in commercial horticulture.

Required Materials:
- Bypass Hand Pruners- *not anvil type*

Grading System:
An overall grade of C or higher is required for transferability.

A 90-100
B 80-89
C 70-79
D 60-69
F 0-59

Student Learning Outcomes:
- Select the structures, equipment, and supplies to successfully propagate plants.
- Illustrate seed propagation techniques on various crops in a nursery environment.
- Illustrate asexual propagation techniques on various crops in a nursery environment.
- Communicate and collaborate professionally in a team setting.
- Demonstrate the grafting of woody ornamental plants.

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HRT 141
Horticulture Pest Control

Hours: Class 3, Lab 3, Credit 4
Pre-requisite: MAT 032, RDG 032
Co-requisite: None

Course Description:
This course includes a study of the identification and control of insects, diseases, and weeds that are pests of horticultural plants.

Course Topics:
- Identify and control of common horticulture insects, weeds and diseases.
- Summarize the main components of the SC pesticide exam
- Explanation of proper pesticide equipment calibration is covered.

Required Materials:
None

Grading System:
An overall grade of C or higher is required for transferability.

A 90-100
B 80-89
C 70-79
D 60-69
F 0-59

Student Learning Outcomes:
- Identify and describe insect pests of horticultural plants.
- Identify and describe weed pests of horticultural plants.
- Demonstrate pesticide calibration techniques and calculation methods.
- Identify and control disease problems of horticultural plants.
- Formulate the use of pesticides safely, protecting workers and the environment.
- Compile a sample pest identification display.

HRT 144
Plant Pests

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: MAT 032
Co-requisite: None

Course Description:
This course is a study of horticulturally important insects, plant diseases, and weeds. Emphasis is on identification, prevention, and control.

Course Topics:
- Identifying and controlling common horticulture insects, weeds and diseases.
- Main components of the SC pesticide exam
- Proper pesticide equipment calibration.

Required Materials:
None

Grading System:
An overall grade of C or higher is required for transferability.

A 90-100
B 80-89
C 70-79
D 60-69
F 0-59

Student Learning Outcomes:
- Identify and describe insect pests of horticultural plants.
- Identify and describe weed pests of horticultural plants.
- Demonstrate pesticide calibration techniques and calculation methods.
• Identify and control disease problems of horticultural plants.
• Formulate the use of pesticides safely, protecting workers and the environment.

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**HRT 153**

**Landscape Construction**

**Hours:** Class 3, Lab 0, Credit 3  
**Pre-requisite:** MAT 032  
**Co-requisite:** None  

**Course Description:**

This course covers the requirements and techniques of landscape construction. Emphasis is placed on construction of wood, concrete, and brick landscape structures. The course includes landscape lighting, water gardening and planting.

**Course Topics:**

- Complete evaluation of the installation of concrete pavers, retaining walls, landscape lighting, and landscape water features.
- Landscape installation bidding and pricing.

**Required Materials:**

None

**Grading System:**

An overall grade of C or higher is required for transferability.

A 90-100  
B 80-89  
C 70-79  
D 60-69  
F 0-59

**Student Learning Outcomes:**

- Summarize the various steps prior to beginning the landscape construction process.
- Interpret landscape construction documents.
- Analyze site preparation techniques in regards to grading, drainage, erosion practices, safety practices and care for site utilities.
- Describe the techniques and materials necessary to construct circulation, grade retention, enclosure, and outdoor living structures.
- Discuss the basic principles of landscape management and maintenance.
- Assess the processes of estimating and bidding the cost of landscape construction projects.

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**HRT 169**

**Sustainability in Horticulture**

**Hours:** Class 3, Lab 0, Credit 3  
**Pre-requisite:** ENG100 and RDG 100  
**Co-requisite:** None  

**Course Description:**

This course emphasizes basic issues affecting sustainability in horticultural environments. Topics include water retention, harvesting, pesticides, noise pollution and energy. Students will discuss new and current practices in sustainability, and will also identify sustainable pest control products. Emphasis will be given on preparing students for the SC Environmental Landscape Certification.

**Course Topics:**
• Environmental sustainable practices effective in commercial landscapes such as soil and water preservation.
• Complete coverage and preparation for the SC Environmental Landscape Certification exam.

Required Materials:
None

Grading System:
An overall grade of C or higher is required for transferability.

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Student Learning Outcomes:
• Identify and recommend a variety of plant materials based on physical characteristics and anatomy.
• Describe how to construct a landscape design that is more sustainable and efficient.
• Recommend proper establishment procedures for urban trees.
• Summarize the BMP techniques used to establish and maintain multiple turfgrass species.
• Formulate proper business practices to sustain a healthy business.
• Demonstrate knowledge of sustainable pest management techniques.
• Identify ways in which environmental restoration and preservation can sustain environmental niches.
• Differentiate the principles of organic gardening.

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HRT 200
Horticulture Business Management

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: None
Co-requisite: None

Course Description:
This course is a study of business management practices in horticulture. Customer relations, budget construction, employee management, resume development, invoicing, federal and state tax regulations, immigration policy, basic marketing, and governmental laws and regulations are included.

Course Topics:
• Diverse business management techniques, documents, procedures and legal requirements.
• Marketing strategies and employee relations.

Required Materials:
None

Grading System:
An overall grade of C or higher is required for transferability.

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Student Learning Outcomes:
• Practice professional interpersonal and customer relations.
• Articulate the policies of proper and legal personnel management.
• Discover horticulture business management practices that are required by law and important for a successful operation.
• Develop a marketing strategy/plan.
• Create a professional resume.

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HRT 202
Horticulture Chemicals

Hours: Class 2, Lab 0, Credit 2
Pre-requisite: None
Co-requisite: None
Course Description:
This course is a study of turf and landscape applications of herbicides, insecticides, growth regulators and fungicides. Emphasis is placed on mode of action, environmental impacts, and the strategic and practical use of current and new chemicals in the various turf and landscape industries.

Course Topics:
• Pesticide safety and environmental impacts.
• In depth examination of popular turf insecticides, herbicides, and fungicides.

Required Materials:
None

Grading System:
An overall grade of C or higher is required for transferability.

A 90-100
B 80-89
C 70-79
D 60-69
F 0-59

Student Learning Outcomes:
• Explain the general pesticide safety techniques in applying turf and landscape pesticides.
• Choose turfgrass insecticides for their recommended use according to manufacturer labels.
• Select turfgrass herbicides for their recommended use according to manufacturer labels.
• Select turfgrass fungicides for their recommended use according to manufacturer labels.
• Create and discuss a pesticide calendar for a specific area of the horticulture industry.

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HRT 223
Irrigation

Hours: Class 3, Lab 3, Credit 4
Pre-requisite: HRT 102
Co-requisite: None
Course Description:
This course includes the study and application of the design principles and materials used in horticultural irrigation.

Course Topics:
• Irrigation components, system configuration and trouble-shooting.
• Irrigation design, bidding and customer relations.
• Smart irrigation technology.

Required Materials:
None

Grading System:
An overall grade of C or higher is required for transferability.
HRT 230
Greenhouse Technology

Hours: Class 3, Lab 3, Credit 4
Pre-requisite: HRT 110, HRT 108, MAT 032
Co-requisite: None

Course Description:
This course is the study of commercial greenhouse production techniques and facility management.

Course Topics:
- Basic greenhouse structures, components and technology.
- Commercial production of annuals, hanging baskets, pot crops, etc.
- Commercial greenhouse business management.

Required Materials:
None

Grading System:
An overall grade of C or higher is required for transferability.

A 90-100
B 80-89
C 70-79
D 60-69
F 0-59

Student Learning Outcomes:
- Organize the basic greenhouse structural components, environmental control equipment, and the crop space benching systems.
- Assess the value of various mechanized equipment in improving the labor and crop handling efficiency of a modern greenhouse.
- Compile various materials to effectively grow out bedding plant crops.
- Develop various materials to effectively grow out hanging basket crops.
- Develop various materials to effectively grow out pot plant crops.
- Demonstrate the skills needed to manage a greenhouse business, including cost accounting, production schedule, and labor management.

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HRT 235
Advanced Plant Material & Computer Assisted Design

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 100 and RDG 100, HRT 105/113 and HRT 102/104 or by Permission
Co-requisite: None
Course Description:
This course examines methods for incorporating under-used plant materials in landscapes of the Southeastern U.S. Emphasis is placed on plants not commonly used in Southeastern landscapes. Students will analyze content to assist with the development of skills in digital landscape design.

Course Topics:
- Available plant materials not frequently used in commercial landscapes.
- Examination of urban settings that create challenges that certain plant material can offer various advantages
- Coverage of AutoCad design elements, symbols and methods of developing digital landscape designs.

Required Materials: None

Grading System:
An overall grade of C or higher is required for transferability.
A 90-100
B 80-89
C 70-79
D 60-69
F 0-59

Student Learning Outcomes:
- Describe the taxonomic relationships between plants.
- Choose plants to match certain design criteria.
- Demonstrate Basic CAD skills.
- Design a landscape using CAD.
- Recommend plant material for challenging urban settings.

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HRT 241
Turf Management

Hours: Class 2, Lab 3, Credit 3
Pre-requisite: MAT 032, RDG 032
Co-requisite: None
Course Description:
This course is a study of the identification, use, culture, and maintenance of turf grasses. Emphasis is on the installation and management of turf in residential, commercial, and public areas.

Course Topics:
- Complete coverage of cool season and warm season grasses that can be grown in our region.
- Various commercial methods of installing turfgrasses.
- Detailed examination of methods and materials for proper turf maintenance.

Required Materials: None

Grading System:
An overall grade of C or higher is required for transferability.
A 90-100
B 80-89
C 70-79
D 60-69
F 0-59

Student Learning Outcomes:
- Choose warm-season turf grasses for landscape use in Upstate South Carolina.
Choose cool-season turf grasses for landscape use in Upstate South Carolina.
Summarize the establishment of turf by seeding, sodding, plugging or sprigging.
Consider maintenance techniques for proper turf health.
Demonstrate ability to speak publicly and respond effectively.

HRT 253
Landscape Installation

Hours: Class 3, Lab 3, Credit 4
Pre-requisite: HRT 102
Co-requisite: None

Course Description:
This course is a study of the installation of landscapes, including reading plans, planting, and construction of necessary structures. Instruction in various styles of landscape features and the development of cost estimates and bids are included.

Course Topics:
- Commercial methods and materials for installing paver systems, retaining walls and water features.
- Installation and components of landscape lighting.
- Commercial bidding and pricing.

Required Materials:
None

Grading System:
An overall grade of C or higher is required for transferability.
A 90-100
B 80-89
C 70-79
D 60-69
F 0-59

Student Learning Outcomes:
- Summarize the various steps prior to beginning the landscape construction process.
- Interpret landscape construction documents.
- Analyze site preparation techniques in regards to grading, drainage, erosion protection, safety practices, and care for site utilities.
- Describe the techniques and materials necessary to construct hardscape amenities in a landscape.
- Formulate an estimate and bid for a landscape construction project.

HRT 255
Urban Tree Care

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: HRT 105, HRT 110
Co-requisite: None

Course Description:
This course is a study of selection, installation and maintenance of trees in the urban landscape. Emphasis will be placed on industry standards and municipality requirements. Topics also covered are basic tree anatomy and proper tree pruning and health management.

Course Topics:
- Tree anatomy and structure.
- Proper tree installation, pruning and management.
HRT 256
Landscape Management

Hours: Class 3, Lab 3, Credit 4
Pre-requisite: ENG 032, HRT 105, HRT 125, HRT 141
Co-requisite: None

Course Description:
This course is a study of proper grounds management procedures. Landscape maintenance tasks, scheduling, estimating, and bidding are included.

Course Topics:
- Complete coverage of various landscape management equipment, techniques, timing and procedures.
- Landscape maintenance scheduling and bidding.

Required Materials:
None

Grading System:
An overall grade of C or higher is required for transferability.

A 90-100
B 80-89
C 70-79
D 60-69
F 0-59

Student Learning Outcomes:
- Recognize key elements of landscape management.
- Demonstrate proper landscape management techniques.
- Prepare a landscape management proposal for a property.
- Perform a professional presentation of a landscape bid proposal.
- Demonstrate safety in all aspects of landscape management.

HRT 270
SPECIAL TOPICS IN HORTICULTURE

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: Instructor Permission
Co-requisite:

Course Description:
This course includes special topics in the area of horticulture.

Course Topics:
Required Materials:
Grading System:
Student Learning Outcomes:

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HRT 271
SCWE IN HORTICULTURE

Hours: Class 0, Lab 40, Credit 8
Pre-requisite: Instructor Permission
Co-requisite:
Course Description:
This course includes supervised comprehensive work experience in the horticulture industry. Work in a horticulture related position under supervision of the instructor and employer is required.

Course Topics:
Required Materials:
Grading System:
Student Learning Outcomes:

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HRT 272
HORTICULTURE INTERNSHIP

Hours: Class 0, Lab 20, Credit 4
Pre-requisite: Must have completed one year horticulture and/or permission of the department chair.
Co-requisite:
Course Description:
This course is an internship work experience at an approved site under the supervision of a horticulture faculty member and the employee.

Course Topics:
Required Materials:
Grading System:
Student Learning Outcomes:

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HRT 273
HORTICULTURE INTERNSHIP

Hours: Class 0, Lab 15, Credit 3
Pre-requisite:
Co-requisite:
Course Description:
This course is the study of a comprehensive supervised work experience in the Horticultural industry. Work in a related horticultural position under supervision of the instructor and employer is required.

Course Topics:
Required Materials:
Grading System:
Student Learning Outcomes:

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HSS 101
INTRODUCTION TO HUMANITIES

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 100, RDG 100 with grade of "C" or better.
Co-requisite:
Course Description:
This course includes an introduction to themes, critical approaches, and major contributors to the humanities.

Course Topics:
Required Materials:
Grading System:
Student Learning Outcomes:

HSS 111
MYTH AND FOLKLORE OF HISPANIC/LATINO CULTURES

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 100, RDG 100 with grade of "C" or better.
Co-requisite:
Course Description:
This course introduces myths and folklore, and their influence on arts and culture, of Spanish-speaking peoples.

Course Topics:
Required Materials:
Grading System:
Student Learning Outcomes:

HSS 205
Technology and Society

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 032, RDG 032
Co-requisite: None
Course Description:
This course is an investigation of the impact of modern technological changes in America on the individual, society, and the physical environments. A survey of technological advances from ancient times to present will preface the 20th century focus.

Course Topics:
- Essentials of Paleolithic and Neolithic technology.
- Essentials of Near Eastern technology.
- Essentials of Greco-Roman technology
- Essentials of medieval technology.
- Europe's transition from medieval superstition to the rationality of the scientific revolution and the Enlightenment.
- Europe's revolution in industry and technology.
- Rise of industry in America.
- Responses to poverty associated with the rise of industry in America.
- Technological innovations of the 1920s and their immediate consequences.
- Cold War era and its most identifiable technological sign, the atom bomb.
- Impact of the technological innovations of the 1950s.
- Evolution of U.S. military technology from Vietnam to present.

Required Materials:
- None

Grading System:
An overall grade of C or higher is required for transferability.
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:

- Apply the basic terminology related to the study of technology through an understanding of the origins and evolution of civilization and culture.
- Describe the evolution of technology and industry in the West through discussion of the scientific and industrial revolution in Europe.
- Discuss the values present in late nineteenth and early twentieth century American society which were supportive or critical of technological change and revolution in industry.
- Analyze specific technological innovations in post-1945 America, including their technological and cultural sources, positive and negative impacts on society, and the role of society in developing and controlling these technologies.
- Apply the terminology developed in the course through discussion of a single novel technology and its impact on society and culture.

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HUC 110
Health Unit Procedures I

Hours: Class 3, Lab 12, Credit 7
Pre-requisite: AHS 102
Co-requisite: AHS 170

Course Description:

This course is a study of non-nursing hospital procedures and practical applications in clinical settings as they relate to the coordination of a nursing unit.

Course Topics:

- Responsibilities regarding admissions, pre-operative, and post-operative procedures
- Responsibilities regarding discharging patient (including deaths) and the transfer of patients within the hospital and to other medical facilities
- Responsibilities in completing the transcription of physicians' orders
- Basic human structure, diseases, and disorders of the body
- Transcribing physicians' orders relating to admissions, discharges, transfers, pre-operative, and post-operative patients
- Transcribing physicians' orders relating to treatments, activities, dietary, medications, laboratory, diagnostic imaging, other diagnostic studies and miscellaneous items
- Clinical practicum

Required Materials:

- Notebooks
- Paper
- Pencils
- Fine point red and black pen for graphing
- Lab coat with Health Unit Coordinating patch

Grading System:

An overall grade of C or higher is required for transferability.

A 94 – 100
B 85 – 93
C 80 – 84
D 70 – 79
F 0 – 69
Student Learning Outcomes:

- Identify hospital departments, personnel, and physicians according to their specialty.
- Identify interdepartmental activities on the nursing unit between nursing staff, physicians and other personnel.
- Identify communication and interpersonal skills as a Health Unit Coordinator.
- Identify the Health Unit Coordinator's responsibilities concerning the patient's chart.
- Describe the classifications and categories of physician's orders and the transcription procedure for each type.
- Identify physicians' orders relating to activity, positioning, and observation.
- Recognize physicians' orders relating to nursing treatment and dietary needs.
- Recognize physicians' orders relating to medications.
- Recognize physicians' orders relating to laboratory studies.
- Identify physicians' orders relating to diagnostic imaging.
- Identify physicians' orders relating to various diagnostic studies.
- Coordinate departmental and interdepartmental activities on the simulated nursing unit between nursing staff, physicians, and other personnel.
- Demonstrate the Health Unit Coordinator's responsibilities regarding the patient's chart.

HUC 120
Health Unit Procedures II

Hours: Class 2, Lab 18, Credit 8
Pre-requisite: Completion of prior program requirements with a "C" or higher.
Co-requisite:

Course Description:
This course is a study of non-nursing hospital procedures in addition to an anatomy component which includes a systems review. The course also covers practical applications and clinical settings as they relate to the coordination of a nursing unit.

Course Topics:

- Hospital departments, personnel, and physicians according to their specialty
- Interdepartmental activities on the nursing unit
- Communication and interpersonal skills
- Responsibilities concerning the patient's chart
- Classifications and categories of physician's orders, transcription procedure for each type
- Physicians' orders relating to activity, positioning, and observation
- Physicians' orders relating to nursing treatment and dietary needs
- Physicians' orders relating to medications
- Physicians' orders relating to laboratory studies
- Physicians' orders relating to diagnostic imaging
- Physicians' order relating to various diagnostic studies
- Activities on the simulated nursing unit between nursing staff, physicians, and other personnel
- Transcribing physicians' orders

Required Materials:

- Notebooks
- Paper
- Pencils
- Fine point red and black pen for graphing
- Uniforms
- Lab coat with Health Unit Coordinating patch
Grading System:
An overall grade of C or higher is required for transferability.

A 94 – 100
B 85 – 93
C 80 – 84
D 70 – 79
F 0 – 69

Student Learning Outcomes:

- Identify the Health Unit Coordinator's responsibilities regarding admissions, pre-operative, and post-operative procedures.
- Identify the Health Unit Coordinator's responsibilities regarding discharging patient (including deaths) and the transfer of patients within the hospital and to other medical facilities.
- Explain the Health Unit Coordinator's responsibilities in completing the transcription of physicians' orders.
- Recognize basic human structure, diseases, and disorders of the body.
- Transcribe physicians' orders relating to admissions, discharges, transfers, pre-operative, and post-operative patients.
- Transcribe physicians' orders relating to treatments, activities, dietary, medications, laboratory, diagnostic imaging, other diagnostic studies and miscellaneous items.
- Perform independently, requiring minimal help from preceptor, by the end of clinical practicum.

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### HUS 101

**Introduction to Human Services**

Hours: Class 3, Lab 0, Credit 3

**Pre-requisite:** ENG 100, RDG 100

**Co-requisite:** None

**Course Description:**

This course covers an overview of the field of human services. Role responsibilities, problems, boundaries, and strategies of human service workers are included.

**Course Topics:**

- History of social welfare policy
- Professional ethics
- Skills and interventions strategies
- Child welfare services
- Services for the elderly
- Mental health
- Homelessness
- Healthcare and hospice
- Substance abuse
- School counseling
- Faith-based organizations
- Violence

**Required Materials:**

None

**Grading System:**

An overall grade of C or higher is required for transferability.

A 90-100
B 80-89
C 70-79
D 60-69
F 0-59

**Student Learning Outcomes:**
• Explain the history of the human services profession and its influence on contemporary human services.
• Describe the human services field, including its theoretical orientations, policies, and scope of practice.
• Interpret the professional code of ethics in the human services profession.
• Describe the role of human services to people in a variety of practice settings.
• Evaluate a variety of models of providing human services to people in need.

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HUS 212
SURVEY OF DISABILITIES AND DISORDERS

Hours: Class 3, Lab 0, Credit 3
Pre-requisite:
Co-requisite:
Course Description:
This course is a survey of the major categories of disabilities and disorders with which the helping professional is most likely to work. These will include, but not be limited to, developmental and psychological disorders, visual and hearing impairment and physical disabilities resulting from injury or disease.
Course Topics:
Required Materials:
Grading System:
Student Learning Outcomes:

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HUS 213
DEVELOPMENTAL DISABILITIES PROGRAM PLANNING

Hours: Class 3, Lab 0, Credit 3
Pre-requisite:
Co-requisite:
Course Description:
This course explores the range of services that people with disabilities and their families currently use and the laws that both establish and regulate those services.
Course Topics:
Required Materials:
Grading System:
Student Learning Outcomes:

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IDS 101
Human Thought and Learning

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 032, RDG 032
Co-requisite: None
Course Description:
This course explores the principles, methods, and applications of human thought and learning, including such topics as attention, information processing, problem-solving, hypothesis testing, memory, argumentation, learning theory, and cognitive awareness.
Course Topics:
• What is critical thinking?
- Reason and Emotion
- Language and Communication
- Knowledge, evidence and errors in thinking
- Fallacies
- Arguments (inductive and deductive)
- Decision making
- Marketing and advertising in a consumer culture
- Use of Mass media in decision making
- The scientific method
- Social contract theory

Required Materials:
None

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Discuss the physiological, psychological and social factors associated with the process of thinking.
- Apply creative thinking, persuasive thinking, and organizing skills when using mass media in decision-making.
- Apply logical thinking skills when discussing and analyzing fallacies and arguments (inductive and deductive).
- Discuss the role of science in thinking and problem solving.
- Apply problem solving, evaluating, and decision-making skills to the use of marketing and advertising in a consumer culture.

IDS 104
Career Explorations

Hours: Class 1, Lab 0, Credit 1
Pre-requisite: None
Co-requisite: None

Course Description:
This course is the study and application of career assessment and planning, job search, and employability skills in preparation for transition in the workplace. [Note: This course is designed to plan and assess skills in math, writing, and reading in preparation for transition to teacher education programs. The simulated Praxis I test preparation will enable students to identify and build skills for the ETS Praxis I test.]

Course Topics:
- Review of basic math skills assessed on Praxis I, without use of calculator
- Review of basic reading skills assessed on Praxis I
- Review of basic writing and essay skills assessed on Praxis I

Required Materials:
- Internet access

Grading System:
A 85 – 100
B 70 – 84.9
C 55 – 69.9
D 40 – 54.9
F 0 – 39.9
Student Learning Outcomes:

- Apply mathematical strategies to improve basic skills scores in the number facts of arithmetic on the post-test, without a calculator.
- Develop mathematical concepts necessary to improve basic skills scores in mathematics on the post-test, without the use of a calculator.
- Apply critical reading skills necessary to improve success on the Reading Comprehension section scores on the post-test.
- Identify and recall grammatical concepts to improve basic skills scores in language on the post-test.
- Develop compositional strategies necessary to improve success on the Writing scores on the post-test.

IDS 207
CULTURAL EXPLORATION

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 101 with a minimum grade of "C".
Co-requisite: None

Course Description:
This course will explore the culture and environment of the country or region in which students are studying while abroad. The special topics studied will provide the students with a deeper understanding of the political, social, economic, and cultural issues they experience.

Course Topics:
Required Materials:
Grading System:
Student Learning Outcomes:

IMT 102
Industrial Safety

Hours: Class 2, Lab 0, Credit 2
Pre-requisite:
Co-requisite: None

Course Description:
This course covers safety awareness and practices found in industry.

Course Topics:
- Shop Safety
- Lock out/Tag Out
- OSHA
- General Safety Issues

Required Materials:
- Notebook

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Define the following terms: accident, hazard, unsafe act and unsafe condition.
- Explain the information that can be found on a MSDS/SDS.
• Define the purpose, rights and objectives of the OSHA Act (29 CFR 1910).
• State the objectives and functions of OSHA regarding employees’ and employer’s rights and responsibilities of safety and health.
• Describe and demonstrate materials handling and industrial plant safety.

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IMT 103
Precision Measuring

Hours: Class 1, Lab 3, Credit 2
Pre-requisite: None
Co-requisite: None

Course Description:
This course covers the use of various precision measuring instruments commonly used in industry.

Course Topics:
• Introduction to measurement and calibration
• Precision measuring instruments and devices
• Variability in the results of repeated measurements
• Accuracy and precision
• Sources of errors

Required Materials:
• Notebook
• Calculator
• Safety glasses

Grading System:
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
• Identify the different types of micrometers used in industry.
• Identify the different types calipers used in industry.
• Identify and dimension on the following scales: 8ths, 16ths, 32nds, 64ths, 10ths, and 100ths.
• Identify the different types of weights and scales used in industry.
• Identify the different heat measuring devices used in industry.

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IMT 104
SCHEMATICS

Hours: Class 2, Lab 0, Credit 2
Pre-requisite: None
Co-requisite: None

Course Description:
This course covers the interpretation of mechanical, fluid power, and/or electrical schematics.

Course Topics:
Required Materials:
Grading System:
Student Learning Outcomes:

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IMT 108
Introduction to Industrial Technology
Hours: Class 1, Lab 3, Credit 2
Pre-requisite:
Co-requisite: None
Course Description:
This course will provide information needed to help in choosing a career in selected industrial areas. The student will be subjected to some of the tasks and skills that would be expected of a person working in the field.

Course Topics:
- Common industrial materials
- Career Fields
- Technology Innovations
- Past and Future Technologies

Required Materials:
- Notebook
- Calculator

Grading System:
An overall grade of C or higher is required for transferability.
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Describe the characteristics and applications of various types of manufacturing processes in the modern manufacturing plant.
- Identify and explain the representative types of materials used in manufacturing products that are produced in various manufacturing plants.
- Describe the characteristics and applications of various types of manufacturing support processes in a typical manufacturing plant.
- Identify the various elements of a Quality Assurance /Control program used in the process of manufacturing.
- Explain how advances in technology has impacted manufacturing since the Industrial Revolution.

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IMT 110
Industrial Instrumentation
Hours: Class 2, Lab 3, Credit 3
Pre-requisite:
Co-requisite: None
Course Description:
This course covers fundamentals of pressure, flow, level, and temperature instrumentation.

Course Topics:
- Pressure Laws
- Temperature Conversions
- Technology Innovations in Instrumentation
- Past and Future Technologies
- Safety

Required Materials:
- Notebook
- Calculator
- Safety glasses

Grading System:
An overall grade of C or higher is required for transferability.
IMT 112
Hand Tool Operations
Hours: Class 2, Lab 3, Credit 3
Pre-requisite: None
Co-requisite: None
Course Description:
This course covers the use of hand tools and their applications in industrial and service areas.

Course Topics:
- Layout work
- Proper tool use
- Safety

Required Materials:
- Notebook
- Calculator
- Safety glasses
- Tool kit

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Demonstrate the safe and correct use of a torque wrench.
- Demonstrate the safe and correct usage of industrial tools including both hand and power tools.
- Identify the correct safety Personal Protective Equipment for various jobs.
- Demonstrate the ability to perform layout work.
- Demonstrate the correct usage of precision measuring instruments.
- Demonstrate the safe and correct usage of a hacksaw.
- Demonstrate the correct usage of a drill press.

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IMT 120
Mechanical Installations
Hours: Class 3, Lab 6, Credit 5
Pre-requisite: None
Co-requisite: None
Course Description:
This course covers techniques of assembling, rigging, and installation and/or maintenance of mechanical equipment.

Course Topics:
- Mensuration & Calculations
- Rigging Equipment
- Safety
- Hoist and Cranes
- Appropriate rope, chain, and sling selection
- Machinery and equipment installation

Required Materials:
- Notebook
- Calculator
- Safety glasses
- Tool kit

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Perform a safe lift, using both power-operated and hand-operated equipment.
- Use cranes and hoists to relocate machinery.
- Use ladders and scaffolding safely.
- Inspect rigging and lifting equipment in order to recognize and use only safe and properly maintained equipment.
- Install machinery by applying the principles of setting, leveling, alignment, and anchoring.
- Troubleshoot machinery.
- Disassemble and reassemble machinery.

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IMT 124

Pumps

Hours: Class 1, Lab 3, Credit 2
Pre-requisite: None
Co-requisite: None

Course Description:
This course covers packings, seals, couplings, and alignment of pumps.

Course Topics:
- Types of pumps and applications
- Seals and packing
- Leveling and alignment of pumps
- Pump efficiencies
- Valves
- Safety

Required Materials:
- Notebook
- Calculator
- Safety glasses
- Tool kit

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
Student Learning Outcomes:

- Troubleshoot positive displacement pumps, non-positive displacement pumps, single and multistage turbines, reciprocating and centrifugal compressors, and shaft seals.
- Remove positive displacement pumps, non-positive displacement pumps, single and multistage turbines, reciprocating and centrifugal compressors, and shaft seals.
- Repair (including identifying proper replacement parts) positive displacement pumps, non-positive displacement pumps, single and multistage turbines, reciprocating and centrifugal compressors, and shaft seals.
- Install positive displacement pumps, non-positive displacement pumps, single and multistage turbines, reciprocating and centrifugal compressors, and shaft seals.
- Perform basic shaft alignments for horizontally-mounted equipment.

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IMT 131

Hydraulics and Pneumatics

Hours: Class 3, Lab 3, Credit 4
Pre-requisite: None
Co-requisite: None
Course Description:

This course covers the basic technology and principles of hydraulics and pneumatics.

Course Topics:

- Pascal's Laws
- Gas Laws
- Seals and packing
- Applications of fluid power
- Various valves
- Safety

Required Materials:

- Notebook
- Calculator
- Safety glasses
- Tool Kit

Grading System:

An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:

- Identify hydraulic and pneumatic operations, systems, and components.
- Identify the basic principles of hydraulic power.
- Assemble various working hydraulic circuits from schematic and pictorial drawings.
- Demonstrate the correct procedure in the breakdown, inspection and repair of hydraulic and pneumatic cylinders.
Demonstrate the correct procedure in the breakdown, inspection, and repair of hydraulic and pneumatic valves.
Disassemble, inspect, and test the operation of various pumps.
Demonstrate safety and good work habits.

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IMT 160
Preventive Maintenance

Hours: Class 1, Lab 6, Credit 3
Pre-requisite: None
Co-requisite: None

Course Description:
This course covers preventive maintenance techniques.

Course Topics:
- Maintenance Techniques
- Manuals
- Inspections
- Troubleshooting
- Safety

Required Materials:
- Notebook
- Calculator
- Safety glasses

Grading System:
- A 90 – 100
- B 80 – 89
- C 70 – 79
- D 60 – 69
- F 0 – 59

Student Learning Outcomes:
- Define the general theory, components, and implementation of a preventive maintenance system.
- Explain the purpose of a preventive maintenance system and the importance of scheduling preventive maintenance.
- Identify common maintenance tasks for industrial machinery such as: conveyers, pumps, and hydraulic systems.
- Read, follow, and collect data based on a preventive maintenance job sheet.
- Demonstrate proper safety precautions when performing preventive maintenance.

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IMT 161
Mechanical Power Applications

Hours: Class 2, Lab 6, Credit 4
Pre-requisite: None
Co-requisite: None

Course Description:
This course covers mechanical transmission devices, including procedures for installation, removal, and maintenance.

Course Topics:
- Shafting
- Couplings
- Drive systems
- Gear boxes
- Safety

Required Materials:
Notebook
Calculator
Safety glasses
Tool kit

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
• Perform correct coupling alignment procedures.
• Demonstrate the correct procedure in assembling and maintaining various power transmission drives.
• Demonstrate the proper application and installation of bearings.
• Demonstrate the proper application and installation of mechanical seals, gaskets and packing.
• Demonstrate the proper use of lubricants.
• Demonstrate the correct procedure for aligning and maintaining V-belt and chain drives.

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IMT 163
Problem Solving for Mechanical Applications

Hours: Class 3, Lab 0, Credit 3
Pre-requisite:
Co-requisite: None
Course Description:
This course covers troubleshooting techniques such as mathematical calculations and mechanical procedures.

Course Topics:
• Basic Mathematical Concepts
• Basic Mechanical Concepts
• Gears
• Bearings
• Vibration Analysis
• Safety

Required Materials:
• Notebook
• Calculator
• Safety glasses

Grading System:
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
• Calculate various mathematical problems.
• Define the fundamental units used to analyze mechanical problems and the basic derived units such as force and pressure.
• Develop and demonstrate critical thinking skills.
• Construct and use simple machines.
• Demonstrate the solution of simple linear and quadratic equations.
IMT 170
Statistical Process Control

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: None
Co-requisite: None

Course Description:
This course is a study of the concepts and charts used in quality control.

Course Topics:
- Quality issues
- Downtime
- Logistics
- Critical thinking
- Safety

Required Materials:
- Notebook
- Calculator
- Safety glasses

Grading System:
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Identify various quality systems such as ISO, TQM, Six-Sigma and Lean Manufacturing and their application to manufacturing.
- Collect and analyze data using techniques of statistical process control.
- Describe the role of "Quality Assurance" in increasing productivity and promoting zero defects.
- Analyze Total Predictive Maintenance (TPM) data to minimize defects and maximize product quality.
- State the history of quality control.
- Produce Histograms and Normal Curves.
- Produce variables Charts.
- Produce Attributes Charts.
- Calculate cost of scrap and rework.

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IMT 171
Manufacturing Skills Standard Council Certification I

Hours: Class 0, Lab 3, Credit 1
Pre-requisite: None
Co-requisite: None

Course Description:
This course is a study of manufacturing safety as one of four key portable production skills associated with MSSC certification. Students will learn how to perform safety and environmental inspections, and how to offer procedural suggestions that support safety in the manufacturing work environment.

Course Topics:
- Safety issues
- Safety Programs
- OSHA
Required Materials:
- Notebook
- Calculator
- Safety glasses

Grading System:
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- State the objectives and functions of OSHA regarding employees’ and employer’s rights and responsibilities of safety and health.
- Describe and demonstrate materials handling and industrial plant safety.
- Describe how to prevent and respond to medical and environmental emergencies.
- Describe the impact of safety in the workplace.
- Applies rules/principles to scenario situations.

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IMT 172
Manufacturing Skills Standard II

Hours: Class 0, Lab 3, Credit 1
Pre-requisite: None
Co-requisite: None

Course Description:
This course is a study of quality and continuous improvement as one of four key manufacturing portable production skills associated with MSSC certification. Students will learn how to inspect materials and processes, and take corrective actions to restore or maintain quality.

Course Topics:
- Quality issues and standards
- Logistics
- Inventory control

Required Materials:
- Notebook
- Calculator
- Safety glasses

Grading System:
An overall grade of C or higher is required for transferability.
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:

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IMT 173
Manufacturing Skills Standard III

Hours: Class 0, Lab 3, Credit 1
Pre-requisite: None
Co-requisite: None

Course Description:
This course is a study of manufacturing processes and production as one of four key portable production skills associated with MSSC certification. Students will examine the entire production process cycle including resource availability, product specifications, and shipping/distribution.

Course Topics:
- Manufacturing Processes
- Production Control
- Inventory control
- Warehousing

Required Materials:
- Notebook
- Calculator
- Safety glasses

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:

IMT 174
Manufacturing Skills Standard IV

Hours: Class 0, Lab 3, Credit 1
Pre-requisite: None
Co-requisite: None
Course Description:
This course is a study of maintenance awareness as one of four key manufacturing portable production skills associated with MSSC certification. Topics include potential maintenance issues with basic production systems, preventive maintenance, and routine repairs.

Course Topics:
- Maintenance Processes
- Preventive Maintenance
- Predictive Maintenance
- Reactive Maintenance
- Inspections

Required Materials:
- Notebook
- Calculator
- Safety glasses

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:

IST 166
Network Fundamentals
**IST 201**

**CISCO Internetworking Concepts**

**Hours:** Class 3, Lab 0, Credit 3  
**Pre-requisite:** ENG 100, IST 166, CPT 285, CPT 176 with a minimum grade of "C" or permission from department chair.  
**Co-requisite:** None  
**Course Description:**  
This course is a study of current and emerging computer networking technology. Topics covered include safety, networking, network terminology and protocols, network standards, LANs, WANs, OSI models, cabling, cabling tools, Cisco routers, router programming, star topology, IP addressing, and network standards.  

**Course Topics:**  
- Internetworking Devices.  
- Common Types of Networks.  
- The OSI Model.  
- TCP/IP  
- IP Addressing and Routing.  
- Subnetting IP Networks.  
- Network Protocols and Communications.  
- Operating and Configuring Cisco IOS Devices.
Required Materials:

- None

Grading System:

An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:

- Describe the devices and services used to support communications in data networks and the Internet.
- Describe the role of protocol layers in data networks.
- Explain the importance of addressing and naming schemes at various layers of data networks in IPv4 and IPv6 environments.
- Design, calculate, and apply subnet masks and addresses to fulfill given requirements in IPv4 and IPv6 networks.
- Explain fundamental Ethernet concepts such as media, services, and operations.
- Build a simple Ethernet network using routers and switches.
- Use Cisco command-line interface (CLI) commands to perform basic router and switch configurations.
- Utilize common network utilities to verify small network operations and analyze data traffic.

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IST 202
CISCO Router Configuration

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: IST 201 with a minimum grade of "C."
Co-requisite: None
Course Description:

This course is a study of LANs, WANs, OSI models, Ethernet, token ring, fiber distributed data interface TCP/IP addressing protocol, dynamic routing, routing, and the network administrator's role and function.

Course Topics:

- Static Routing
- Dynamic Routing
- RIPv2
- OSPF
- Access Control Lists
- IOS File Management

Required Materials:

- Lab notebook

Grading System:

An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:

- Describe the purpose, nature, and operations of a router, routing tables, and the route lookup process.
- Configure and verify static routing and default routing.
- Describe dynamic routing protocols, distance vector routing protocols, and link-state routing protocols.
• Configure and troubleshoot basic operations of routers in a complex routed network for IPv4 and IPv6.
• Configure and troubleshoot advanced operations of routers, implementing RIPv2 and OSPF routing protocols for IPv4 and IPv6.
• Describe the purpose and types of access control lists (ACLs).
• Configure, monitor, and troubleshoot ACLs for IPv4 and IPv6.
• Manage Cisco IOS Software licensing and configuration files.

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IST 203
Advanced CISCO Router Configuration

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: IST 202 with a minimum grade of "C.”
Co-requisite: None

Course Description:
This course is a study of configuring Cisco routers.

Course Topics:
• Multi-area OSPF
• EIGRP
• Link Aggregation
• Adjust and Troubleshoot Single-Area OSPF
• Spanning Tree Protocol (STP)
• VLAN Trunk Protocol (VTP)

Required Materials:
• None

Grading System:
An overall grade of C or higher is required for transferability.

A 90-100
B 80-89
C 70-79
D 60-69
F 0-59

Student Learning Outcomes:
• Configure and troubleshoot routers and switches.
• Configure and troubleshoot STP operations.
• Configure and troubleshoot VTP and RSTP.
• Configure and troubleshoot advanced operations of routers, implementing EIGRP routing protocols.
• Configure and troubleshoot Multi-area OSPF.

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IST 204
CISCO Troubleshooting

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: IST 203 with a minimum grade of "C.”
Co-requisite: None

Course Description:
This course is a study of troubleshooting network problems.

Course Topics:
• Frame Relay.
• VPNs
• Point-to-Point Connections.
• Network Address Translation for IPv4.
• Troubleshooting the Network.
• Securing the Network. (IPSec)
• Connecting to the WAN.

Required Materials:
IST 222

Introduction to Web Page Production

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: CPT 101 with a minimum grade of "C."
Co-requisite: None
Course Description:
This course is designed to develop skills in using common office and web development software to produce webpage content.

Course Topics:
- Introduction to the World Wide Web and Internet
- Accessibility
- Coding with XHTML
- Formatting web pages CSS style sheets
- Web Page Layouts
- Web multimedia and interactivity

Required Materials:
- A computer with Internet access.
- Internet Explorer 8.0 (or higher) or other current browser
- Word processing software (must be able to save in a Microsoft Word format)
- A text editor such as Notepad++ (available free from http://notepad-plus-plus.org/)
- Up-to-date antivirus program
- USB Flash drive

Grading System:
An overall grade of C or higher is required for transferability.
A 90-100
B 80-89
C 70-79
D 60-69
F 0-59

Student Learning Outcomes:
- Explain the World Wide Web, the Internet, Web Standards, and Accessibility.
- Identify and use basic XHTML tags.
- Use Cascading Style Sheets (CSS) to format web pages.
- Organize and layout a web site.
- Use multimedia and interactivity on a web page.

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IST 257
LAN Network Server Technologies

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: CPT 209 and IST 166 with a grade of
Co-requisite: None
Course Description:
This course is a study of network operating system
technologies including network operating system architecture,
the installation, configuration, monitoring and troubleshooting
of network resources, and network administration functions
such as user/group maintenance, network security, print
services, remote access, fault tolerance, backup and recovery.

Course Topics:
- Successfully installing and configuring server software in a
  virtual environment.
- Installing, configuring, and managing Active Directory, DNS,
  DHCP and IIS
- Using monitoring tools to evaluate server performance
- Managing system reliability and availability

Required Materials:
- Server 2012 Operating System DVD or ISO file
  A DVD comes shrink-wrapped with textbook if purchased in
  SCC Book Inn
- One USB Flash drive – bring to class every day!

Grading System:
An overall grade of C or higher is required for transferability.
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Compare server operating systems.
- Recognize what is involved in the preparation for and install of
  server operating systems.
- Demonstrate understanding of primary roles in Server 2012.
- Configure and manage data storage.
- Identify ways to monitor and analyze the server environment.

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IST 261
Advanced Network Administration

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: IST 204 with a minimum grade of "C."
Co-requisite: None
Course Description:
This course is an advanced study of the networking operating
system. Topics include installation upgrades, IP services,
internet infrastructure, advanced server management and
security, NDS management, and server optimization.

Course Topics:
- Project management
- Design, planning and implementation of a network solution
- Project documentation
- Physical Design
- Logical Design

Required Materials:
- Lab book
Grading System:
An overall grade of C or higher is required for transferability.
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Design, plan and implement a network solution for solving a specific business problem.
- Demonstrate business and professional presentation skills.
- Summarize and record planned activities and document executed activities, problems encountered, and solutions.
- Work collaboratively in a team environment.
- Apply independent learning skills to new technologies.

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IST 290
Special Topics in Information Sciences
Hours: Class 3, Lab 0, Credit 3
Pre-requisite: IST 204 with a minimum grade of "C."
Co-requisite: None
Course Description:
This course covers special topics in information sciences technologies.

Course Topics:
- Preparation for CCNA certification test

Required Materials:
- Notebook for study notes
- CCNA preparation software

Grading System:
An overall grade of C or higher is required for transferability.
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Implement and operate a network consisting of PCs, routers and switches.
- Troubleshoot networks.
- Describe network terminology.
- Configure Routing protocols and concepts.
- Describe WAN technologies.

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ITP 101
Introduction to Interpreting
Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 100
Co-requisite: None
Course Description:
This course is the study of the profession of interpreting, the role and function of an interpreter, the National Registry of Interpreters Code of Ethics and Professionalism. The basic theories, principles and practices of interpreting, physical
Course Topics:

- Social constructs of communication
- Links between language and culture
- Individualist and Collectivist world views
- Cultural and medical models of disability
- Disability law
- Oppression and paternalism in Deaf history
- Interpreting terminology and practices
- Language vs. signing systems
- Professionalism and Ethics
- Frameworks of interpreting theory
- Settings
- General business practices

Required Materials:

- D2L access

Grading System:

An overall grade of C or higher is required for transferability.

A 93-100
B 85-92
C 75-84
D 65-74
F 0-64

Student Learning Outcomes:

- Evaluate how one overcomes cultural bias and mediates interpersonal exchanges with multi-cultural participants.
- Classify linguistic registers used in communication and the settings in which they are used.
- Compare ASL to manually coded systems and spoken English, including sentence structures and rules of interchange.
- Discuss interpreting models and what comprises an effective interpreter.
- Describe the history of interpreting and the role of the Registry of Interpreters for the Deaf.
- Identify professional behavior by applying the Registry of Interpreters for the Deaf Code of Professional Conduct.

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ITP 104

Interpreting in Educational Settings

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ITP 101
Co-requisite: None
Course Description:

This course will reinforce basic theories and techniques as related to mainstream educational settings K-12 and postsecondary.

Course Topics:

- Hiring, supervision and development of educational interpreters
- Roles and responsibilities of educational interpreters
- Educational development across grade levels
- Individual Educational Plans (IEPs)
- Laws that regulate educational interpreting
- Ethics
- Language needs and signing systems

Required Materials:

- Computer internet access with current browser
- MS Word or compatible system
Grading System:
An overall grade of C or higher is required for transferability.

A 93-100
B 85-92
C 75-84
D 65-74
F 0-64

Student Learning Outcomes:
- Describe the role of the educational interpreter across the educational spectrum.
- Identify legislation which mandates educational interpreting.
- Assess a child's interpreting needs based on language acquisition and development.
- Describe linguistic demands for interpreters based on placement.
- Prepare appropriate IEP recommendations based on information provided in case studies.
- Explain the hiring practices and professional development of educational interpreters.

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ITP 110
Discourse Analysis

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ASL 202 or approval of the Interpreter Training Program Director.
Co-requisite: None
Course Description:
This course provides an introduction to discourse analysis of both ASL and English. Students will study general discourse issues as well as topics specific to ASL and spoken English. This course also outlines implications for accurate interpretation in analyzing the source and target languages.

Course Topics:
- Source and target languages
- Context and meaning in sociolinguistics
- Cognitive processing _ using memory, acuity, discrimination and repetition
- Discourse structure and prosody
- Constraints in languages
- Cohesion and deixis in languages
- Spatial mapping
- Speech acts and events
- Salient features
- Retelling and interpreting

Required Materials:
- D2L account
- Panopto account (provided by SCC) or YouTube account
- Web camera
- High speed internet access

Grading System:
An overall grade of C or higher is required for transferability.

A 93-100
B 85-92
C 75-84
D 65-74
F 0-64

Student Learning Outcomes:
- Analyze text using the Ten-Step Discourse Analysis Process document.
Investigate the cognitive processes for interpreting that occur in English.
Investigate the cognitive processes for interpreting that occur in ASL.
Use Spatial Mapping to reflect on mental representations.
Investigate features of discourse within ASL and English texts.
Practice interpreting texts that have been analyzed.

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ITP 112
Translation

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ASL 202 or approval of the Interpreter Training Program Director.
Co-requisite: None

Course Description:
This course is an introduction to the study of meaning-based translation between ASL and English texts. It provides an extensive discussion of problems encountered in the translation process between the two languages.

Course Topics:
- Interpreting models
- Using expansions and compressions for interpreting
- Literal, free, and idiomatic translations
- Glossing
- Form vs. meaning
- Linguistic and cultural competence
- Main and supporting ideas
- Message transfer
- Priorities in translation
- Handling errors

Required Materials:
- D2L account
- Panopto account (provided by SCC) or YouTube account
- Web camera
- High speed internet access

Grading System:
An overall grade of C or higher is required for transferability.
A 93-100
B 85-92
C 75-84
D 65-74
F 0-64

Student Learning Outcomes:
- Compare interpreting models which outline the interpreting process.
- Practice using expansion and compression techniques for moving between English and ASL texts.
- Produce frozen English translations of ASL narratives and dialogues.
- Produce ASL translations of frozen English narratives.
- Discuss strategies to achieve translation fidelity.
- Evaluate translations for effectiveness.

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ITP 201
Deaf History and Culture

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 032, RDG 032
Co-requisite: None

Course Description:
This course is a study of the history and culture of Deaf people. The course explores language, education, community, and attitudinal changes toward Deaf people as a minority.

Course Topics:
- History of ASL and Deaf culture
- Leaders and events in Deaf history
- Organizations
- Community vs. culture
- Membership in Deaf community
- The deaf child in the family
- Education
- Technology
- Attitudes towards individuals who are deaf

Required Materials:
- Computer internet access with current browser
- MS Word or compatible system

Grading System:
An overall grade of C or higher is required for transferability.

A 93-100
B 85-92
C 75-84
D 65-74
F 0-64

Student Learning Outcomes:
- Discuss the history of American Sign Language and its role in American Deaf culture.
- Describe the historical process by which Deaf education and communication methods evolved in the United States.
- Describe the cultural patterns which characterize the American Deaf culture, such as the values, norms, and traditions, membership and terminology within the culture.
- Evaluate societal perspectives of deafness, including the medical pathological and sociocultural models, and their impact on those who are deaf.
- Discuss famous Deaf role models in history and their contributions to American society.
- Analyze how historical milestones have influenced both the Deaf and hearing communities and their attitudes toward deafness.
- Research technology used by Deaf people from the past until the present.

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ITP 204

English to ASL Interpreting I

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ITP 110 or approval of the Interpreter Training Program Director.
Co-requisite: None
Course Description:
This course introduces the concept of interpreting and establishes principles of transferring information from one language to another. Students will begin to apply these principles by interpreting in consecutive mode.

Course Topics:
- Mind mapping and steps to interpreting fluency
- Conceptual accuracy
- Signing space
- Non-manual markers
- Processing time
- Analysis
Dynamic equivalence
Mind mapping and steps to interpreting fluency
Conceptual accuracy
Signing space
Non-manual markers
Processing time
Analysis
Dynamic equivalence

Required Materials:
- Computer with internet access and current browser
- MS Word or compatible
- Web Camera
- Panopto or YouTube account

Grading System:
An overall grade of C or higher is required for transferability.
A 93-100
B 85-92
C 75-84
D 65-74
F 0-64

Student Learning Outcomes:
- Explain terminology associated with interpreting, not limited to consecutive, simultaneous, processing time, interpreting vs. transliterating, and register.
- Analyze the process of discourse mapping to convey intent rather than form.
- Develop short-term and long-term memory skills for fluency.
- Develop appropriate ASL vocabulary to match English texts.
- Interpret English into grammatically appropriate American Sign Language in consecutive mode.
- Manage English constructs such as homophones and idioms as one moves to American Sign Language.
- Use the Taylor model to create a detailed analysis of one's work.
- Practice strategies for improving interpreting skills.

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ITP 205
English to ASL Interpreting II
Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ITP 204
Co-requisite: None
Course Description:
This course provides advanced studies in interpreting between spoken English and American Sign Language. The course enhances processing skills. Students will use consecutive and simultaneous forms of interpreting.

Course Topics:
- Discourse mapping
- Processing time
- Strategies to reduce miscues
- Demand-Control theory
- Employing appropriate compressions and expansions
- Prosody
- Register
- Meaning and form

Required Materials:
- Computer with internet access and current browser
- MS Word or compatible
- Web Camera
- Panopto or YouTube account
D2L account

Grading System:
An overall grade of C or higher is required for transferability.
A 93 – 100
B 85 – 92
C 75 – 84
D 65 – 74
F 0 – 64

Student Learning Outcomes:
- Incorporate appropriate grammatical structure in both spoken English and American Sign Language.
- Interpret between spoken English and American Sign Language using voice to sign and sign to voice methods, employing both consecutive and simultaneous processing.
- Increase discourse mapping skills to convey intent rather than form.
- Demonstrate cognitive processing skills with appropriate processing time.
- Demonstrate strategies for improving interpreting skills into ASL by using the Taylor model.
- Demonstrate ethical decision-making skills.

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ITP 206
ASL to English Interpreting I

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ITP 110 or approval of the Interpreter Training Program Director.
Co-requisite: None

Course Description:
This course is designed to teach students to take the source signed message in ASL or contact varieties to the target language of spoken English. It features both instruction and practical application in simulated situations. Students will develop their use of register, word choice, and intonation.

Course Topics:
- Mind mapping and steps to interpreting fluency
- Conceptual accuracy
- Grammar
- Vocabulary choices
- Diction and inflection
- Processing time
- Analysis
- Dynamic equivalence

Required Materials:
- Computer with internet access and current browser
- MS Word or compatible
- Web Camera
- Panopto or YouTube account

Grading System:
An overall grade of C or higher is required for transferability.
A 93-100
B 85-92
C 75-84
D 65-74
F 0-64

Student Learning Outcomes:
- Explain terminology associated with interpreting, not limited to consecutive, simultaneous, processing time, interpreting vs. transliterating, and register.
• Demonstrate a clear understanding of American Sign Language, manually coded English forms and fingerspelling.
• Analyze the process of discourse mapping to convey intent rather than form.
• Develop short-term and long-term memory skills for fluency.
• Develop English vocabulary in multiple registers to match ASL texts.
• Perform accurate interpretation of signed information in consecutive mode using correct English structure and grammar, clear oral communication and correct voicing techniques.
• Use the Taylor model to create a detailed analysis of one’s work.
• Practice strategies for improving interpreting skills.

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ITP 207

ASL to English Interpreting II

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ITP 206
Co-requisite: None

Course Description:

This course is designed to offer advanced studies in sign to voice interpreting. It features both consecutive and simultaneous interpreting methods. Students will continue developing their use of register, word choice, and intonation while focusing on accurate interpretation of source language intent.

Course Topics:

• English vocabulary expansion
• Idiomatic expressions
• Appropriate compressions and expansions to convey cultural and implied information
• Processing time
• Strategies to reduce miscues
• Demand-Control theory
• Public speaking techniques – using inflection, phrasing, pausing and diction
• Register
• Meaning and form

Required Materials:

• Computer with internet access and current browser
• MS Word or compatible
• Web Camera
• Panopto or YouTube account

Grading System:

An overall grade of C or higher is required for transferability.

A 93-100
B 85-92
C 75-84
D 65-74
F 0-64

Student Learning Outcomes:

• Produce accurate interpretation of signed and spoken information in both consecutive and simultaneous modes, incorporating appropriate grammatical structure in both spoken English and American Sign Language.
• Interpret between American Sign Language and spoken English using sign to voice and voice to sign methods, employing both consecutive and simultaneous processing.
• Improve word choices to convey precise meaning in the appropriate register.
• Perform accurate interpretation of signed information in simultaneous mode using correct English structure and grammar, clear oral communication and correct voicing techniques.
• Demonstrate cognitive processing skills with appropriate processing time.
• Demonstrate strategies for improving interpreting skills into English by using the Taylor model.
• Demonstrate ethical decision-making skills.

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ITP 212
Interpreting in Special Settings

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ITP 110
Co-requisite: None

Course Description:
This course is a study of basic theories for community interpreting in specialized settings and adapts the techniques used for individual consumer needs.

Course Topics:
• Multiculturalism
• Community settings: vocational, legal, medical, religious, performance, mental health, and VRS
• Work settings: platform, team, and relay interpreting
• Language settings: tri-lingual, high visual, Deaf-blind, contact varieties and signing systems
• Demand-Control Schema

Required Materials:
• Computer with internet access and current browser
• MS Word or compatible
• Web Camera
• Panopto or YouTube account
• D2L account

Grading System:
An overall grade of C or higher is required for transferability.
A 93-100
B 85-92
C 75-84
D 65-74
F 0-64

Student Learning Outcomes:
• Compare and contrast aspects of various interpreting settings.
• Identify Demands that occur in environment, interpersonal, paralinguistic, and intrapersonal categories for interpreters.
• Using the Demand-Control Schema for interpreting, choose appropriate ethical responses for situations interpreters face in various settings.
• Practice analyzing approaches to interpreting based upon assessments of setting, language and cultural requirements of the consumers.
• Employ research methods common for interpreters who encounter new settings or cultural backgrounds.
• Construct new schema for multi-cultural responses based on research.

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ITP 214
Business Practices for Interpreters

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ITP 110
Co-requisite: None
Course Description:
This course is a study of various aspects of being a working community interpreter such as working with interpreting services, pricing and costs, community agencies, tax agencies and planning, protecting oneself physically, current practices of interpreting services and how they impact the independent contractor.

Course Topics:
- Types of certification
- HIPAA, ADA, and other laws as they relate to mandating interpreting
- Law and ethics
- Small business accounting principles
- Employees vs. independent contractors
- Code of Professional Conduct
- Marketing principles and methods
- Protecting yourself
- Projecting a professional image

Required Materials:
- Computer with Internet access and current browser, MS Word (or compatible), Windows Media Player, Flash Player, Adobe Acrobat Reader

Grading System:
An overall grade of C or higher is required for transferability.

A 93-100
B 85-92
C 75-84
D 65-74
F 0-64

Student Learning Outcomes:
- Examine what constitutes a professional, including certification, training, and conduct.
- Identify the laws that affect the profession of interpreting.
- Describe basic principles of small business accounting.
- Solve case studies by applying the RID Code of Professional Conduct.
- Develop appropriate forms and marketing materials needed for an interpreter in private practice.
- Analyze marketing methods for an interpreter in private practice.
- Recognize hazards that exist in the profession as a means to guard against them.

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ITP 240
Interpreting Internship

Hours: Class 1, Lab 6, Credit 3
Pre-requisite: This course is taken during the student's last semester with the approval of the Interpreter Training Program Director.
Co-requisite: None
Course Description:
This course is designed to allow students to gain practical experience, assuming the role of a professional interpreter in a structured setting with on-going feedback from a professional interpreter.

Course Topics:
- Setting Goals
Demand-Control
Professionalism
Research
Skills and knowledge of interpreting
Preparation for assignments
Handling feedback

Required Materials:
- E-portfolio repository using SharePoint or Google Drive or similar platform

Grading System:
An overall grade of C or higher is required for transferability.

A 93-100
B 85-92
C 75-84
D 65-74
F 0-64

Student Learning Outcomes:
- Select goals for improvement for the semester and beyond based on previous feedback.
- Devise a plan for skill development in identified goal areas.
- Demonstrate appropriate interpreting skills for a beginning interpreter.
- Apply the Code of Professional conduct to real life experiences.
- Solicit and apply feedback from certified interpreter mentor and instructor.
- Prepare an e-portfolio to use upon graduation.

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MAT 031
Developmental Mathematics Basics

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: None
Co-requisite: MAT 032

Course Description:
This course includes the study of whole numbers, fractions, decimals, ratios, and proportions. Concepts are applied to real-world problem solving.

Course Topics:
- Whole Numbers (without a calculator)
- Fractions (without a calculator)
- Decimals (without a calculator)
- Ratio and Proportion (without a calculator)

Required Materials:
- Loose-leaf notebook
- Paper and pencils

Grading System:
A 93 – 100
B 85 – 92
C 75 – 84
F 0 – 74

Student Learning Outcomes:
- Perform the four fundamental operations with whole numbers, without a calculator, using standard algorithms.
- Demonstrate the process of multiplying and dividing fractions and mixed numbers, without the use of a calculator.
- Demonstrate the process of adding and subtracting fractions and mixed numbers, without the use of a calculator.
• Compute answers, without a calculator, by applying appropriate decimal strategies and procedures.
• Express relationships between quantities by setting up an appropriate ratio or proportion.

MAT 032
Developmental Mathematics

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: None
Co-requisite: MAT 031 (unless prior credit awarded)

Course Description:
This course includes the study of integers, rational numbers, percents, basic statistics, measurement, geometry, and basic algebra concepts. Application skills are emphasized.

Course Topics:
• Signed Numbers
• Introduction to Algebra
• Percent
• Measurement
• Geometry
• Statistics

Required Materials:
• Loose-leaf notebook
• Paper and pencils
• Calculator

Grading System:
A 93 – 100
B 85 – 92
C 75 – 84
F 0 – 74

Student Learning Outcomes:
• Perform four basic operations with rational numbers without a calculator.
• Solve a single variable equation using the addition property of equality and the multiplication property of equality.
• Solve basic percent problems using an equation.
• Convert measurements in the U.S. and metric systems using conversion rates or dimensional analysis.
• Solve geometric problems concerning perimeter, area, and volume of geometric figures using an understanding of geometric terms and formulas.
• Demonstrate measures of central tendency and variation by calculating the mean, median, mode and range of a set of numbers.

MAT 101
Beginning Algebra

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: MAT 032, RDG 032
Co-requisite: None

Course Description:
This course includes the study of rational numbers and their applications, operations with algebraic expressions, linear equations and applications, linear inequalities, graphs of linear equations, operations with exponents and polynomials, and factoring.

Course Topics:
Perform operations with signed numbers using addition, subtraction, multiplication, or division without the use of a calculator.

Solving linear equations
Graphing linear equations
Completing operations with powers
Factoring algebraic expressions

Required Materials:
Scientific calculator may be used beginning with Chapter 2. Any other device must be approved by the instructor of the course.

Grading System:
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
Perform operations with signed numbers using addition, subtraction, multiplication, or division.
Solve linear equations using operations of addition, subtraction, multiplication, or division.
Graph linear equations by plotting points or using slope/intercept.
Complete operations with powers using rules for exponents.
Factor polynomials using the most appropriate factoring strategy.

MAT 102
Intermediate Algebra

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 032, RDG 100, MAT 101 or MAT 152 with a minimum grade of "C."
Co-requisite: None
Course Description:
This course includes the study of linear systems and applications; quadratic expressions, equations, functions and graphs; and rational and radical expressions and functions.

Course Topics:
Factoring Polynomials
Rational Expressions
Solving Systems of Linear Equations
Rational Exponents, Radicals, and Complex Numbers
More Functions and Graphs
Quadratic Equations and Functions

Required Materials:
Scientific calculator. Any other device must be approved by the instructor of the course.

Grading System:
A 90-100
B 80-89
C 70-79
D 60-69
F 0-59

Student Learning Outcomes:
Factor different types of expressions by applying the appropriate factoring method.
• Solve linear system of equations using elimination, substitution, or graphing methods.
• Solve equations involving rational expressions using basic operations.
• Simplify radical expressions by utilizing appropriate properties.
• Manipulate quadratic functions using factoring, completing square, quadratic formula, or graphing.

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MAT 110
College Algebra

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: MAT 102 or MAT 153 with a minimum grade of "C."
Co-requisite: None

Course Description:
This course includes the following topics: polynomial, rational, logarithmic, and exponential functions; inequalities; systems of equations and inequalities; matrices; determinants; and solutions of higher degree polynomials.

Course Topics:
• Complex Numbers
• Quadratic Equations
• Graphs and Functions
• Polynomial and Rational Functions
• Exponential and Logarithmic Functions
• Systems of Linear Equations and Inequalities
• Matrices and Determinants

Required Materials:
• Texas Instruments TI-83 or TI-84 graphing calculator.
  Any other device must be approved by the instructor of the course.

Grading System:
A 90-100
B 80-89
C 70-79
D 60-69
F 0-59

Student Learning Outcomes:
• Analyze nonlinear functions by graphing and using transformations.
• Demonstrate an understanding of the complex number system by performing basic operations to simplify complex number expressions.
• Solve polynomial functions or polynomial inequalities by applying graphical methods or finding zeroes of the functions.
• Solve rational functions or rational inequalities by applying graphical methods or finding zeroes of the functions.
• Evaluate exponential and logarithmic functions by applying specific properties.
• Solve systems of equations by employing graphing, applying algebraic methods, or using matrices.
This course includes the following topics: trigonometric functions; trigonometric identities; solution of right and oblique triangles; solution of trigonometric equations; polar coordinates; complex numbers, including DeMoivre's Theorem; vectors; conic sections; and parametric equations. (College Algebra) part of description

Course Topics:
- Trigonometric Functions
- Trigonometric Identities and Equations
- Applications of Trigonometric Functions
- Conic Sections

Required Materials:
- Texas Instruments TI-83 or TI-84 graphing calculator.
  Any other device must be approved by the instructor of the course.

Grading System:
A 90-100
B 80-89
C 70-79
D 60-69
F 0-59

Student Learning Outcomes:
- Solve problems involving triangles by using trigonometric strategies.
- Graph trigonometric functions by using transformations.
- Verify identities by simplifying trigonometric expressions.
- Solve trigonometric equations by using fundamental identities and the unit circle.
- Evaluate vectors by using operations, graphing, or polar geometry.
- Translate conic sections by manipulating the standard form of the equations.

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MAT 120
Probability and Statistics

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: MAT 102 or MAT 153 with a minimum grade of "C."
Co-requisite: None

Course Description:
This course includes the following topics: introductory probability and statistics, including organization of data, sample space concepts, random variables, counting problems, binomial and normal distributions, central limit theorem, confidence intervals, and test hypothesis for large and small samples; types I and II errors; linear regression; and correlation.

Course Topics:
- Descriptive Statistics
- Probability
- Discrete Probability Distributions
- Normal Probability Distributions
- Confidence Intervals
- Hypothesis Testing with One Sample
- Correlation and Regression

Required Materials:
- Texas Instruments TI-83 or TI-84 graphing calculator.
  Any other device must be approved by the instructor of the course.
Grading System:
A 90-100
B 80-89
C 70-79
D 60-69
F 0-59

Student Learning Outcomes:
- Summarize statistical data using appropriate statistics.
- Construct graphical representations of data sets.
- Calculate probabilities of events using appropriate counting, set, probability, or distribution rules.
- Calculate probabilities of events using symmetric, bell-shaped distributions.
- Construct confidence intervals or test statistical hypotheses about the population mean using symmetric, bell-shaped distributions.

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MAT 130
Elementary Calculus
Hours: Class 3, Lab 0, Credit 3
Pre-requisite: MAT 110 with a minimum grade of "C."
Co-requisite: None
Course Description:
This course includes the following topics: differentiation and integration of polynomials, rational, logarithmic, and exponential functions; and interpretation and application of these processes. (College Algebra) part of description

Course Topics:
- Limits of various functions
- Differentiation of various functions, including logarithmic and exponential functions.
- Integration of various functions, including integration by substitution and by parts.
- Application problems not limited to related rates and optimization with emphasis on real-world business applications

Required Materials:
- Texas Instruments TI-83 or TI-84 graphing calculator.
  Any other device must be approved by the instructor of the course.

Grading System:
A 90-100
B 80-89
C 70-79
D 60-69
F 0-59

Student Learning Outcomes:
- Evaluate limits of functions using their graphs and/or equations.
- Determine derivatives for functions using power rule, product rule, quotient rule, and/or chain rule.
- Apply the concepts of derivatives in the context of rate of change to solve velocity or acceleration problems.
- Construct graphs of functions using the properties of the first and second derivatives.
- Illustrate the connection between area and the definite integral using Riemann sums.
- Apply the concepts of limits, derivatives or integrals to solve problems involving functions unique to business applications.

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MAT 132
Discrete Math

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: MAT 110 with a minimum grade of "C."
Co-requisite: None

Course Description:
This course includes the following topics: mathematical logic and proofs; set operations; relations and digraphs; functions; recurrence relations; and combinatorics. (This course is designed primarily for computer science students.)

Course Topics:
- Logic and Sets
- Basic Proof Writing
- Elementary Number Theory including Indexed by Integers:
  - Sequences
- Relations and Functions
- Basic Counting: Combinatorics
- Basic Graph Theory

Required Materials:
- Texas Instruments TI-83 or TI-84 graphing calculator.
  Any other device must be approved by the instructor of the course.

Grading System:
A 90-100
B 80-89
C 70-79
D 60-69
F 0-59

Student Learning Outcomes:
- Assess the validity of an argument using symbolic logic or truth tables
- Prove logical statements using the most appropriate method which may include if-then, contradiction, or splitting into cases.
- Identify terms of a sequence by using a closed form equation or a recursive formula
- Apply the definition of relations and functions to determine if a function is one-to-one, onto, or bijective.
- Apply fundamental counting principles to solve combinatorial problems.
- Demonstrate a working knowledge of graph theory using paths, circuits or trees.

MAT 140
Analytical Geometry and Calculus I

Hours: Class 4, Lab 0, Credit 4
Pre-requisite: MAT 111 with a minimum grade of "C."
Co-requisite: None

Course Description:
This course includes the following topics: derivatives and integrals of polynomial, rational, logarithmic, exponential, trigonometric, and inverse trigonometric functions; curve sketching; maxima and minima of functions; related rates; work; and analytic geometry. (a college algebra course and a college trigonometry course or pre-calculus)

Course Topics:
- Limits and Their Properties
- Differentiation
- Applications of Differentiation
Integration
Logarithmic, Exponential, and Other Transcendental Functions

Required Materials:
Texas Instruments TI-83 or TI-84 graphing calculator. Any other device must be approved by the instructor of the course.

Grading System:
A 90-100
B 80-89
C 70-79
D 60-69
F 0-59

Student Learning Outcomes:
- Evaluate limits by numerical, graphical, or analytical methods.
- Solve differentiation problems by power, product, quotient, and/or chain rules.
- Sketch curves by determining intercepts, increasing, decreasing, extrema, concavity, inflection points, and/or asymptotes.
- Solve application problems by using optimization or related rates strategies.
- Solve integration problems using the power rule, u-substitution, or transcendental function methods.

MAT 141
Analytical Geometry and Calculus II

Hours: Class 4, Lab 0, Credit 4
Pre-requisite: MAT 140 with a minimum grade of "C."
Co-requisite: None

Course Description:
This course includes the following topics: continuation of calculus of one variable, including analytic geometry, techniques of integration, volumes by integration, and other applications; infinite series, including Taylor series and improper integrals. (Analytical Geometry and Calculus I)

Course Topics:
- Applications of Integration
- Integration Techniques, L'Hôpital's Rule, and Improper Integrals
- Infinite Series

Required Materials:
Texas Instruments TI-83 or TI-84 graphing calculator. Any other device must be approved by the instructor of the course.

Grading System:
A 90-100
B 80-89
C 70-79
D 60-69
F 0-59

Student Learning Outcomes:
- Calculate volume using the disk, washer, shell, or slicing methods.
- Calculate arc length or surface area using integration.
- Solve integration application problems using work, center of mass, or fluid force methods.
- Evaluate integrals by utilizing integration by parts, trigonometric substitution, partial fractions, or tables.
• Prove convergence or divergence of an infinite series by applying the geometric, p-series, integral, or ratio tests.

MAT 152
Elementary Algebra

Hours: Class 5, Lab 0, Credit 5
Pre-requisite: MAT 032, RDG 032
Co-requisite: None

Course Description:

This course includes the following topics: operations with signed numbers and algebraic expression; solving linear equations; factoring; and an introduction to graphing.

Course Topics:
• Performing operations with signed numbers
• Solving linear equations
• Graphing linear equations
• Completing operations with powers
• Factoring algebraic expressions

Required Materials:
• Scientific calculator may be used beginning with Chapter 2.
  Any other device must be approved by the instructor of the course.

Grading System:
A 90-100
B 80-89
C 70-79
D 60-69
F 0-59

Student Learning Outcomes:
• Perform operations with signed numbers using addition, subtraction, multiplication, or division without the use of a calculator.
• Solve linear equations using operations of addition, subtraction, multiplication, or division.
• Graph linear equations by plotting points or using slope/intercept.
• Complete operations with powers using rules for exponents.
• Factor polynomials using the most appropriate factoring strategy.

MAT 153
Elementary Algebra II

Hours: Class 5, Lab 0, Credit 5
Pre-requisite: ENG 032, RDG 100, MAT 101 or MAT 152 with a minimum grade of "C."
Co-requisite: None

Course Description:

This course is the study of the properties of numbers; fundamental operations with algebraic expressions; polynomials; systems of equations; ratio and proportion; factoring; functions; graphs; solutions of linear inequalities; and linear and quadratic equations.

Course Topics:
• Factoring Polynomials
• Rational Expressions
• Solving Systems of Linear Equations
• Rational Exponents, Radicals, and Complex Numbers
• More Functions and Graphs
MAT 155
Contemporary Mathematics

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: MAT 032, RDG 032
Co-requisite: None
Course Description:
This course includes techniques and applications of the following topics: properties of and operations with real numbers, elementary algebra, consumer mathematics, applied geometry, measurement, graph sketching and interpretations, and descriptive statistics.

Course Topics:
- Problem Solving
- Number Theory and the Real Number System
- Algebra: Equations and Inequalities
- Algebra: Graphs, Functions, and Linear Systems
- Consumer Mathematics and Financial Management
- Measurement
- Geometry

Required Materials:
- Scientific calculator.
  Any other device must be approved by the instructor of the course.

Grading System:
A 90-100  
B 80-89  
C 70-79  
D 60-69  
F 0-59  

Student Learning Outcomes:
- Solve problems involving real numbers by using properties of operations.
- Solve problems containing algebraic expressions by applying rules of equality or inequality.
- Solve geometric problems of measurement using appropriate geometric formulas and rules of algebra.
- Analyze data by applying the appropriate statistical strategies.
MAT 160
Math for Business and Finance

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: MAT 032, RDG 032
Co-requisite: None

Course Description:
This course includes the following topics: commissions, mark-on, depreciation, interest on unpaid balances, compound interest, payroll, taxes, and graphs.

Course Topics:
- Percent
- Bank services
- Payroll
- Mathematics of buying
- Mathematics of selling
- Simple interest
- Compound interest and inflation
- Business and consumer loans
- Depreciation
- Business statistics

Required Materials:
- Scientific calculator.
  Any other device must be approved by the instructor of the course.

Grading System:
A 90-100
B 80-89
C 70-79
D 60-69
F 0-59

Student Learning Outcomes:
- Solve percent problems using appropriate arithmetic strategies.
- Solve payroll problems by implementing appropriate financial strategies.
- Solve mark-on problems by executing appropriate pricing strategies.
- Solve interest problems using appropriate interest formulas.
- Solve loan problems by implementing appropriate business strategies.

MAT 168
Geometry and Trigonometry

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: MAT 101 or MAT 152 with a minimum grade of “C.”
Co-requisite: None

Course Description:
This course includes the following topics: points, lines, angles, and angle measure; triangles; polygons; circles; geometric solids; trigonometric solution of triangles; graph of the sine function; and vectors.

Course Topics:
- Linear Equations and Inequalities
- Formulas, Proportion, and Variation
MAT 170
Algebra, Geometry, and Trigonometry I

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: MAT-032 and RDG-032 with a minimum grade of "C".
Co-requisite: None

Course Description:
This course includes the following topics: elementary algebra, geometry, trigonometry, and applications.

Course Topics:
- Pre-Algebra
- Basic Algebra
- Practical Plane Geometry
- Solid Figures
- Triangle Trigonometry

Required Materials:
- Scientific calculator.
  Any other device must be approved by the instructor of the course.

Grading System:
A 90-100
B 80-89
C 70-79
D 60-69
F 0-59

Student Learning Outcomes:
- Perform basic operations with signed numbers, exponents and square roots.
- Solve applied problems using algebraic expressions, equations, and formulas.
- Apply properties of plane Geometry to perform tasks with angles and geometric figures.
- Calculate surface area and volume using formulas for solid figures.
- Solve problems involving triangles by using trigonometric strategies.

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MAT 211
Math for Elementary Education I

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 100, RDG 100, MAT 102 or MAT 153 with a minimum grade of "C."
Co-requisite: None
Course Description:
This course includes the following topics: logic, set theory, properties of and operations on counting numbers, integers, rational numbers, and real numbers.

Course Topics:
- Problem Solving
- Numeration Systems and Sets
- Whole Numbers and Their Operations
- Number Theory
- Integers
- Rational Numbers and Proportional Reasoning

Required Materials:
- None

Grading System:
A 90-100
B 80-89
C 70-79
D 60-69
F 0-59

Student Learning Outcomes:
- Solve problems using the strategies of discovering patterns, using inductive reasoning, using Polya's four step process or using the calculator.
- Perform and model calculations in different numerations systems.
- Perform operations on sets, whole numbers or functions using correct algorithms.
- Calculate basic operations on real numbers using the appropriate models or algorithms.
- Solve applications of logic problems using truth tables.

MAT 212
Mathematics for Elementary Education II

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 100, RDG 100, MAT 102 or MAT 153 with a minimum grade of "C."
Co-requisite: None
Course Description:
This course includes the following topics: basic algebra, introductory geometry, probability, and statistics.

Course Topics:
- Decimals, Rational Numbers and Percents
- Real Numbers and Algebraic Thinking
- Probability
- Data Analysis and Statistics

Required Materials:
- None

Grading System:
A 90-100
B 80-89
C 70-79
D 60-69
F 0-59

Student Learning Outcomes:

- Perform calculations with rational numbers by using the appropriate algorithms.
- Solve percent problems using proportional equations.
- Solve percent interest application problems using the appropriate interest formulas.
- Convert real numbers between decimals, fractions and percentages by using the appropriate algorithms.
- Simplify expressions, express application problems as equations and solve equations in one variable using properties of equality.
- Calculate probabilities, expected values, odds, permutations and combinations using the appropriate definitions and formulas.
- Graph and summarize, interpret and analyze statistical data using quantitative measures of central tendency and variation.

MAT 215
Geometry

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 100, RDG 100, MAT 102 or MAT 153 with a minimum grade of "C."
Co-requisite: None
Course Description:
This course includes the following topics: Euclidean geometry of points, lines, triangles, circles, and polygons; right triangle trigonometry; and analytical geometry of the straight line. (This course is designed primarily for elementary teachers.)

Course Topics:
- Introductory Geometry
- Construction, Congruence, and Similarity
- Congruence and Similarity with Transformations
- Area, Pythagorean Theorem, and Volume

Required Materials:
- Scientific calculator.
  Any other device must be approved by the instructor of the course.

Grading System:
A 90-100
B 80-89
C 70-79
D 60-69
F 0-59

Student Learning Outcomes:

- Define and classify lines, angles and polygons by using the appropriate geometric definitions and symbols.
- Measure angles using the appropriate tools, definitions or theorems.
- Convert between and within the U.S. customary and the metric systems of measurement using dimensional analysis or proportional equations.
- Evaluate application problems using the Pythagorean Theorem and distance formula.
- Calculate perimeter, area and volume of geometric figures by using appropriate mathematical formulas.
- Construct geometric figures using a compass and straightedge.
• Perform translations, rotations, reflections or dilations by using the appropriate transformation rules in a Cartesian coordinate plane.

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MAT 220
Advanced Statistics

Hours: Class 3, Lab 0, Credit 3  
Pre-requisite: MAT 120 with a minimum grade of “C.”  
Co-requisite: None

Course Description:

This course includes the following topics: estimation of parameters; formulation and testing of hypotheses; multiple and non-linear regression; correlation; contingency tables; analysis of variance; special distributions; introduction to non-parametric statistics.

Course Topics:

• Confidence Intervals  
• Hypothesis Testing with One Sample  
• Hypothesis Testing with Two Samples  
• Correlation and Regression  
• Chi-Square Tests and the F-Distribution  
• Nonparametric Tests

Required Materials:

• Texas Instruments TI-83 or TI-84 graphing calculator.  
  Any other device must be approved by the instructor of the course.

Grading System:

A 90-100  
B 80-89  
C 70-79  
D 60-69  
F 0-59

Student Learning Outcomes:

• Estimate the value of population parameters by constructing confidence intervals.  
• Test hypotheses for one sample using probability distributions  
• Test hypotheses that compare multiple samples using probability distributions.  
• Test for distribution fit or independence by evaluating a Chi Square probability distribution.  
• Perform hypothesis tests by using nonparametric statistics.

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MAT 240
Analytic Geometry and Calculus III

Hours: Class 4, Lab 0, Credit 4  
Pre-requisite: MAT 141 with a minimum grade of “C.”  
Co-requisite: None

Course Description:

This course includes the following topics: multivariable calculus, including vectors; partial derivatives and their applications to maximum and minimum problems with and without constraints; line integrals; multiple integrals in rectangular and other coordinates; and stokes' and green's theorems. ( Analytical Geometry and Calculus II)

Course Topics:

• Vectors and the Geometry of Space  
• Vector-Valued Functions  
• Functions of Several Variables
Multiple Integration
Vector Analysis

Required Materials:
Texas Instruments TI-83 or TI-84 graphing calculator.
Any other device must be approved by the instructor of the course.

Grading System:
A 90-100
B 80-89
C 70-79
D 60-69
F 0-59

Student Learning Outcomes:
Solve three dimensional problems using vectors, lines, or planes.
Solve problems within cylindrical or spherical coordinate systems.
Solve vector-valued functions by applying differentiation or integration.
Solve problems with functions of several variables using partial differentiation.
Solve problems using iterated integrals.

MAT 242
Differential Equations

Hours: Class 4, Lab 0, Credit 4
Pre-requisite: MAT 141 with a minimum grade of "C."
Co-requisite: None

Course Description:
This course includes the following topics: solution of linear and elementary non-linear differential equations by standard methods with sufficient linear algebra to solve systems; applications; series; Laplace transform; and numerical methods. (Analytic Geometry and Calculus III)

Course Topics:
- Introduction to Differential Equations
- First-Order Differential Equations
- Mathematical Models and Numerical Methods Involving First-Order Equations
- Linear Second-Order Equations
- Laplace Transforms
- Series Solutions of Differential Equations
- Matrix Methods for Linear Systems
- Eigenvalue Problems and Sturm-Liouville Equation

Required Materials:
Texas Instruments TI-83 or TI-84 graphing calculator.
Any other device must be approved by the instructor of the course.

Grading System:
A 90-100
B 80-89
C 70-79
D 60-69
F 0-59

Student Learning Outcomes:
Solve problems by determining if a given function is a solution.
Solve differential equations by separable, linear, or exact equations methods.
Solve application problems using first-order differential equations.
Solve a differential equation by improved Euler's method, Taylor, or Runge-Kutta methods.
Solve second-order equations using homogeneous, non-homogeneous, or the method of undetermined coefficients strategies.

MED 102
Introduction to the Medical Assisting Profession II

Hours: Class 2, Lab 0, Credit 2
Pre-requisite: Admission into the Medical Assisting Program.
Co-requisite: None

Course Description:
This course introduces the student to the profession of medical assisting, the legal and ethical concepts related to medical assisting, and the medical terminology of the medical office.

Course Topics:
- Medical Assisting as a Profession
- Therapeutic Communication Skills
- Recognizing Various Coping Skills
- Law, Ethics, and Bioethics
- Greater Concept of Law
- Regulations and Professional Liability
- Impact of Cultural Influence
- Scarce Medical Resources
- Genetic Testing and Genetic Screening
- Ethical and Legal Guidelines

Required Materials:
- Computer with Internet access
- Word processing software (must be able to save Word format
- Up-to-date anti-virus software.

Grading System:
An overall grade of C or higher is required for transferability.

A 94 – 100
B 85 – 93
C 80 – 84
D 70 – 79
F 0 – 69

Student Learning Outcomes:
- Define medical assisting as a profession.
- Identify various health care settings and members of the health care team.
- Identify various therapeutic communication skills used to effectively communicate with coworkers and patients.
- Recognize various coping skills for the successful medical assistant.
- Define law, ethics, and bioethics and describe their importance to the practice of medicine and to medical office personnel.
- Discuss the greater concept of law, its sources, and the trial process.
- Identify Regulations and Professional Liability for the Health Care Professional.
- Discuss the importance of physicians' responsibilities to society while performing their professional duties.
- Explain the importance of properly executed client consent when giving treatment.
- Recognize the impact of cultural influence on ambulatory health care.
Explain scarce medical resources and be able to discuss how decisions are made to allocate these resources.
Discuss genetic testing and genetic screening including sterilization and artificial conception.
Discuss ethical and legal guidelines related to the issue of abortion for medical office personnel.

MED 105
Medical Office Skills I

Hours: Class 3, Lab 6, Credit 5
Pre-requisite: Successful completion of prior program requirements.
Co-requisite: AHS 170, MED 102, MED 113, AND MED 118

Course Description:
This course provides a study of receptionist duties, records maintenance, insurance form processing, and office machine use.

Course Topics:
- Identifying Basic computer Systems
- Effective Telecommunication
- Medical Office Organizational Tasks
- Medical Office Correspondence

Required Materials:
- Pin Drive
- Mouse and Mouse Pad

Grading System:
An overall grade of C or higher is required for transferability.

A 94 – 100
B 85 – 93
C 80 – 84
D 70 – 79
F 0 – 69

Student Learning Outcomes:
- Identify methods used to create an appropriate medical office facility environment.
- Identify basic computer systems, computer operations, and common software applications.
- Demonstrate effective telecommunication management.
- Coordinate patient appointments.
- Identify the component parts of the patient record, explain the importance of each part, and obtain the required information.
- Perform medical office organizational tasks, including the filing of medical records.
- Demonstrate use of medical office correspondence and professional writing.

MED 108
Common Diseases of the Medical Office

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: MED-102, MED-105, MED-113, and MED-118 with a minimum grade of
Co-requisite: MED 114, MED 116, MED 134

Course Description:
This course provides a study of the most frequently encountered diseases of the patients seen in the medical office, their pathology and treatment.

Course Topics:
Mechanisms of Disease
Structural Organization of the Human Body
Disease Processes
Signs and Symptoms, Diagnostic Procedures, and Treatments for Disease

Required Materials:
None

Grading System:
An overall grade of C or higher is required for transferability.

A 94 – 100
B 85 – 93
C 80 – 84
D 70 – 79
F 0 – 69

Student Learning Outcomes:

• Explain the mechanisms of disease including definitions of diagnosis, prognosis, cure, treatment, immunities, and infectious processes.
• Explain the structural organization of the human body.
• Explain normal structure and function of the blood, cardiovascular, respiratory, urinary, gastrointestinal, reproductive, integumentary, musculoskeletal, nervous, endocrine, immune, and lymphatic systems.
• Discriminate between disease processes of the blood, cardiovascular, respiratory, urinary, gastrointestinal, reproductive, integumentary, musculoskeletal, nervous, endocrine, immune, and lymphatic systems.
• Explain signs and symptoms, diagnostic procedures, and treatments for diseases of the human body.
• Identify the interdependent relationships of stress, aging, and wellness in regards to the human body.

MED 109
MEDICAL BUSINESS RECORDS

Hours: Class 3, Lab 0, Credit 3
Pre-requisite:
Co-requisite: AOT 164 and HIM 105
Course Description:
This course provides a study of record keeping procedures utilized in physicians' offices and other clinical facilities.

Course Topics:
Required Materials:
Grading System:
Student Learning Outcomes:

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MED 113
Basic Laboratory Techniques

Hours: Class 2, Lab 3, Credit 3
Pre-requisite: Admission into the Medical Assisting Program.
Co-requisite: None
Course Description:
This course provides a study of specimen collection and techniques for related laboratory procedures routinely performed in medical offices and clinics; including hematology and procedures related to body fluids.

Course Topics:
• Laboratory Organization and Safety Rules

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MED 114
Medical Assisting Clinical Procedures

Hours: Class 2, Lab 6, Credit 4
Pre-requisite: Successful completion of prior program requirements.
Co-requisite: None

Course Description:
This course covers examination room techniques, including vital signs, specialty examination, minor surgical techniques and emergency procedures.

Course Topics:
• Necessity and Function of the Medical History
• Assisting the Physician
• Body Examination Techniques
• Sterile Surgical Techniques

Required Materials:
• Stethoscope
• Manual blood pressure cuff
• Personal protective equipment:
  • masks
  • goggles
  • face shields
  • protective clothing
  • latex gloves

Grading System:
An overall grade of C or higher is required for transferability.
A 94 – 100  
B 85 – 93  
C 80 – 84  
D 70 – 79  
F 0 – 69

Student Learning Outcomes:

- Describe the necessity and function of the medical history in patient treatment.
- Describe methods, positioning, and instruments used in routine physical examinations.
- Employ medical assisting practices to assist the physician with obstetrics, gynecological, and male reproductive examinations.
- Employ medical assisting practices to assist the physician with pediatric examinations.
- Identify expected changes that occur as part of the aging process.
- Distinguish various techniques used in medical specialty examinations and procedures of the body systems.
- Identify sterile surgical technique and instruments used in minor surgery.
- Demonstrate medical assisting procedures required for patient care in the ambulatory care setting.

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MED 116
Medical Office Lab Procedures II

Hours: Class 3, Lab 3, Credit 4

Pre-requisite: Successful completion of prior program requirements.
Co-requisite: None
Course Description:

This course includes the study of laboratory techniques commonly used in physicians' offices and other facilities.

Course Topics:

- Proficiency in Immunological Tests
- Proficiency in Microbiology
- Proficiency in Phlebotomy Technique
- Proficiency in Clinical Chemistry Tests

Required Materials:

Personal protective equipment
- Masks
- Goggles
- Face shields
- Protective clothing
- Latex gloves

Grading System:

An overall grade of C or higher is required for transferability.

A 94 – 100  
B 85 – 93  
C 80 – 84  
D 70 – 79  
F 0 – 69

Student Learning Outcomes:

- Identify and demonstrate proficiency in immunological tests performed in the medical office.
- Identify and demonstrate proficiency in basic techniques used in microbiology.
- Demonstrate proficiency in phlebotomy technique.
- Identify and demonstrate proficiency in clinical chemistry tests performed in the medical office.
- Identify human fluids that may be used in chemical analysis.
Identify the basic structures of the circulatory system.

Recognize the reasons why collection and transportation of specimens are critical to testing microbial specimens.

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MED 118
Pharmacology for the Medical Assistant

Hours: Class 3, Lab 3, Credit 4
Pre-requisite: Successful completion of prior program requirements.
Co-requisite: None

Course Description:
This course provides a study of medical office pharmacology and drug calculations along with medication preparation and administration.

Course Topics:
- Concepts and Legalities with Drug Therapy
- Differentiating Forms of Drugs
- Interpreting, Telephoning, and Writing Prescriptions
- Basic Arithmetic Calculations for Medication
- Administering Nonparenteral Medications
- Administering Parenteral Medications
- Classifications of Drugs and their Effects
- Drug Effects on Body Systems
- Techniques for Successful Medication Administration

Required Materials:
- Calculator

Grading System:
An overall grade of C or higher is required for transferability.

A 94 – 100
B 85 – 93
C 80 – 84
D 70 – 79
F 0 – 69

Student Learning Outcomes:
- Demonstrate knowledge of concepts and legalities associated with drug therapy.
- Differentiate forms of drugs and how they act on the body.
- Demonstrate proper technique necessary for interpreting, telephoning, and writing a prescription.
- Differentiate basic arithmetic calculations and abbreviations required for medication administration.
- Compare and contrast the components of a drug label.
- Analyze with 90% accuracy the ability to calculate dosages.
- Differentiate techniques for administering nonparenteral medications.
- Differentiate techniques for administering parenteral medications.
- Differentiate classifications of drugs and their effects for multi-system applications.
- Differentiate classifications of drugs and their effects on body systems.
- Demonstrate techniques for successful medication administration.

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MED 120
Medical Assistant Emergency Preparedness
MED 134

Medical Assisting Financial Management

Hours: Class 1, Lab 3, Credit 2
Pre-requisite: Successful completion of prior program requirements.
Co-requisite: MED 114, MED 116
Course Description:
This course is the study of the daily financial practices, insurance coding, billing and collections, and accounting practices in the medical office environment.

Course Topics:
- Major Types of Insurance Programs
- Use of the ICD-9-CM Codes
- Linking Diagnoses and Procedures
- Billing Procedures
- Medicare and Medicaid
Managed Care and Private Payer

Required Materials:
- Pin drive
- Mouse and mouse pad

Grading System:
An overall grade of C or higher is required for transferability.

A 93 – 100
B 85 – 92
C 75 – 84
D 65 – 74
F 0 – 64

Student Learning Outcomes:
- Describe the major types of insurance programs encountered in the medical office and how insurance claims are proficiently processed.
- Demonstrate effective use of the ICD-9-CM to report correct diagnostic codes.
- Apply CPT-4 to report correct physician practice codes.
- Properly link diagnoses and procedures when reporting services for reimbursement.
- Perform the calculations and billing procedures used for patient payments.
- Complete the basic HCFA-1500 form using patient and encounter information.
- Identify the steps payers follow to adjudicate claims.
- Prepare correct Medicare and Medicaid primary and secondary claims.
- Prepare correct managed care and private payer primary and secondary claims.
- Develop employment strategies necessary for a successful transition in the job market.
- Demonstrate proficiency in the computerized management of the medical office.

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MED 158
Clinical Office Experience

Hours: Class 2, Lab 18, Credit 8
Pre-requisite: Successful completion of prior program requirements. (Instructor Consent)
Co-requisite: None
Course Description:
This course provides practical experience in selected clinical office settings.

Course Topics:
- Professionalism
- Effective Verbal and Non-verbal Communication
- Administrative Office Duties
- Clinical Office Duties
- Clinical Laboratory Duties
- Legal Concepts
- Patient Instruction
- Operational Functions

Required Materials:
- Stethoscope
- Full Uniform and Uniform Shoes
- Pens/Pencils/Calculator

Grading System:
An overall grade of C or higher is required for transferability.
A 94 – 100
B 85 – 93
C 80 – 84
D 70 – 79
F 0 – 69

Student Learning Outcomes:
• Demonstrate professionalism.
• Demonstrate effective verbal and non-verbal communication.
• Perform administrative office duties.
• Perform clinical office duties.
• Perform clinical laboratory duties.
• Apply legal concepts.
• Provide patient instruction.
• Perform operational functions.
• Apply medical assisting principles in test taking.
• Identify how diagnostic imaging relates to the practice of medical assisting.
• Distinguish various techniques used in medical specialty examinations and procedures of the body systems.

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MET 214

Fluid Mechanics

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: MAT 110
Co-requisite: None

Course Description:
This course is a study of the physical properties of fluids and includes hydrostatics, buoyancy, flow of incompressible fluids, orifices, venturis and nozzles.

Course Topics:
• Properties of fluids including density, specific weight, specific gravity and viscosity.
• Pressure forces exerted on submerged surfaces
• Buoyant force and stability of floating and submerged bodies
• Reynolds number, Bernoulli's equation and flow condition
• The energy loss in a fluid system
• The operation of various pumps.

Required Materials:
• None

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
• Solve engineering technology problems using practical knowledge of mathematics, science, engineering and technology.
• Show knowledge of the steps of successful problem solving.
• Recognize how experimental results relate or differ from theory.
• Use electronic or industrial schematics in finding solutions to given case studies, scenarios or word problems.
• Choose the appropriate solution to engineering technology problems based on given criteria.

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MET 224

Hydraulics and Pneumatics

Hours: Class 2, Lab 3, Credit 3
Pre-requisite: MAT 110
Co-requisite: None

Course Description:

This course covers basic hydraulics and pneumatic principles and circuits. System components such as pumps, compressors, piping, valves, cylinders, fluid motors, accumulators and receivers are discussed.

Course Topics:

- Hydraulic and pneumatic principles, operations, systems, and components.
- The basic principles of hydraulic power.
- Schematic and pictorial drawings of various working hydraulic circuits.
- Inspection and repair of hydraulic and pneumatic cylinders.
- Inspection, and repair of hydraulic and pneumatic valves.
- The operation of various pumps.

Required Materials:

- None

Grading System:

An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:

- Solve engineering technology problems using practical knowledge of mathematics, science, engineering and technology.
- Show knowledge of the steps of successful problem solving.
- Choose the appropriate solution to engineering technology problems based on given criteria.
- Use electronic or industrial schematics in finding solutions to given case studies, scenarios or word problems.
- Plan, produce and orally deliver a digital presentation that utilizes graphics on a given technical topic.

MET 227

Instrumentation Principles

Hours: Class 1, Lab 3, Credit 2
Pre-requisite: MAT 110
Co-requisite: None

Course Description:

This course covers the selection, application and calibration of valves, sensors, transmitters, recorders, and other devices used to measure and control fluid level, pressure, flow, density, temperature, and humidity in an industrial environment.

Course Topics:

- Control system and instrumentation.
- Calibration
- Pressure, flow, liquid level, temperature, and pneumatics and control valve actuators
- Controller systems and applications
- Instrumentation installation, maintenance, and troubleshooting
Process control systems

Required Materials:
None

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:

Solve engineering technology problems using practical knowledge of mathematics, science, engineering and technology.
Show knowledge of the steps of successful problem solving.
Design, troubleshoot and test electronic or industrial circuits.
Use electronic or industrial schematics in finding solutions to given case studies, scenarios or word problems.
Choose the appropriate solution to engineering technology problems based on given criteria.

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MGT 101
Principles of Management

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 032, RDG 032 with a minimum grade of "C."
Co-requisite: None
Course Description:
This course is a study of management theories, emphasizing the management functions of planning, decision making, organizing, leading, and controlling.

Course Topics:
- Roles of supervisor, first-line managers, and upper management.
- Globalization in the competitive marketplace.
- Overview of Human Resource principles that apply to managers.
- Issues and challenges of leading employees.

Required Materials:
- Student should have access to a computer with Microsoft Office (Word) and Internet.

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Compare the Four Primary Functions of Management.
- Contrast the role of the supervisor with that of the manager.
- Evaluate the importance of planning and control in management and supervision.
- Illustrate the challenges of the changing environment of management, including workforce diversity and global
• Describe the elements associated with organizing a competitive organization.
• Summarize the issues and challenges of leading employees.
• Analyze a Fortune 500 company.

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MGT 110
Office Management

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 032, MAT 032, and RDG 032 with a minimum grade of "C."
Co-requisite: None

Course Description:

This course is a study of various approaches to office organization and management, personnel selection and training, and ergonomics in the modern office.

Course Topics:
• Functions of management
• Leadership/management styles
• Employee selection and motivation and related legislation
• Ergonomics
• Workplace safety issues

Required Materials:
• One USB/jump disk or sky drive onto which all typed assignments will be saved

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
• Identify the functions of management.
• Examine laws that affect HR management.
• Compose relevant policy statements.
• Utilize effective leadership practices.
• Summarize effective ergonomic principles.
• Identify workplace safety procedures.

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MGT 150
Fundamentals of Supervision

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 032, MAT 032, RDG 032 with a minimum grade of "C."
Co-requisite: None

Course Description:

This course is a study of supervisory principles and techniques required to effectively manage human resources in an organization. First-line management is emphasized.

Course Topics:
• Roles of employees and supervisors.
• Four principles of management and how they work with supervision.
• Interaction between human resources and supervisors.
• Problem solving and conflict resolution between employees.
Motivating employees.
Differences between leaders and managers.
Communication skills needed for supervisors.
Using groups in the workplace.

Required Materials:
Student should have access to a computer with Microsoft Office (Word) and Internet.

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
Evaluate the difference between an employee and supervisor.
Apply the four principles of management to supervision.
Evaluate the importance of human resources and your new role as a supervisor.
Apply initiatives for problem solving and conflict resolution.
Apply techniques to properly motivate your workforce.
Evaluate the difference between leaders and managers.
Develop communication skills needed in the 21st Century to become a positive change agent.
Effectively use groups in a work setting.

MGT 201
Human Resource Management

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: MAT 032, MGT 101 with a minimum grade of “C.”
Co-requisite: None

Course Description:
This course is a study of personnel administration functions within a business organization. Major areas of study include job analysis; recruitment, selection and assessment of personnel; and wage, salary and benefit administration.

Course Topics:
- Responsibilities and requirements of the Human Resource Manager’s job.
- Legal environment the HRM must operate and comply within.
- Job design, human resource planning, and the employment process.
- HRM’s role in overseeing orientation, performance evaluations, career development, training, and organization development.
- Types of benefits available to employees.

Required Materials:
- This is a custom textbook made just for SCC MGT 201. Please purchase in The Book Inn to insure you receive the proper materials.
- Online component access code sold with textbook in The Book Inn.
- Student should have access to a computer with Microsoft Office (Word) and Internet.

Grading System:
An overall grade of C or higher is required for transferability.
MGT 210  
Employee Selection and Retention

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: MGT 201 with a minimum grade of C
Co-requisite: None

Course Description:
This course examines how to identify and assess employment needs within an organization. Students will also study the functions of recruitment, selection, and training, with an emphasis on employee retention.

Course Topics:
- Strategic staffing concept, components, and goals
- The firm's business strategy
- Equal employment opportunity, affirmative action and quotas
- Job descriptions and person specifications
- Common job analysis methods
- Workforce planning process
- Sourcing: identifying recruits
- Recruiting
- Training and developing recruiters
- Applicant attraction strategies
- External assessment goals
- External assessment methods
- Internal assessment methods
- The employment contract
- Orienting and socializing new employees
- Involuntary employee separations

Required Materials:
- Computer with Internet access
- Word processing software (must be able to save Word format)
- Anti-virus software

Grading System:
An overall grade of C or higher is required for transferability.
A 90 – 100
B 80 – 89
C 70 – 79
MGT 230
Managing Information Resources

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: CPT 101
Co-requisite: None

Course Description:
This course is a study of the development, use and management of information resources, and systems in business and industry.

Course Topics:
- Importance of a management information system (MIS)
- Hardware, software, and data
- Procedures and process management
- Organizational strategy
- Competitive strategy
- Value chain
- Servers
- Cloud computing
- Databases
- Local area networks
- E-commerce
- Data-mining and data warehousing
- Security

Required Materials:
- Computer with Internet access
- Word processing software (must be able to save Word format)
- Anti-virus software

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Summarize the importance of a management information system.
- Categorize the components of a management information process system.
- Analyze the purpose of a database.
- Organize the tools utilized of an information system to pursue a competitive advantage.
- Distinguish the components of a management information systems’ data communication network.
- Explain the importance of business intelligence systems.
- Propose an information security management system.

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MGT 255
Organizational Behavior

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: MGT 101
Co-requisite: None

Course Description:
This course is a study of effective individual and group behavior in an organization to maximize productivity, and psychological and social satisfaction.

Course Topics:
- The Fundamentals of human behavior in organizations
- Personalities
- Perceptions
- Attitudes
- Emotions
- Effective communication
- Leadership
- Job design
- Organizational culture

Required Materials:
- Computer with Internet access
- Word processing software (must be able to save Word format)
- Anti-virus software

Grading System:
An overall grade of C or higher is required for transferability.
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Distinguish the fundamentals of human behavior in organizations.
- Differentiate the types of individual personalities, perceptions, attitudes, and emotions.
- Evaluate the differences of individuals in an organization.
- Explain the influence of effective communication in decision making and leadership.
- Explain the influence of corporate culture in an organization.
- Assess the need and importance for a well designed job.

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MKT 101
Marketing

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 032, RDG 032 with a minimum grade of "C."
Co-requisite: None

Course Description:
This course covers an introduction to the field of marketing with a detailed study of the marketing concept and the processes of product development, pricing, promotion, and marketing distribution.

Course Topics:
- Foundation of marketing
- Elements of marketing planning
- Psychology of consumer behavior
Process of creating, managing, and pricing products
Services and tangible products
Elements involved in product distribution
Elements of the promotional mix

Required Materials:
Student should have access to a computer with Microsoft Office (Word) and Internet.

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
Summarize the foundation of marketing.
Differentiate the elements of marketing planning.
Describe the psychology of consumer behavior.
Describe the process of creating products.
Summarize the process of managing products.
Compare services to tangible products.
Review the concepts of pricing products.
Describe the elements involved in product distribution.
Compare the elements that make up the promotional mix.
Complete a semester long project addressing the four principles of marketing.

MKT 110
Retailing

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: MAT 032, ENG 032, RDG 032 with a minimum grade of "C"
Co-requisite: None
Course Description:
This course is a study of the importance of retailing in American business and covers the concepts of store location, layout, merchandising, display, pricing, inventory control, promotional programs and profit management.

Course Topics:
The influence of retailing on the American economy
Planning in retailing
The retailing environment
Location analysis
Management of retail operations
Retail administration
New store proposals

Required Materials:
Computer with Internet access
Word processing software (must be able to save Word format)
Anti-virus software

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
MKT 120
Sales Principles

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: MAT 032, ENG 032, RDG 032 with a minimum grade of "C."
Co-requisite: None
Course Description:
This course is a study of the personal selling process with special emphasis on determining customer needs and developing effective communications and presentation skills.

Course Topics:
- The professional sales career
- Components of professional selling
- The base of the sales plan
- The heart of the sales plan
- Building future sales
- Special aspects of the sales career

Required Materials:
- Computer with Internet access
- Word processing software (must be able to save Word format)
- Anti-virus software

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Recognize how sales have evolved into a professional career.
- Identify the components that make up the foundation of professional selling.
- Describe the base of the sales plan.
- Analyze the elements of the heart of the sales plan.
- Classify the elements of building future sales.
- Compare the special aspects of a variety of sales careers.

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MKT 123
Event Planning and Promotion

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 032, MAT 032, RDG 032 with a minimum grade of "C."

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Co-requisite: None
Course Description:
This course is a study of the planning and implementation of special events with emphasis on sponsorship solicitation, permit applications, logistics, applicable laws, and special event promotion.

Course Topics:
- Role of event planners and why clients hire them.
- Different types of events
- Role of the vendor in an event from planning to execution of the event.
- Budgets, contracts, and insurance requirements for different types of events.
- "Behind the scenes" work of events.
- Pre-planning to follow-up processes that event planner takes on.

Required Materials:
- Student should have access to a computer with Microsoft Office (Word) and Internet.

Grading System:
An overall grade of C or higher is required for transferability.
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Explain what today's event planner does and why clients use event planners.
- Demonstrate what is involved in a job as an event planner.
- Describe the importance of each vendor in the process from planning to execution of the event.
- Break down an event planner's role regarding money, contracts, and insurance for each event.
- Explain and show the required preliminary work for events.
- Outline all parts of an entire event from pre-planning to follow-up.
- Differentiate types of events.

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MKT 221
Sales Strategies
Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 032, RDG 032 with a minimum grade of "C."
Co-requisite: None
Course Description:
This course is a study of the organization and function of sales management, with emphasis on sales forecasting and the hiring and training of sales personnel.

Course Topics:
- Personal selling function
- Strategic management and the sales function
- Issues associated with developing the sales force
- Leadership and motivation
- Sales force compensation
- Benchmarking
- Evaluating and controlling sales force performance

Required Materials:
• Computer with Internet access
• Word processing software (must be able to save Word format)
• Anti-virus software

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
• Describe the personal selling function.
• Distinguish the strategic role of the sales function.
• Describe the issues associated with developing the sales force.
• Differentiate the elements with directing the sales force.
• Contrast the processes for evaluating sales force effectiveness and performance.
• Analyze the sales career.

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MKT 240
Advertising

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: MKT 101 with a minimum grade of “C.”
Co-requisite: None

Course Description:
This course is a study of the role of advertising in the marketing of goods and service, including types of advertising, media, how advertising is created, agency functions, and regulatory aspects of advertising.

Course Topics:
• Advertising methods for specific target markets.
• Effects of advertising on economic, social, and legal issues in business.
• Advertising campaigns to include: budget, proper media channels, strategy, and creation of the advertisement itself.

Required Materials:
• Student should have access to a computer with Microsoft Office (Word) and Internet.

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
• Distinguish between the different functions of advertising.
• Plan efficiently and effectively for the best advertising method based on the target market.
• Identify the key effects advertising has on economic, social, and legal issues in business.
• Demonstrate an understanding of how an advertising campaign works, including: budget, proper media channels, strategy, and creation of the advertisement itself.
Construct the different stages of a successful advertising campaign.

MKT 260
Marketing Management

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: MGT 101 and MKT 101 with a minimum grade of C
Co-requisite: None
Course Description:

This course is a study of the marketing system from the decision-maker's view, including how marketing strategies are planned and utilized in the marketplace.

Course Topics:

- Strategic marketing management and the economy
- Market oriented strategic planning
- Consumer buying behavior
- Market segments and target markets
- Product life cycle
- Positioning
- Product management
- Pricing strategies
- Marketing channels
- Logistics
- Advertising, sales promotions, public relations, and direct marketing
- Marketing plan

Required Materials:

- Computer with Internet access.
  View computer requirements for the online portion of the course at www.sccsc.edu/OnlineSyllabiPolicies/.
- Word processing software (must be able to save Word format)
- Anti-virus software

Grading System:

An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:

- Define strategic management.
- Describe the importance of building customer satisfaction, value, and retention.
- Demonstrate how to analyze the key areas of a defined market.
- Distinguish the techniques utilized with developing marketing strategies.
- Compare the strategies associated with product management, branding decisions, and the pricing of products and services.
- Distinguish the available options utilized in the management and delivery of marketing programs by a market-based business.
- Create a marketing plan.

MLT 102
Fundamentals of Medical Laboratory Technology
MLT 105
Medical Microbiology

Hours: Class 3, Lab 3, Credit 4
Pre-requisite: Admission into the Medical Laboratory Technology Program.
Co-requisite: None
Course Description:
This course provides a survey of organisms encountered in the clinical microbiology laboratory, including sterilization and disinfection techniques.
Course Topics:
- Specimen processing, culturing, and identification techniques including microscopy.
- Medically important parasites
- Medically important fungi
- Virology
- Medically important Mycoplasma, Chlamydia and Rickettsia
- Medically important Mycobacterium and Nocardia asteroides
- Medically important anaerobic bacteria
- Antimicrobial susceptibility

Required Materials:
In order to participate in lab, students must be wearing floor-length pants, closed-toe, closed heel shoes. Pants may not have rips, tears, etc. Students must also wear a liquid impervious lab coat, gloves and a face shield (available in SCC bookstore) whenever handling clinical specimens.

Grading System:
Grades are not rounded. An overall grade of C or higher is required to pass this course.

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<td>72 – 77</td>
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Student Learning Outcomes:
- Demonstrate the processes and procedures used in the processing, culturing, and identifying of medically important organisms.
- Analyze morphology and biochemical tests for identification of the following:
  - Intestinal, blood, and tissue parasites.
  - Yeasts
  - Thermally dimorphic fungi
  - Dermatophytes
  - Mycobacteria and Nocardia asteroides
  - Anaerobes
- Differentiate dermatophytes from the common laboratory fungal contaminants.
- Compare safety procedures and appropriate specimen processing of the medically important Mycoplasma, Chlamydia, Rickettsia, and Viruses.
- Explain and demonstrate the processes and procedures used in antimicrobial susceptibility testing.
- Correlate laboratory findings with diseases and treatments.

MLT 110
Hematology
Hours: Class 3, Lab 3, Credit 4
Pre-requisite: Successful completion of prior program requirements.
Co-requisite: None
Course Description:
This course provides a study of the basic principles of hematology, including hemoglobin, hematocrit, white and red counts, and identification of blood cells.

Course Topics:
- Manual and automated cell counts
- RBC indices calculations and RBC morphology
- WBC differential cell count
Erythrocyte Sedimentation Rate (ESR), Reticulocyte Count
- Manual Platelet Counts
- Semi-automated Prothrombin and Partial Thromboplastin times

**Required Materials:**

In order to participate in lab, students must be wearing floor-length pants, closed-toe, closed heel shoes. Pants may not have rips, tears, etc. Students must also wear a liquid impervious lab coat, gloves and a face shield (available in SCC bookstore) whenever handling clinical specimens. Additional classroom/lab materials and guidelines will be on the course syllabus addendum distributed by the instructor.

**Grading System:**

Final grades are not rounded. A grade of 78 is required to pass this course.

- A 94 – 100
- B 86 – 93
- C 78 – 85
- D 72 – 77
- F 0 – 71

**Student Learning Outcomes:**

- Demonstrate the process and procedures for performing hemoglobin, hematocrit, and erythrocyte indices determinations.
- Collect and process samples for leukocyte, platelet and eosinophil counts.
- Explain the process of automation in the hematology laboratory.
- Perform differential white blood cell counts from a peripheral blood smear.
- Analyze erythrocyte sedimentation rates (ESR) and reticulocyte counts.
- Describe tests performed on cerebrospinal fluid (CSF) and other body fluids, relating them to disease processes.
- Evaluate the role of platelets and blood vessels in Hemostasis.
- Evaluate the role of clotting factors in hemostasis.

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**MLT 115**

**Immunology**

**Hours:** Class 2, Lab 3, Credit 3

**Pre-requisite:** Admission into the Medical Laboratory Technology Program.

**Co-requisite:** None

**Course Description:**

This course provides a study of the immune system, disease states, and the basic principles of immunological testing.

**Course Topics:**

- Basic concepts of immunology, immunity and inflammation.
- Antibodies and Antigens
- Antibody/Antigen reactions
- Cells and soluble mediators of the immune response
- Serological methods and techniques
- Immune response and serological diagnosis of hypersensitivity and autoimmune disorders
- Immune response and serological diagnosis of viral infections
- Immune response and serological diagnosis of selected infectious diseases

**Required Materials:**
In order to participate in lab, students must be wearing floor-length pants, closed-toe, closed heel shoes. Pants may not have rips, tears, etc. Students must also wear a liquid impervious lab coat, gloves and a face shield (available in SCC bookstore) whenever handling clinical specimens.

Grading System:
Grades are not rounded. An overall grade of C or higher is required to pass this course.

A 94 – 100
B 86 – 93
C 78 – 85
D 72 – 77
F 0 – 71

Student Learning Outcomes:
- Explain the terminology and basic concepts of immunology, immunity, lines of defense, and inflammation.
- Describe the structure, synthesis, and function of immunoglobulin.
- Summarize the Major Histocompatibility Complex and tumor markers.
- Describe the basic concepts of antigen-antibody reactions.
- Explain the function of the cells and soluble mediators involved in the immune response.
- Evaluate serological methods and techniques.
- Demonstrate mastery of processes and procedures for practicing laboratory safety.
- Develop the laboratory skills for accurately performing and interpreting serological test results.
- Correlate laboratory findings with hypersensitivity reactions, selected autoimmune disorders, viral infections, and selected infectious agents.

MLT 120
Immunohematology

Hours: Class 3, Lab 3, Credit 4

Pre-requisite: Successful completion of prior program requirements.

Co-requisite: None

Course Description:
This course introduces the theory and practice of blood banking, including the ABO, RH and other blood group systems, compatibility testing, and HDN.

Course Topics:
- Fundamental principles of Immunohematology, including ABO blood type interpretations
- Preparation, handling, and storage of blood bank reagents
- Genetic Principles of ABO and Rh Blood groups
- Major antigens of other blood group systems and identification methods
- Compatibility testing and component selection
- Quality control of blood bank reagents and equipment
- Transfusion Reactions
- Donor selection, component preparation, and storage

Required Materials:
In order to participate in lab, students must be wearing floor-length pants, closed-toe, closed heel shoes. Pants may not have rips, tears, etc. Students must also wear a liquid impervious lab coat, gloves and a face shield (available in SCC bookstore) whenever handling clinical specimens.

Grading System:
Grades are not rounded. An overall grade of C or higher is required to pass this course.

A 94 – 100
B 86 – 93
C 78 – 85
D 72 – 77
F 0 – 71

Student Learning Outcomes:

- Interpret ABO blood types using the fundamental principles of Immunohematology.
- Describe the preparation, handling, storage, and quality control for both blood bank reagents and blood bank equipment.
- Evaluate Genetic Principles in ABO and Rh blood groups.
- Identify the major antigens classified within the other blood group systems.
- Analyze tests to detect and identify clinically significant blood group antibodies.
- Assess compatibility tests.
- Assess adverse effects of transfusion.
- Analyze tests for Hemolytic Disease of the Fetus and Newborn (HDFN).
- Assess donor selection.
- Explain the process for component preparation and storage parameters of all blood products.

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MLT 130
Clinical Chemistry

Hours: Class 3, Lab 3, Credit 4
Pre-requisite: Successful completion of prior program requirements.
Co-requisite: None
Course Description:

This course focuses on the study of nutritional, functional and excretional chemicals in blood and body fluids, including testing techniques and clinical significance.

Course Topics:

- General Chemistry techniques, math calculations, statistical QC and pipetting
- Instrumentation
- Total Protein measurement including Protein Electrophoresis
- Non-Protein Nitrogens
- Clinically Significant Enzymes
- Carbohydrates and Lipids

Required Materials:

In order to participate in lab, students must be wearing floor-length pants, closed-toe, closed heel shoes. Pants may not have rips, tears, etc. Students must also wear a liquid impervious lab coat, gloves and a face shield (available in SCC bookstore) whenever handling clinical specimens. Additional classroom/lab materials and guidelines will be on the course syllabus addendum distributed by the instructor.

Grading System:

Final grades are not rounded. A grade of 78 is required to pass this course.

A 94 – 100
B 86 – 93
C 78 – 85
D 72 – 77
F 0 – 71
Student Learning Outcomes:

- Calculate concentrations and dilutions using mathematical applications and metric conversions.
- Use statistical formulas in assessing and validating laboratory data.
- Identify the basic components of a spectrophotometer.
- Apply Beer's Law to find concentration of an unknown substance after determining absorbance.
- Explain and demonstrate the testing procedures for assessing:
  - Protein disorders
  - Kidney function
  - Enzyme status
  - Hyperglycemia and hypoglycemia
  - Lipid abnormalities
- Accurately record and report results of the above tests, indicating normal and abnormal values.

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MLT 205
Advanced Microbiology

Hours: Class 3, Lab 3, Credit 4
Pre-requisite: Successful completion of prior program requirements.
Co-requisite: None
Course Description:

This course provides a detailed study of microorganisms and the currently accepted procedures for identification of these microorganisms in the clinical laboratory.

Course Topics:

- Basic Microbiology techniques, tools, and media.
- Clinically significant Staphylococci, Micrococci, and Streptococci.
- Clinically significant Neisseria, Moraxella catarrhalis, Haemophilus, HACEK group and Capnocytophaga.
- Clinically significant Enterobacteriaceae
- Clinically significant nonfermentative gram negative bacilli and miscellaneous gram negative bacilli.
- Clinically significant aerobic gram positive bacilli
- Agents of bioterrorism.
- Differentiation of normal flora bacteria and pathogens

Required Materials:

In order to participate in lab, students must be wearing floor-length pants, closed-toe, closed heel shoes. Pants may not have rips, tears, etc. Students must also wear a liquid impervious lab coat, gloves and a face shield (available in SCC bookstore) whenever handling clinical specimens.

Grading System:

Grades are not rounded. An overall grade of C or higher is required to pass this course.

A 94 – 100
B 86 – 93
C 78 – 85
D 72 – 77
F 0 – 71

Student Learning Outcomes:

- Identify and describe the following clinically significant bacteria:
  - Staphylococci
  - Micrococcus
  - Streptococci
  - Neisseria
  - Moraxella catarrhalis
- Haemophilus
- HACEK group
- Capnocytophaga
- Enterobacteriaceae
- Nonfermentative gram negative bacilli
- Miscellaneous gram negative bacilli.
- Aerobic gram positive bacilli

- Demonstrate mastery of basic microbiological techniques and tools used to identify clinically significant bacteria.
- Recognize and describe agents of bioterrorism.
- Differentiate normal flora bacteria and pathogens.
- Correlate laboratory findings with diseases and treatments.

MLT 210
Advanced Hematology

Hours: Class 3, Lab 3, Credit 4
Pre-requisite: Successful completion of prior program requirements.
Co-requisite: None
Course Description:
This course provides a study of the diseases of blood cells and other hematologic procedures including coagulation.

Course Topics:
- RBC maturation, morphology and anemias
- WBC maturation, abnormal morphology and leukemias
- RBC and WBC abnormal differential cell counts
- Platelet counts and Coagulopathies

Required Materials:
In order to participate in lab, students must be wearing floor-length pants, closed-toe, closed heel shoes. Pants may not have rips, tears, etc. Students must also wear a liquid impervious lab coat, gloves and a face shield (available in SCC bookstore) whenever handling clinical specimens. Additional classroom/lab materials and guidelines will be on the course syllabus addendum distributed by the instructor.

Grading System:
Final grades are not rounded. A grade of 78 is required to pass this course.
A 94 – 100
B 86 – 93
C 78 – 85
D 72 – 77
F 0 – 71

Student Learning Outcomes:
- Evaluate normal and abnormal red blood cell maturation/morphology, relating it to abnormal conditions and blood findings.
- Assess hemoglobin and red cell disorders in relation to clinical and laboratory findings.
- Interpret laboratory findings in hemolytic and other anemias.
- Evaluate abnormal differentials of granulocytes, relating them to abnormal conditions and blood findings.
- Evaluate abnormal differentials of lymphocytes and plasmacytes, relating them to the most probable cause of the condition and abnormal laboratory findings.
- Evaluate the congenital and acquired thrombocyte and vasculature disorders and the tests used to detect these disorders.
- Evaluate the congenital and acquired clotting factor disorders.
- Evaluate the role of the fibrinolytic system in hemostasis and the hypercoagulable state.
MLT 219
Clinical Instrumentation

Hours: Class 2, Lab 3, Credit 3
Pre-requisite: Successful completion of prior program requirements.
Co-requisite: None

Course Description:

This course provides the theory and application of clinical laboratory instrumentation, including calibration, operation, and maintenance.

Course Topics:

- Heme and products of heme degradation
- Measurement of electrolytes and arterial blood gases
- Measurement of minerals
- Study of Hormones
- Significance of Therapeutic Drug Monitoring and Toxicology

Required Materials:

In order to participate in lab, students must be wearing floor-length pants, closed-toe, closed heel shoes. Pants may not have rips, tears, etc. Students must also wear a liquid impervious lab coat, gloves and a face shield (available in SCC bookstore) whenever handling clinical specimens. Additional classroom/lab materials and guidelines will be on the course syllabus addendum distributed by the instructor.

Grading System:

Final grades are not rounded. A grade of 78 is required to pass this course.

A 94 – 100
B 86 – 93
C 78 – 85
D 72 – 77
F 0 – 71

Student Learning Outcomes:

- Explain how Tumor Markers are used in the diagnosis and treatment of cancer.
- Evaluate test results to assess electrolytes.
- Evaluate blood gas test results to assess acid-base balance.
- Evaluate test results to assess mineral metabolism.
- Evaluate test results to assess the endocrine system.
- Describe therapeutic drug monitoring and toxicology.
- Evaluate the results used to assess heme degradation and hepatic disorders.

MLT 241
Medical Laboratory Transition

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: Successful completion of prior program requirements.
Co-requisite: None

Course Description:

This course correlates laboratory procedures and concepts, with emphasis on higher level cognitive applications.

Course Topics:

- Professional Development
- Resume and interview skills
- Teach a clinical laboratory procedure and write a standard operating procedure.
- Hematology and Hemostasis review
- Chemistry and Urinalysis review
- Immunology and Immunohematology review
- Microbiology Review
- Test taking skills

**Required Materials:**

In order to participate in one of the Online/Hybrid classes, you need a computer that meets the following minimum requirements:

- Recent computer (last 3 years) with Internet access
- Internet Explorer 7.0 or higher or other current browser
- Java
- Word-processing software (must be able to save Word format)
- and up-to-date anti-virus software.

**Grading System:**

Grades are not rounded. A grade of 78 is required to pass this course.

- A 94 – 100
- B 86 – 93
- C 78 – 85
- D 72 – 77
- F 0 – 71

**Student Learning Outcomes:**

- Apply principles of Medical Laboratory Technology to practice national registry exam questions.
- Demonstrate effective written communication skills by writing a review of a journal article.
- Teach a laboratory technique.
- Evaluate and enhance (as needed) personal strengths and weaknesses in Medical Laboratory Technology before taking the national registry exam.
- Demonstrate the professional skills needed for following up on job leads, creating an organized resume and interviewing.

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**MLT 251**

**Clinical Experience I**

**Hours:** Class 0, Lab 15, Credit 5

**Pre-requisite:** Successful completion of prior program requirements.

**Co-requisite:** None

**Course Description:**

This course provides an integrated, clinically-based rotation which correlates cognitive and technical skills in selected areas of the clinical laboratory.

**Course Topics:**

- Performance of tests in areas of Transfusion Medicine (Blood Banking), Hematology, Chemistry, Microbiology, and Urinalysis
- Collecting blood samples via venous and capillary punctures
- Correlating laboratory test results with patient diagnosis and treatment

**Required Materials:**

- Each student will be required to attend OSHA and HIPPA training at one of the clinical facilities or complete OSHA and HIPPA training on campus prior to beginning clinical training
- Students must wear a Photo ID while training at the clinical facility. The Photo ID is obtained in Admissions. The student
must purchase a lanyard or clip to display the ID on his/her person at all times.

- Prior to entering a Health and Human Services program each student must submit the specific Required Tests/Immunizations Documentation and Medical History forms with appropriate information documented and signed by his/her physician
- At the beginning of the second year of training, each student must be retested for tuberculosis
- A criminal background investigation (CBI) and drug testing are required for each Health and Human Services student who has been accepted into a curriculum program of study with clinical experiences
- All students must wear clean, well-fitting scrubs to class and clinical.

Grading System:

Final grades are not rounded. A grade of 78 is required to pass this course.

The final course grade for MLT 251 will be made up of 1 major and 1 minor rotation grade.

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Student Learning Outcomes: Students must master all MLT 251 student learning outcomes in order to receive an overall passing grade in this course.

- Practice professional behavior consistent with current academic and professional standards.
- Demonstrate mastery of all procedures in Blood Bank.
- Demonstrate mastery of all procedures in Clinical Chemistry.
- Demonstrate mastery of all procedures in Hematology and Hemastasis.
- Demonstrate mastery of all procedures in Microbiology, Parasitology and Serology.
- Demonstrate mastery of all procedures in Urinalysis.
- Demonstrate mastery of all procedures in Blood Collection.

MLT 252

Clinical Experience II

Hours: Class 0, Lab 15, Credit 5

Pre-requisite: Successful completion of prior program requirements.

Co-requisite: None

Course Description:

This course provides an integrated, clinically-based rotation which correlates cognitive and technical skills in selected areas of the clinical laboratory.

Course Topics:

- Performance of tests in areas of Transfusion Medicine (Blood Banking), Hematology, Chemistry, Microbiology, and Urinalysis
- Collecting blood samples via venous and capillary punctures
- Correlating laboratory test results with patient diagnosis and treatment

Required Materials:

- Each student will be required to attend OSHA and HIPPA training at one of the clinical facilities or complete OSHA and HIPPA training on campus prior to beginning clinical training
Students must wear a Photo ID while training at the clinical facility. The Photo ID is obtained in Admissions. The student must purchase a lanyard or clip to display the ID on his/her person at all times.

Prior to entering a Health and Human Services program each student must submit the specific Required Tests/Immunizations Documentation and Medical History forms with appropriate information documented and signed by his/her physician.

At the beginning of the second year of training, each student must be retested for tuberculosis.

A criminal background investigation (CBI) and drug testing are required for each Health and Human Services student who has been accepted into a curriculum program of study with clinical experiences.

All students must wear clean, well-fitting scrubs to class and clinical.

**Grading System:**

Final grades are not rounded. A grade of 78 is required to pass this course.

The final course grade for MLT 252 will be made up of 1 major and 1 minor rotation grade.

- A 94 – 100
- B 86 – 93
- C 78 – 85
- D 72 – 77
- F 0 – 71

**Student Learning Outcomes:** Students must master all MLT 252 student learning outcomes in order to receive an overall passing grade in this course.

- Practice professional behavior consistent with current academic and professional standards.
- Demonstrate mastery of all procedures in Blood Bank.
- Demonstrate mastery of all procedures in Clinical Chemistry.
- Demonstrate mastery of all procedures in Hematology and Hemastasis.
- Demonstrate mastery of all procedures in Microbiology, Parasitology and Serology.
- Demonstrate mastery of all procedures in Urinalysis.
- Demonstrate mastery of all procedures in Blood Collection.

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**MLT 270**

**Clinical Applications**

*Hours: Class 3, Lab 27, Credit 12*

**Pre-requisite:** Successful completion of prior program requirements.

**Co-requisite:** None

**Course Description:**

This course provides sequential practical experience in selected areas of a supervised clinical setting.

**Course Topics:**

- Performance of tests in areas of Transfusion Medicine (Blood Banking), Hematology, Chemistry, Microbiology, and Urinalysis.
- Collecting blood samples via venous and capillary punctures.
- Correlating laboratory test results with patient diagnosis and treatment.

**Required Materials:**

- Each student will be required to attend OSHA and HIPPA training at one of the clinical facilities or complete OSHA and HIPPA training on campus prior to beginning clinical training.
Students must wear a Photo ID while training at the clinical facility. The Photo ID is obtained in Admissions. The student must purchase a lanyard or clip to display the ID on his/her person at all times.

Prior to entering a Health and Human Services program each student must submit the specific Required Tests/Immunizations Documentation and Medical History forms with appropriate information documented and signed by his/her physician.

At the beginning of the second year of training, each student must be retested for tuberculosis.

A criminal background investigation (CBI) and drug testing are required for each Health and Human Services student who has been accepted into a curriculum program of study with clinical experiences.

All students must wear clean, well-fitting scrubs to class and clinical.

Grading System:

Final grades are not rounded. A grade of 78 is required to pass this course.

The final course grade for MLT 270 will be made up of 1 major and 1 minor rotation grade.

A 94 – 100
B 86 – 93
C 78 – 85
D 72 – 77
F 0 – 71

Student Learning Outcomes: Students must master all MLT 270 student learning outcomes in order to receive an overall passing grade in this course.

- Practice professional behavior consistent with current academic and professional standards.
- Demonstrate mastery of all procedures in Blood Bank.
- Demonstrate mastery of all procedures in Clinical Chemistry.
- Demonstrate mastery of all procedures in Hematology and Hemastasis.
- Demonstrate mastery of all procedures in Microbiology, Parasitology and Serology.
- Demonstrate mastery of all procedures in Urinalysis.
- Demonstrate mastery of all procedures in Blood Collection.

MTH 120
Introduction to Massage

Hours: Class 3, Lab 3, Credit 4
Pre-requisite: Admission into the Therapeutic Massage Program.
Co-requisite: None
Course Description:

A comprehensive introduction to therapeutic massage including history, theories, benefits, contraindications, ethical considerations, and S.C. Law for licensure. Swedish techniques are introduced.

Course Topics:

- History and legal considerations of professional touch
- Ethical and professional considerations
- Effect, benefits, indications and contraindications of massage
- Safe and sanitary practice of massage and hydrotherapy
- Effective assessment and consultation for massage

Required Materials:

None
Grading System:
A grade of "C" or higher is required to continue in the associate degree program.
A 94 – 100
B 86 – 93
C 78 – 85
D 72 – 77
F 0 – 71

Student Learning Outcomes:

- Distinguish the legal considerations of professional touch.
- Identify individuals throughout the history who have influenced massage therapy today.
- Recognize the effects, benefits, indications and contraindications of massage.
- Cite components of the safe and sanitary practice of massage and hydrotherapy.
- Identify the components of effective consultation and assessment for massage.
- Prepare the environment and client for administering a full body Swedish massage.

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MTH 121
Principles of Massage I

Hours: Class 3, Lab 3, Credit 4
Pre-requisite: Admission into the Therapeutic Massage Program.
Co-requisite: None
Course Description:
This course is an in-depth study of Swedish massage techniques and applications to a complete body massage.

Course Topics:

- Safe and effective massage techniques
- Safe and effective assessment and communication techniques
- Techniques for upper and lower torso
- Professional qualities for corporate massage
- Techniques for a full body massage

Required Materials:
None

Grading System:
A grade of "C" or higher is required to continue in the associate degree program.
A 94 – 100
B 86 – 93
C 77 – 85
D 70 – 76
F 0 – 69

Student Learning Outcomes:

- Describe and demonstrate safe and effective techniques of basic massage.
- Demonstrate safe and effective assessment and communication techniques.
- Demonstrate techniques for upper torso massage.
- Demonstrate techniques for lower torso massage.
- Demonstrate a routine for corporate massage.
- Employ professional qualities during participation in public service events for massage.
- Demonstrate effective techniques for a full body massage.
MTH 122
Principles of Massage II

Hours: Class 3, Lab 3, Credit 4
Pre-requisite: Successful completion of prior program requirements.
Co-requisite: None

Course Description:
This course introduces basic assessment skills and application of therapeutic techniques to muscles, tendons, ligaments, and other structures.

Course Topics:
- Identifying and working with the muscles of the torso, chest and abdomen
- Identifying and working with the muscles of leg, ankle and foot
- Identifying and working with the muscles of back, scapula and posterior neck
- Identifying and working with the muscles of thigh and hip
- Identifying and working with the muscles of the forearm, wrist and hand
- Identifying and working with the muscles of the neck, head and jaw
- Working with sports massage and minute recovery massage
- Self-assessment skills
- Working with deep tissue and Swedish massage techniques

Required Materials:
None

Grading System:
A grade of "C" or higher is required to continue in the associate degree program.

A 94 – 100
B 86 – 93
C 77 – 85
D 70 – 76
F 0 – 69

Student Learning Outcomes:
- Identify and demonstrate therapeutic technique for the muscles of the torso, chest and abdomen.
- Identify and demonstrate therapeutic technique for muscles of the leg, ankle and foot.
- Identify and demonstrate therapeutic technique for the deep muscles of the back, scapula, and posterior neck.
- Identify and demonstrate therapeutic technique for the thigh and hip.
- Identify and demonstrate therapeutic technique for the muscles of the forearm, wrist and hand.
- Identify and demonstrate therapeutic technique for the muscles of the neck, head and jaw.
- Identify the components of sports massage and demonstrate a 15 minute pre-event massage and a 30 minute recovery massage.
- Demonstrate the use of self-assessment skills to document experiences of mandatory practice sessions outside of class.
- Demonstrate knowledge of deep tissue technique integrated with Swedish massage to give a one hour full body massage.

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Massage Clinical I

Hours: Class 1, Lab 6, Credit 3
Pre-requisite: Successful completion of prior program requirements.
Co-requisite: None
Course Description:

This course provides a clinical massage setting for experience in all aspects of delivering therapeutic massage.

Course Topics:
- Communication skills in the clinical setting
- Assessment skills to develop and implement a treatment plan
- Professional skills to manage a massage clinic
- Professional skills in giving and keeping records for a professional massage
- Teamwork and management skills using troubleshooting/problem solving skills involved in a massage clinic

Required Materials:
None

Grading System:
A grade of "C" or higher is required to continue in the associate degree program.
A 94 – 100
B 86 – 93
C 77 – 85
D 70 – 76
F 0 – 69

Student Learning Outcomes:
- Demonstrate communication skills in a clinical setting.
- Use assessment skills to develop and implement a treatment plan.
- Use professional skills to manage a massage clinic.
- Demonstrate professional skills in giving and keeping records for a professional massage.
- Demonstrate teamwork/management skills by using troubleshooting/problem solving skills involved in a massage clinic.

MTH 124
Massage Business Application

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: Successful completion of prior program requirements.
Co-requisite: None
Course Description:

This course addresses the basic business skills necessary to operate a massage business including writing resumes, marketing, bookkeeping, taxes, and record keeping.

Course Topics:
- Motivation/intentions for developing a therapeutic massage career
- Marketing strategies and advertising materials for a massage business
- Business management and record keeping
- Business plan and portfolio

Required Materials:
None

Grading System:
A grade of "C" or higher is required to continue in the associate degree program.
A 94 – 100
B 86 – 93
C 77 – 85
D 70 – 76
F 0 – 69

Student Learning Outcomes:
- Determine personal motivation/intentions for developing a therapeutic massage career.
- Negotiate appropriate employment contracts.
- Design a marketing strategy and advertising materials for a massage business.
- Develop a business management and record keeping system.
- Develop a business plan and portfolio.

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MTH 125
Massage Externship

Hours: Class 1, Lab 9, Credit 4
Pre-requisite: Successful completion of prior program requirements.
Co-requisite: None
Course Description:
This course provides practical experience in local professional therapeutic massage settings which apply advanced massage therapy skills. Students observe facility and business operations under the close supervision of licensed massage therapists.

Course Topics:
- Professional and ethical behavior within the business setting
- Performing therapeutic and relaxing massages
- Addressing client issues
- Developing verbal and written communication skills
- Business practices and inefficiencies that may occur during clinic

Required Materials:
None

Grading System:
A grade of "C" or higher is required to continue in the associate degree program.
A 94 – 100
B 86 – 93
C 77 – 85
D 70 – 76
F 0 – 69

Student Learning Outcomes:
- Demonstrate professional and ethical behavior within the business setting.
- Demonstrate therapeutic and relaxing massage skills.
- Use assessment skills to address and treat client complaint areas
- Practice professional verbal and written communication skills.
• Solve problems by evaluating business practices and troubleshooting inefficiencies that may occur during clinic.

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MTH 126
Pathology for Massage Therapy

Hours: Class 2, Lab 0, Credit 2
Pre-requisite: Successful completion of prior program requirements.
Co-requisite: None
Course Description:

This course covers basic pathology for the massage therapy student. The course includes signs and symptoms of diseases with emphasis on recognition and identification, as prescribed in massage therapy.

Course Topics:
- Integumentary System Conditions
- Musculoskeletal System Conditions
- Nervous System Conditions
- Circulatory System Conditions
- Lymph and Immune System Conditions
- Respiratory System Conditions
- Digestive System Conditions
- Endocrine System Conditions
- Urinary System Conditions
- Reproductive System Conditions
- Principles of Cancer

Required Materials:
- Online research and journal resources

Grading System:
Successful completion of this course is defined as a grade of 77 or better. The student must maintain a “C” average in both the lecture and the lab portions of the course in order to obtain credit.

A 94 – 100
B 86 – 93
C 77 – 85
D 70 – 76
F 0 – 69

Student Learning Outcomes:

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MTH 136
KINESIOLOGY FOR MASSAGE THERAPY

Hours: Class 2, Lab 0, Credit 2
Pre-requisite:
Co-requisite:
Course Description:

This course is a study of body movement and the body's muscular and structural factors, such as posture and gait, in relation to massage therapy. Specific emphasis will be placed on the effects of massage therapy on the way the body reacts during various activities.

Course Topics:
Required Materials:
Grading System:
Student Learning Outcomes:
MTT 101
Introduction to Machine Tool Elective

Hours: Class 0, Lab 6, Credit 2
Pre-requisite: None
Co-requisite: None
Course Description:
This course covers the basics in measuring tools, layout tools, bench tools and basic operations of lathes, mills, and drill presses.

Course Topics:
- Shop Safety
- Measurement
- Engine Lathes
- Milling Machines
- Vertical and Horizontal Mills
- Drill Press

Required Materials:
- Clear Safety Glasses

Grading System:
An overall grade of C or higher is required for transferability.
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Identify common measuring tools.
- Recognize safe and unsafe work practices in a machine shop.
- Identify basic layout tools and accessories.
- Recognize various hand tools and bench work procedures.
- Identify the principles and types of cut-off metal saws and accessories.
- Identify the principles and types of drill presses and accessories
- Identify the purpose of the main operative parts of the engine lathe.
- Identify the purpose of the main operative parts of the vertical milling machine.

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MTT 111
Machine Tool Theory & Practice I

Hours: Class 2, Lab 9, Credit 5
Pre-requisite: None
Co-requisite: EGT 104
Course Description:
This course is an introduction to the basic operation of machine shop equipment.

Course Topics:
- Shop Safety
- Measurement
- Engine Lathes
- Milling Machines
- Vertical and Horizontal Saws
Required Materials:
- Scientific Calculator (TI-30XA)
- Clear Safety Glasses
- 3-Piece Machinist Starter Kit:
  - 6” Rule
  - 1” Micrometer
  - 6” Dial Caliper

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100  
B 80 – 89  
C 70 – 79  
D 60 – 69  
F 0 – 59

Student Learning Outcomes:
- Identify common measuring tools.
- Recognize safe and unsafe work practices in a machine shop.
- Identify basic layout tools and accessories.
- Recognize various hand tools and bench work procedures.
- Identify the principles and types of cut-off metal saws and accessories.
- Identify the principles and types of drill presses and accessories.
- Identify the purpose of the main operative parts of the engine lathe.
- Identify the purpose of the main operative parts of the vertical milling machine.
- Perform entry level turning procedures.
- Perform entry level milling procedures.

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MTT 112

Machine Tool Theory & Practice II

Hours: Class 2, Lab 9, Credit 5
Pre-requisite: MTT 111
Co-requisite: EGT 108

Course Description:
This course is a combination of the basic theory and operation of machine shop equipment.

Course Topics:
- Shop Safety
- Speed and Feed Calculations
- External and Internal Thread Forms
- Indexing Heads and Rotary Table Set-Up
- Surface Grinding Operations

Required Materials:
- Scientific Calculator (TI-30XA)
- Clear Safety Glasses
- 3-Piece Machinist Starter Kit:
  - 6” Rule
  - 1” Micrometer
  - 6” Dial Caliper

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100  
B 80 – 89  
C 70 – 79
Student Learning Outcomes:

- Demonstrate safe work habits on a lathe, milling machine and surface grinder.
- Identify lathe and milling cutters, including feeds, speeds and depth of cut for all cutting tools.
- Demonstrate the procedures and practices to machine external and internal thread forms using single point thread cutting.
- Demonstrate mathematics used to calculate angles, tapers, and basic geometry calculations performed in the machining field.
- Calculate and perform simple and direct indexing.
- Perform basic operations on surface grinders.

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**MTT 113**

**Machine Tool Theory & Practice III**

**Hours:** Class 2, Lab 9, Credit 5
**Pre-requisite:** MTT 112
**Co-requisite:** None

**Course Description:**

This advanced course is a combination of theory and practice to produce complex metal parts. This course will include advanced machining and grinding procedures required to complete all machining applications.

**Course Topics:**

- Shop Safety
- Precision Machining involving Assembly Requirements
- Advanced Shop Math Calculations
- Machinery's Handbook Reference

**Required Materials:**

- Scientific Calculator (TI-30XA)
- Clear Safety Glasses
- 3-Piece Machinist Starter Kit:
  - 6” Rule
  - 1” Micrometer
  - 6” Dial Caliper

**Grading System:**

An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

**Student Learning Outcomes:**

- Recognize and demonstrate safe work habits on surface grinders, lathes, and milling machines.
- Set-up and operate surface grinders, performing all operations required to produce precision parts.
- Set-up and machine advanced external and internal work on an engine lathe.
- Set-up and machine advanced projects using the vertical milling machine.
- Demonstrate mathematics used to calculate angles, tapers, and basic geometry calculations performed in the machining field.
- Research and collect information from the "Machinery's Handbook".

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MTT 143
Precision Measurements Elective

Hours: Class 2, Lab 0, Credit 2
Pre-requisite: None
Co-requisite: None

Course Description:
This course is a study of precision measuring instruments.

Course Topics:
- Semi-Precision Measuring Tools
- Precision Measuring Tools
- Gaging and Check Plugs

Required Materials:
- Clear Safety Glasses

Grading System:
An overall grade of C or higher is required for transferability.
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Demonstrate semi-precision linear measurement instruments.
- Demonstrate precision linear measurement instruments.
- Demonstrate cylindrical measurement instruments.
- Demonstrate angular measurement instruments.
- Demonstrate gaging measurement instruments.

MTT 243
Advanced Dimensional Metrology for Machinists Elective

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: None
Co-requisite: None

Course Description:
This course is a study of higher levels of measurement, measuring instruments, and measuring techniques. The course consists of a theoretical and practical study incorporating the metric system, geometric dimensions/tolerancing, sine bars/plates for compound angles and more.

Course Topics:
- Metric System
- Compound Angles
- GD & T

Required Materials:
- Clear Safety Glasses
- Scientific Calculator (TI-30XA)
- USB Drive

Grading System:
An overall grade of C or higher is required for transferability.
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
MTT 249
Introduction to CAM

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: EGT 152, MAT 168, MTT 113, MTT 253
Co-requisite: None

Course Description:
This course covers the basic commands necessary to create a simple part program for CNC machines using a graphics programming software.

Course Topics:
- CAD/CAM Geometry
- CNC Programming and Turning Operations
- CNC Programming and Milling Operations

Required Materials:
- Scientific Calculator (TI-30XA)
- USB Drive

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Complete Geometry for Milling and Turning Operations.
- Practice common CAD/CAM Programming features used in Milling Operations.
- Practice common CAD/CAM Programming features used in Turning Operations.
- Create tool paths within the CAM environment.
- Render cutting simulations for both lathe and mill within the CAM environment.

MTT 250
Principles of CNC

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: EGT 152, MAT 168
Co-requisite: None

Course Description:
This course is an introduction to the coding used in CNC programming.

Course Topics:
- G and M Code Programming
- CNC Turning Geometry
- CNC Milling Geometry
- canned Cycles and Sub-Programming

Required Materials:
- Scientific Calculator (TI-30XA)
- USB Drive
Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:

• Describe the history of CNC machining.
• Describe programming data and format.
• Explain the steps for writing turning programs.
• Explain the steps for writing milling programs.
• Prepare G and M code programs required to produce machined parts on CNC turning and machining centers.

MTT 253
CNC Programming and Operations

Hours: Class 0, Lab 9, Credit 3
Pre-requisite: MTT 250 with a minimum grade of “C.”
Co-requisite: None
Course Description:
This course is a study of the planning, programming, selecting tooling, determining speeds and feeds, setting up, operating, and testing of CNC programs on CNC machines.

Course Topics:

• Fanuc Controls
• CNC Tooling Geometry and Offsets
• CNC WPC’s and Workshifts
• CNC Programming

Required Materials:

• Clear Safety Glasses
• Scientific Calculator (TI-30XA)
• USB Drive

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:

• Define the basic layout of CNC controls.
• Demonstrate proper start-up procedures.
• Demonstrate WPC set-up and workshift.
• Demonstrate tool offsets and tool lengths.
• Demonstrate basic set-up and programming format.

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MTT 254
CNC Programming I

Hours: Class 0, Lab 9, Credit 3
Pre-requisite: MTT 253 with a minimum grade of “C.”
Co-requisite: None
Course Description:
This course is a study of CNC programming, including machine language and computer assisted programming.

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Course Topics:
- Fanuc Controls and Programming
- CNC Tooling Geometry and Offsets
- CNC WPC's and Workshifts
- NIMS Credentialing

Required Materials:
- Clear Safety Glasses
- Scientific Calculator (TI-30XA)
- USB Drive

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Demonstrate common programming features required to operate CNC Lathes and Mills
- Demonstrate CNC techniques for specific machining operations.
- Demonstrate machining practices using tool offsets and workshifts.
- Write CNC programs for turning and milling machines.
- Complete NIMS Level I CNC Turning Operator and CNC Milling Operator Online Exams.

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MTT 255
CNC Programming II

Hours: Class 2, Lab 3, Credit 3
Pre-requisite: MTT 254
Co-requisite: None

Course Description:
This course includes CNC programming with simulated production conditions.

Course Topics:
- Polar and Helical Programming
- Sub-Programming Codes
- 4th Axis Programming

Required Materials:
- Clear Safety Glasses
- Scientific Calculator (TI-30XA)
- USB Drive

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Demonstrate Programming Techniques using Polar and Helical Interpolation.
- Demonstrate Programming Techniques using Sub-routines.
- Demonstrate CNC Techniques for Advanced Machining Operations.
- Set up and operate Multi-Axis CNC equipment.
- Program and edit CNC programs.
MTT 256
CNC Programming III
Hours: Class 2, Lab 3, Credit 3
Pre-requisite: MTT 254
Co-requisite: None
Course Description:
This course is a study of advanced CNC programming methods using multi-axis machining centers.

Course Topics:
- 4th Axis Programming
- 5th Axis Programming
- Multi-Axis Set-Up

Required Materials:
- Clear Safety Glasses
- Scientific Calculator (TI-30XA)
- USB Drive

Grading System:
An overall grade of C or higher is required for transferability.
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Demonstrate set-up techniques using multi-axis devices.
- Demonstrate programming techniques using multi-axis devices.
- Retrieve program files stored in a CNC machine or computer.
- Edit Cam files stored on CNC machine or computer.
- Produce workable parts from a CNC program.

MTT 258
Machine Tool CAM
Hours: Class 3, Lab 0, Credit 3
Pre-requisite: MTT 249
Co-requisite: None
Course Description:
This course is a study of computer assisted manufacturing graphics systems needed to create CNC programs.

Course Topics:
- 4th Axis Programming
- 5th Axis Programming
- Multi-Axis Set-Up
- Post Processors

Required Materials:
- Clear Safety Glasses
- Scientific Calculator (TI-30XA)
- USB Drive

Grading System:
An overall grade of C or higher is required for transferability.
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Complete Geometry for Milling and Turning Operations.
- Demonstrate CAD/CAM Programming features used in Milling Operations.
- Demonstrate CAD/CAM Programming features used in Turning Operations.
- Complete Post-Processing Operations for CNC Machining.
- Create successful CNC programs using the CAM software.

MTT 270
Operations and Programming of Coordinate Measuring Machines

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: EGT 108, EGT 152, MAT 101, MTT 112
Co-requisite: None

Course Description:
This course is a study of the operation, application and programming of coordinate measuring machines (CMM).

Course Topics:
- Cartesian Measurement
- PC DEMIS Software
- CMM Measurement

Required Materials:
- Clear Safety Glasses
- Scientific Calculator (TI-30XA)
- USB Drive

Grading System:
An overall grade of C or higher is required for transferability.
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Explain Cartesian Measurement.
- Explain and demonstrate Gaging and Inspection Techniques.
- Setup, operate and program the CMM.
- Produce report page comparing an inspected part’s measured dimensions to blueprint requirements.
- Use the controls and software for operating a CMM.

MTT 275
Introduction to NIMS Credentialing

Hours: Class 1, Lab 9, Credit 4
Pre-requisite: EGT 152, MAT 168, MTT 113
Co-requisite: None

Course Description:
This capstone course will acquaint students with the National Institute for Metalworking Skills (NIMS) credentialing process and will prepare students for the national credentialing examinations. Students will gain practical experience producing projects to the NIMS standards.
Course Topics:
- NIMS Level I Machining Credentials
- NIMS Level I Projects
- NIMS Inspection Process

Required Materials:
- Clear Safety Glasses
- Scientific Calculator (TI-30XA)
- 3-Piece Machinist Starter Kit:
  - 6" Rule
  - 1" Micrometer
  - 6" Dial Caliper

Grading System:
An overall grade of C or higher is required for transferability.
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Explain the NIMS Level I Credentialing Process.
- Produce the Level I manual machining projects.
- Explain the importance of compliance of OSHA rules and regulations.
- Safely operate machinery and don personal protective equipment.
- Demonstrate manual machine tool practices.

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MTT 285
NIMS Level I Capstone

Hours: Class 1, Lab 9, Credit 4
Pre-requisite: MTT 275
Co-requisite: None

Course Description:
This capstone course will provide practice and performance necessary to complete all Level I projects outlined by the National Institute for Metalworking Skills (NIMS). This course will include projects and written examinations required by NIMS.

Course Topics:
- NIMS Level I Machining Credentials
- NIMS Level I Machining Projects
- NIMS MET-TEC Inspection

Required Materials:
- Clear Safety Glasses
- 3-Piece Machinist Starter Kit:
  - 6" Rule
  - 1" Micrometer
  - 6" Dial Caliper
- Machinery's Handbook

Grading System:
An overall grade of C or higher is required for transferability.
A 5 Credentials
B 4 Credentials
C 3 Credentials
F Less than 3 Credentials

Student Learning Outcomes:
MTT 290
Selected Topics in Machine Tool Technology Elective

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: None
Co-requisite: None
Course Description:

This course is a study of current topics related to machine tool technology.

Course Topics:
- Advances in Machine Tool
- Machine Tool needs of today
- Future of Machine Tool and Manufacturing

Required Materials:
- Clear Safety Glasses

Grading System:
An overall grade of C or higher is required for transferability.

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Discuss a variety of topics related to Machine Tool.
- Identify modern trends in Machine Tool.
- Discuss current manufacturing needs required in Machine Tool.
- Recognize trends of manufacturing.
- Identify the future needs of manufacturing.

MUS 105
Music Appreciation

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 100, RDG 100 with grade of “C” or better.
Co-requisite: None
Course Description:

This course is an introduction to the study of music with focus on the elements of music and their relationships, the musical characteristics of representative works and composers, common musical forms and genres of various western and non-western historical style periods, and appropriate listening experiences.

Course Topics:
- Overview of the basic terms and elements of music
- Overview and classification of music instruments
- Influence of culture on music
- Historical survey of Western music from the Middle Ages to the present
- Overview of representative composers of each period
Required Materials:
- Computer with Internet access
- Word processing software (must be able to save in Word format)
- Anti-virus software

Grading System:
A grade of "C" or higher is required for transferability.
A 93 – 100
B 85 – 92
C 75 – 84
D 65 – 74
F 0 – 64

Student Learning Outcomes:
- Identify the basic elements of music including the sounds of different instruments and instrumental families.
- Distinguish the characteristics of various historical periods.
- Identify aural elements of music.
- Name and describe the contributions of great composers of different periods.
- Communicate the similarities and differences heard within multiple musical compositions.

NUR 106
Pharmacological Basics in Nursing Practice

Hours: Class 1, Lab 3, Credit 2
Pre-requisite: Admission into the Nursing Program.
Co-requisite: NUR 120, NUR 138

Course Description:
This introductory course outlines the basic concepts of pharmaceutics, pharmacokinetics, pharmacodynamics, and pharmacotherapeutics. The process of clinical calculations is introduced, as well as the major drug classifications.

Course Topics:
- Dimensional analysis approach to solving dosage calculations
- Legal aspects affecting drug administration and principles of pharmacology
- Prototype drugs within specific classifications:
  - Chemotherapeutic Agents
  - Drugs acting on the Immune System
  - Drugs Acting on the Central and Peripheral Nervous Systems
  - Drugs Acting on the Autonomic Nervous System
  - Drugs Acting on the Endocrine system
  - Drugs Acting on the Cardiovascular System
  - Drugs Acting on the Renal System
  - Drugs Acting on the Respiratory System
  - Drugs Acting on the Gastrointestinal System

Required Materials:
- Calculator (No graphing calculators)
- ATI materials for first semester students
- Spartanburg Community College Associate Degree Nursing Student Handbook

Grading System:
A grade of "C" or higher is required for transferability.
A 94 – 100
Student Learning Outcomes:

- Calculate medication dosages using a dimensional analysis approach.
- Compare assessment data pre and post medication administration, recognizing adverse drug reactions, side effects, and therapeutic effects to promote and maintain the patient's optimal level of wellness.
- Demonstrate critical thinking by combining knowledge of disease processes, assessment data, and medication indications to formulate desired outcomes for a specific patient.
- Recognize the importance of collaborating with other health care professionals to improve patient safety and compliance while administering prescribed medications.
- Demonstrate knowledge by recalling principles of medication administration, defining medication classifications, mechanisms of action, common side effects, and adverse drug reactions.
- Explain the importance of collaborating with the family and patient to identify and meet educational needs related to specific medications.

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NUR 120
Basic Nursing Concepts

Hours: Class 3, Lab 12, Credit 7
Pre-requisite: Admission into the Nursing Program.
Co-requisite: NUR 106, NUR 138

Course Description:
This course introduces the application of the nursing process in the care of persons throughout the life span who are experiencing selected common health problems.

Course Topics:

- Concepts in Nursing:
  - Health & Wellness
  - Health Care Delivery System
  - Community Based-Practice
  - Legal Principles
  - Ethics
  - Evidence-Based Practice
- Process in Nursing Care:
  - Critical thinking
  - Nursing Process
  - Informatics & Documentation
  - Communication
  - Patient Education
  - Managing Patient Care
- Essentials for Nursing Practice:
  - Infection Prevention & Control
  - Vital Signs
  - Administering Medications
  - Fluid
  - Electrolyte
  - Acid-Based Balances
- Promoting Psychosocial Health:
  - Caring in Nursing Practice
  - Cultural Diversity
  - Spiritual Health
• Growth & Development
• Self-Concept & Sexuality
• Stress & Coping
• Loss & Grief

• Promoting Physical Health:
  • Exercise & Activity
  • Safety, Hygiene
  • Oxygenation
  • Sleep
  • Pain Management
  • Nutrition
  • Urinary & Bowel Elimination
  • Immobility
  • Skin Integrity & Wound Care
  • Sensory Alterations
  • Surgical Patient

Required Materials:
• Nurse Pack (1) – sold in SCC bookstore
• ATI materials for first semester students
• Nursing Uniform as outlined in the SCC Associate Degree Nursing Program Handbook
• Spartanburg Community College Nursing Department Associate Degree Nursing Student Handbook.

Grading System:
A grade of “C” or higher is required for transferability.

A 94 – 100
B 85 – 93
C 80 – 84
D 70 – 79
F 0 – 69

Student Learning Outcomes:
• Identify the patient’s basic biological, psychological, sociocultural and spiritual needs at a beginning level.
• Apply critical thinking skills, at a beginning level, in the use of the nursing process when caring for assigned patients.
• Verbalize the impact that cultural beliefs and values have in the performance of nursing skills.
• Demonstrate caring behaviors in interactions with patients, family members, peers and faculty.
• Utilize accepted principles and procedures for providing safe and effective nursing care in the performance of psychomotor skills.
• Apply principles and techniques of therapeutic communication, at a beginning level, with patients, family members, staff, peers and faculty.
• Demonstrate appropriate actions regarding nursing practice consistent with professional values and ethical, legal, and regulatory guidelines.

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NUR 138
Basic Health Assessment in Nursing

Hours: Class 1, Lab 3, Credit 2
Pre-requisite: Admission into the Nursing Program.
Co-requisite: NUR 106, NUR 120
Course Description:
This course is a study of the cognitive, psychomotor, and technological skills necessary to perform a basic health assessment for adult clients.
Course Topics:

- Introduction to the nursing process with a focus on "assessment."
- The use of the four assessment tools (inspection, palpation, percussion and auscultation) to perform a head-to-toe nursing health assessment of the following body systems:
  - Mental status
  - Head and face
  - Eyes and ears
  - Mouth, nose, throat, neck, and sinuses
  - Musculoskeletal
  - Respiratory and thorax
  - Cardiac and peripheral vascular
  - Gastrointestinal
  - Neurologic
  - Integumentary
  - Urogenital
  - Breast and axilla

Required Materials:

To be brought to each class:

- Stethoscope (with diaphragm and bell capabilities)
- Functioning penlight

Grading System:

A grade of "C" or higher is required for transferability.

<table>
<thead>
<tr>
<th>Grade</th>
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<tbody>
<tr>
<td>A</td>
<td>94 – 100</td>
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<td>B</td>
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<td>C</td>
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<td>D</td>
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<td>F</td>
<td>0 – 69</td>
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Student Learning Outcomes:

- Discuss the relationship of the client history and physical to the application of the nursing process.
- Perform a full head-to-toe assessment and review of systems on a peer during a scheduled appointment with the course instructor at an 80% level of accuracy and thoroughness.
- Choose an adequate number and type of HPI (history of present illness) questions to obtain information about a presenting client's chief complaint.
- Accurately categorize historical client information into standardized medical history sets.
- Demonstrate a rising second semester technical proficiency skill level in the utilization of physical assessment equipment (e.g., stethoscope, penlight, tuning fork, etc.).
- Identify select abnormal physical findings of all body systems at the second semester level of skill in the clinical/healthcare setting.

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NUR 148

Obstetric, Neonatal, and Women's Health Nursing

Hours: Class 3, Lab 6, Credit 5
Pre-requisite: NUR 106, NUR 120, NUR 138
Co-requisite: NUR 165
Course Description:

This course focuses on the nursing care of low-risk and high-risk obstetric clients, low risk neonates and women throughout their life spans.

Course Topics:

- Anatomy and physiology of the female reproductive cycle
• Anatomy and physiology of pregnancy and the postpartum period
• Conception and fetal development
• Culturally-appropriate care of the childbearing family
• Maternal/fetal nutrition
• Nursing care of the family during pregnancy, the intrapartum period, the postpartum period, and the neonatal period
• The process of labor and birth
• Pain management during labor
• Fetal assessment in the antepartum and intrapartum periods
• Physiologic and behavioral adjustment of the newborn to extrauterine life
• Parental adjustment to pregnancy, birth, and the newborn period
• Newborn nutrition
• Assessment for fetal and maternal risk factors pregnancy
• Complications of pregnancy (including, but not limited to)
  • Hypertensive disorders
  • Antepartal hemorrhagic disorders
  • Endocrine and metabolic disorders
  • Mental health disorders
  • Medical-Surgical disorders
  • Labor and birth complications
  • Postpartum complications
• Perinatal loss and grief
• Assessment and management of female physiological processes
• Management of clients with female reproductive disorders

Required Materials:
• Classroom:
  • Learning packet (purchase from the Book Inn)
  • Gestational wheel
• Clinical:
  • Stethoscope
  • Functioning penlight
  • Gestational wheel
  • Black pen
  • Medication reference sheet
  • Appropriate careplan forms

Grading System:
A grade of "C" or higher is required for transferability.
A 94 – 100
B 85 – 93
C 80 – 84
D 70 – 79
F 0 – 69

Student Learning Outcomes:
• Perform a thorough nursing history and physical on an obstetric/neonatal/gynecologic client in the healthcare environment.
• Analyze and interpret an electronic fetal monitor strip for signs of fetal compromise/acidosis within the Labor and Delivery setting.
• Implement nursing interventions in response to the potentially-acidotic fetus within the Labor and Delivery setting.
• Apply classroom theory to identify women at increased risk for complications of pregnancy and the postpartum period (e.g., preterm labor, antepartum hemorrhage, hypertensive disorders, etc.)
• Provide culturally competent care to women of childbearing age and to their families/friends in the healthcare setting.
• Devise and develop a nursing plan of care for an antepartum/intrapartum/postpartum/or neonatal client.
• Provide obstetric/gynecologic clients with education relating to self- and newborn-care.
• Utilize therapeutic communication skills with peers, instructors, institution staff as well as clients at a level appropriate for the rising third semester nursing student.

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NUR 165
Nursing Concepts and Clinical Practice 1

Hours: Class 3, Lab 9, Credit 6
Pre-requisite: NUR 106, NUR 120, NUR 138
Co-requisite: NUR 148

Course Description:
This course covers applications of critical thinking skills and nursing concepts in the care of adult clients with selected health problems in a variety of settings.

Course Topics:
• Stress Adaptation
• Nursing Process
• Acid-Base Disorders
• Endocrine Disorders
• Respiratory Disorders
• Cardiovascular Disorders
• Hypertension
• Congestive Heart Failure
• Basic Heart Rhythms
• Chronic Renal Failure
• Other Renal Disorders
• Gastrointestinal Disorders
• Integumentary Disorders
• Musculoskeletal Disorders
• Eye/Ear Disorders
• Chronic Neurological Disorders
• Dementia/Delirium

Required Materials:
• All textbooks previously used in the nursing curriculum
• ATI materials for the 2nd semester
• SCC Student Planner and Handbook- Current academic year
• Associate Degree in Nursing Student Handbook- current academic year

Grading System:
A grade of "C" or higher is required for transferability.
A 94 – 100
B 85 – 93
C 80 – 84
D 70 – 79
F 0 – 69

Student Learning Outcomes:
• Examine and discuss the impact of various local, state, and national level health care initiatives.
• Compare and contrast the etiology, clinical manifestations, medication management, collaborative care, and nursing management for selected disease processes.
• Describe the purpose, result significance, and nursing responsibilities related to specific diagnostic testing.
• Differentiate normal from common abnormal findings within selected disease processes.
• Identify common nursing interventions, rationales, and expected outcomes related to client teaching for individual
management of selected common disease processes.
• Demonstrate critical thinking by combining knowledge of selected disease processes and assessment data to formulate desired outcomes.
• Collaborate and communicate with other health care providers to resolve, improve, or provide optimal care for client disease processes.

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NUR 212
Nursing Care of Children

Hours: Class 2, Lab 6, Credit 4
Pre-requisite: NUR 106, NUR 120, NUR 138, NUR 148, NUR 165
Co-requisite: NUR 214, NUR 224

Course Description:
This course facilitates the application of the nursing process to assist in meeting the needs of children with acute and chronic health problems. Focus is on growth and development and anticipatory guidance.

Course Topics:
• Legal and Ethical Issues
• Growth & Development (Infant, Toddler, Preschooler, School-Age & Adolescent) child
• Communication
• Pediatric Assessment
• Care of the Hospitalized Child
• Chronic Conditions
• Pain Management
• Medication Administration
• Loss & Bereavement
• Fluid and Electrolyte
• Genitourinary Alterations
• Respiratory Alterations
• Infectious Diseases
• Cardiovascular Alterations
• Endocrine Alterations
• Hematological & Immunologic Alterations
• Cellular Alterations
• Integumentary Alterations
• Sensory & Cognitive Alterations
• Neurological Alterations
• Musculoskeletal Alterations
• Child Abuse & Neglect
• Nursing Care of the High Risk Newborn
• Hemolytic Disorders and Congenital Anomalies of the Newborn
• Acquired Disorders of the Newborn

Required Materials:
• All Textbooks previously utilized in the nursing curriculum
• ATI materials for the 3rd semester
• SCC Student planner and Handbook- current academic year
• Associate Degree in Nursing Student Handbook- current academic year

Grading System:
A grade of "C" or higher is required for transferability.

A 94 – 100
B 85 – 93
C 80 – 84
D 70 – 79
F 0 – 69

Grades in the course will not be rounded

Student Learning Outcomes:
• Examine and discuss the impact of legal and ethical obligations of healthcare professionals in relationship to the care of the pediatric patient.
• Compare and contrast the etiology, clinical manifestations, assessment strategies, medication and therapeutic management utilized in the nursing care of infants, children and high risk newborn's.
• Manage care by describing and implementing age/developmentally appropriate interventions, resources and teaching initiatives for the pediatric patient and family/caregiver.
• Describe and discuss the significance of nursing responsibilities related to specific diagnostic testing for selected diseases and disorders.
• Identify the normal from common abnormal findings within selected disease processes.
• Demonstrate critical thinking abilities by collaborating and combining knowledge of selected disease processes and the assessment data to formulate desired outcomes for the pediatric patient.
• Collaborate and communicate effectively with members of the health care team to resolve, improve or provide optimal care for client processes.

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NUR 214
Mental Health Nursing

Hours: Class 2, Lab 6, Credit 4
Pre-requisite: NUR 106, NUR 120, NUR 138, NUR 148, NUR 165
Co-requisite: NUR 212, NUR 224

Course Description:
This course facilitates the utilization of the nursing process to assist in meeting the needs of patients with common mental health problems. Focus is on the dynamics of human behavior ranging from normal to extreme.

Course Topics:
• Foundations of Mental Health Nursing
• Legal Aspects
• Psychobiology
• Psychopharmacology
• Nursing Process
• Therapeutic Communication
• Personality Disorders
• Anxiety Disorders
• Mood Disorders
• Thought Disorders
• Chemical Dependency/Substance Abuse
• Childhood, Adolescent, and Teenage Disorders
• Eating Disorders
• Crisis Intervention

Required Materials:
• All textbooks previously used in the nursing curriculum
• ATI materials for 3rd semester
• Associate Degree in Nursing Student Handbook - current academic year
• SCC Student Planner and Handbook - current academic year

Grading System:
A grade of "C" or higher is required for transferability.
A 94 – 100
B 85 – 93
C 80 – 84
D 70 – 79
F 0 – 69

Student Learning Outcomes:
- Analyze legal and ethical considerations in caring for the mentally ill client.
- Identify and discuss current concerns in various age groups related to mental illness societal trends.
- Discuss the differences and special considerations related to care of voluntary versus involuntary admission status clients.
- Discuss the implications of psychobiological concepts to the practice of mental health nursing.
- Demonstrate therapeutic communication and relationship development in the mental health setting.
- Discuss nursing implications for various currently relevant treatment modalities and medications prescribed in the care of clients diagnosed with common mental health illnesses.

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NUR 224
Advanced Alterations in Health

Hours: Class 0, Lab 3, Credit 1
Pre-requisite: NUR 106, NUR 120, NUR 138, NUR 148, NUR 165
Co-requisite: NUR 212, NUR 214

Course Description:
This course focuses on development of theoretical knowledge related to client-centered and family-centered nursing for selected clients with multi-system acute and chronic health problems across the lifespan. Emphasis is placed on the role of the nurse in clinical decisions-making.

Course Topics:
- Acid-Base disturbances
- Endocrine disorders
- Respiratory disorders
- Review of conduction system
- Cardiac disorders
- Genitourinary disorders
- Neuromuscular disorders
- Care of the oncology patient
- Hematologic disorders

Required Materials:
- ATI material for third semester students.
- Spartanburg Community College Associate Degree of Nursing Handbook 2014-2015 (online)

Grading System:
A grade of "C" or higher is required for transferability.
A 94 – 100
B 85 – 93
C 80 – 84
D 70 – 79
F 0 – 69

Student Learning Outcomes:
- Compare the physiological and psychological care for the client.
- Use critical thinking methods in solving client-based scenarios.
- Identify nursing interventions, rationales and expected outcomes related to the management of the client.
- Differentiate between the etiology, clinical manifestations, nursing management, collaborative care and drug therapy for the client.
- Collaborate with health care professionals to resolve/improve any of the above mentioned topics as well as provide optimal care for clients.

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NUR 265
Nursing Concepts and Clinical Practice II

Hours: Class 3, Lab 9, Credit 6
Pre-requisite: NUR 106, NUR 120, NUR 138, NUR 148, NUR 165, NUR 212, NUR 214, NUR 224
Co-requisite: NUR 270, NUR 271

Course Description:
This course is a continuation of the application of critical thinking skills and nursing concepts in the care of adult clients with selected health problems in a variety of settings.

Course Topics:
- Advanced medical-surgical nursing management of:
  - Acute Kidney Injury
  - Endocrine Alterations
  - Burns
  - Trauma and Surgical Management
  - Acute Respiratory Failure
  - Ventilatory Assistance
  - Cardiovascular Alterations
  - Dysrhythmia Interpretation and Management
  - Nervous System Alterations
  - Shock
  - Sepsis
  - Multiple Organ Dysfunction Syndrome
  - Gastrointestinal Alterations
  - Terrorism
  - Mass Casualty
  - Disaster Nursing

Required Materials:
- All textbooks previously used in the curriculum
- Nurse pack (if not previously purchased)
- Required ATI materials and codes

Grading System:
A grade of "C" or higher is required for transferability.

A 94 – 100
B 85 – 93
C 80 – 84
D 70 – 79
F 0 – 69

Student Learning Outcomes:
- Assess and manage abnormal patient data, lab values, nursing diagnoses, nursing interventions, and evaluation for patients with fluid, electrolyte, and acid-base imbalances.
- Formulate physiological and psychological care for a client with fluid and electrolyte imbalances requiring intravenous therapy and nutritional support.
- Compare and contrast normal and abnormal renal assessment data, diagnostic testing, lab values, nursing diagnoses, nursing interventions, and evaluation for acute renal failure.
- Formulate and assess physiological and psychological changes and behaviors associated with endocrine disorders and the patient care needs related to the nursing process.
- Develop and collaborate physiological and psychological care for the client who has experienced a burn injury.
- Develop and collaborate the physiological and psychological care and surgical management for a client experiencing trauma.
- Develop and collaborate physiological and psychological care for clients in acute respiratory failure and for clients requiring...
ventilator assistance.

- Compare and contrast normal and abnormal cardiovascular assessment data, diagnostic testing, lab values, nursing diagnoses, nursing interventions, and evaluation for various cardiovascular conditions, including dysrhythmias.
- Develop and collaborate physiological and psychological care for a client with alterations in the nervous system.
- Formulate and assess the physiological and psychological care for clients experiencing shock and sepsis.
- Compare the physiological and psychological changes and behaviors associated with gastrointestinal disorders and the patient care needs related to the nursing process.
- Assess the physiological and psychological changes and behaviors associated with terrorism, mass casualty, and the patient care needs related to the nursing process.

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NUR 270
Principles of Management and Leadership

Hours: Class 0, Lab 3, Credit 1
Pre-requisite: NUR 106, NUR 120, NUR 138, NUR 148, NUR 165, NUR 212, NUR 214, NUR 224
Co-requisite: NUR 265, NUR 271

Course Description:
This course focuses on concepts and competencies related to role development, leadership and management skills, legal and ethical issues, and professional values and behaviors of the registered nurse.

Course Topics:

- Management and leadership in nursing
- Assigning, delegation, and supervision in nursing
- Ethical decision making in nursing
- Safety and injury prevention in the health care setting
- Health-care delivery systems and the politically active nurse

Required Materials:
ATI material for fourth semester students

Grading System:
A grade of “C” or higher is required for transferability.
A 94 – 100
B 85 – 93
C 80 – 84
D 70 – 79
F 0 – 69

Student Learning Outcomes:

- Compare and contrast the different leadership styles that examine organizational, management, and leadership theories affecting the delivery of nursing care.
- Summarize the importance of assigning, delegating and supervision as it relates to the nursing profession.
- Recognize ethical, legal, social cultural, political and economic issues which impact health care delivery and client care.
- Demonstrate a working knowledge of safety and injury prevention as it relates to client care.
- Demonstrate proficient knowledge of nursing care of the client using the nursing process.

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Management and Leadership Practicum

Hours: Class 0, Lab 6, Credit 2
Pre-requisite: NUR 106, NUR 120, NUR 138, NUR 148, NUR 165, NUR 212, NUR 214, NUR 224
Co-requisite: NUR 265, NUR 271

Course Description:
This course provides lab and clinical practice related to role development, leadership and management skills, legal and ethical issues, and professional values and behaviors of the registered nurse.

Course Topics:
- Students are required to complete 84 hours (7 12 hour shifts) of clinical practicum
- Management of a caseload of patients in the clinical setting

Required Materials:
- Stethoscope
- Nursing uniform
- Pin light

Grading System:
A grade of "C" or higher is required for transferability.

A 94 – 100
B 85 – 93
C 80 – 84
D 70 – 79
F 0 – 69

Student Learning Outcomes:
- Apply and integrate appropriate critical thinking skills and knowledge in the care of the adult population with acute life threatening illnesses or chronic medical-surgical needs.
- Assess and document (according to institution policies) disease processes, medication effects, treatments, etc. in timely manner.
- Practice appropriate professional behavior, accountability, responsibility, and verbal and non-verbal communication skills with clients, significant others, and all members of the healthcare team.
- Explain and document (according to institution policies) the disease processes, medications, treatments, etc. to clients and significant others prior to discharge.
- Demonstrate an environment of confidentiality, caring and support of the client's decisions regarding culture, values, beliefs and lifestyles through an interdisciplinary approach.

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PHI 101
Introduction to Philosophy

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 100, RDG 100 with grade of "C" or better.
Co-requisite: None

Course Description:
This course includes a topical survey of the three main branches of philosophy — epistemology, metaphysics, and ethics — and the contemporary questions related to these fields.

Course Topics:
- Major philosophical schools in the western philosophical tradition.
- Various philosophical approaches to subjects such as religion, epistemology, science and art.
Various arguments on current topics such as religion and science, abortion and the death penalty.

Required Materials:
None

Grading System:
An overall grade of C or higher is required for transferability.
A 93-100
B 85-92
C 75-84
D 65-74
F 0-64

Student Learning Outcomes:
- Identify the various philosophical theories by their terms and basic themes.
- Articulate the strengths and weaknesses of the major philosophical theories.
- Analyze competing philosophical claims from the different philosophical theories.
- Evaluate arguments on major issues such as the death penalty, abortion and intelligent design.
- Correlate the major philosophical traditions with the primary founders and writers in each tradition.

PHI 110
Ethics

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 100, RDG 100 with grade of "C" or better.
Co-requisite: None
Course Description:
This course is a study of the moral principles of conduct emphasizing ethical problems and modes of ethical reasoning.

Course Topics:
- Major ethical theories in the western philosophical tradition.
- Arguments on current ethical issues such as abortion, the death penalty and human rights.
- Comparison/contrast of the competing theories on ethics.

Required Materials:
None

Grading System:
An overall grade of C or higher is required for transferability.
A 93-100
B 85-92
C 75-84
D 65-74
F 0-64

Student Learning Outcomes:
- Identify the various philosophical theories by their terms and basic themes.
- Articulate the strengths and weaknesses of the major philosophical theories.
- Analyze competing philosophical claims from the different philosophical theories.
- Evaluate arguments on major issues such as the death penalty, abortion and intelligent design.
- Correlate the major philosophical traditions with the primary founders and writers in each tradition.
PHM 101
Introduction to Pharmacy

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 100 and RDG 100 with a minimum grade of C.
Co-requisite: PHM 110, PHM 112, and PHM 114
Course Description:

This course provides a study of and introduction to pharmacy and the role in providing patient care services.

Course Topics:
- Pharmacy and Health Care
- The Pharmacy Technician
- Drug Regulation and Control
- Medical and Pharmaceutical Terminology
- Prescriptions
- Routes and Formulations
- Common Pharmacy References and Drug Information Resources
- Inventory Management
- Pharmacy Practice Settings

Required Materials:
- Basic 4-function calculator
- Pen with black or blue ink

Grading System:
An overall grade of C or higher is required for transferability.

A 93 – 100
B 85 – 92
C 76 – 84
D 70 – 75
F 0 – 69

Student Learning Outcomes:
- Describe the evolution of pharmacy practice.
- Summarize the overall aspects of the pharmacy technician job and the general role of the pharmacy technician in relation to the pharmacist in various pharmacy settings.
- Describe the key legislative acts governing pharmacy practice.
- Distinguish between the different dosage formulations and routes of administration used in various pharmacy settings.
- Distinguish between medical and pharmaceutical terminology.
- Distinguish between common pharmacy references and drug information resources.
- Describe inventory management and financial issues with regard to community and institutional pharmacy.
- Differentiate between the various pharmacy practice settings.

PHM 103
PHARMACY LAW AND ETHICS

Hours: Class 2, Lab 0, Credit 2
Pre-requisite: Take PHM-101, PHM-110, PHM-112, and PHM-114
Co-requisite:
Course Description:

This course is a study of the current laws and ethical practices appropriate to pharmacy and the role of the patient.

Course Topics:
Required Materials:
PHM 109

APPLIED PHARMACY PRACTICE

Hours: Class 2, Lab 0, Credit 2
Pre-requisite:
Co-requisite:
Course Description:
This course is a study of the principles used in manipulation of data and materials in preparing and dispensing of drugs.

Course Topics:
Required Materials:
Grading System:
Student Learning Outcomes:
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PHM 110

Pharmacy Practice

Hours: Class 3, Lab 3, Credit 4
Pre-requisite: Admission into the Pharmacy Technician Program.
Co-requisite:
Course Description:
This course provides a study of theory and practice in procuring, manipulating, and preparing drugs for dispensing.

Course Topics:
• Drug Development
• Dispensing Medications in the Community Pharmacy
• The Business of Community Pharmacy
• Nonsterile Pharmaceutical Compounding
• Hospital Pharmacy Practice
• Infection Control
• Compounding Sterile Products and Hazardous Drugs
• Medication Safety
• Human Relations and Communications
• Your Future in Pharmacy Practice

Required Materials:
• Basic 4-function calculator
• Pen with black or blue ink

Grading System:
An overall grade of C or higher is required for transferability.
A 93 – 100
B 85 – 92
C 76 – 84
D 70 – 75
F 0 – 69

Student Learning Outcomes:
• Describe overall community pharmacy operations and general responsibilities of the pharmacy technician with regard to all aspects of prescription and over-the-counter drugs.
• Describe common situations in which compounding is required, identifying rational and examples of nonsterile compounding.
• Describe overall institutional pharmacy operations and general responsibilities of the pharmacy technician within their scope of practice.
• Recognize the importance of proper aseptic technique which is required for sterile compounding to prevent unnecessary contamination according to USP 797 standards and guidelines.
• Recognize the importance of infection control in the preparation of sterile compounding.
• Recognize the magnitude of medical and medication errors, and general responsibilities of the pharmacy technician in their role to minimize or eliminate future errors.
• Identify the importance of excellent customer service, including the development of good interpersonal skills.
• Recognize the importance of becoming a national certified pharmacy technician and the opportunities within the profession after certification.
• Demonstrate institutional pharmacy procedures.
• Demonstrate community pharmacy procedures.
• Demonstrate nonsterile compounding pharmacy procedures.

PHM 111
Applied Pharmacy Practice Laboratory

Hours: Class 0, Lab 6, Credit 2
Pre-requisite: Successful completion of prior program requirements.
Co-requisite: PHM 101, PHM 110, PHM 112, PHM 114

Course Description:
This course is a study of laboratory based, hands-on application of principles used in manipulation of data and materials in the preparing and dispensing of drugs.

Course Topics:
Required Materials:
Grading System:
Student Learning Outcomes:

PHM 112
Pharmacy Math

Hours: Class 2, Lab 0, Credit 2
Pre-requisite: Admission into the Pharmacy Technician Program.
Co-requisite:
Course Description:
This course provides a study of mathematical manipulation and measurement systems as allied to pharmacy.

Course Topics:
• Addition, subtraction, division, and multiplication of fractions, decimals, and whole numbers.
• Conversions between Roman numerals and Arabic numbers.
• Ration and proportion.
• Conversions between metric, household, and apothecary systems.
• Conversion between standard time and military (universal) time.
• Conversion between Fahrenheit and Celsius.
• Interpretation of medical and pharmaceutical abbreviations and terminology.
• Identification of prescriptions, medication orders, and drug labels.
• Identification and verification of DEA numbers.
• Controlled substance recognition and classification.
• Recognition of medication reference materials.
• Conversion between the dosage order to the desired dose, and the amount to be dispensed of a drug.
• Calculation of estimated day's supply.
• Reconstitution calculations of powdered medications.
• Percentages of solutions, dilutions, and solids.
IV flow rates and infusion time.
Medication dilutions from a concentrate using allegation method.
Calculations of insulin dosages.
Conversion between patient weights in pounds to kilograms.
Pediatric dosage calculations using various formulas.
Dosage calculations based on weight and body surface area.
Calculations of compounded formula's.
Basic operational calculations

**Required Materials:**
- Basic 4-function calculator
- Pen with black or blue ink

**Grading System:**
An overall grade of C or higher is required for transferability.

A 93 – 100
B 85 – 92
C 76 – 84
D 70 – 75
F 0 – 69

**Student Learning Outcomes:**
- Calculate basic mathematical functions.
- Apply ratios, proportion, and percents in problem calculations.
- Interpret prescriptions, medication orders, and drug labels.
- Calculate the amount of medication to be administered to a patient.
- Calculate administration of oral and parenteral medications.
- Demonstrate dose specific calculations for special populations based on body weight and patient age.
- Calculate basic day-to-day operations of the pharmacy.

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**PHM 113**
Pharmacy Technician Math

**Hours:** Class 3, Lab 0, Credit 3
**Pre-requisite:** Successful completion of prior program requirements.
**Co-requisite:**

**Course Description:**
This course includes a review of basic mathematics focusing on its application to common pharmaceutical calculations.

**Course Topics:**
- Addition, subtraction, division, and multiplication of fractions, decimals, and whole numbers.
- Conversions between Roman numerals and Arabic numbers.
- Conversion between ratios, proportions, and percents.
- Conversion of percentage of error.
- Conversions between metric, household, and apothecary systems.
- Conversion between standard time and military (universal) time.
- Conversion between Fahrenheit and Celsius.
- Interpretation of medical and pharmaceutical abbreviations and terminology.
- Identification of the elements of the prescriptions, medication orders, and drug designation.
- Interpretation of prescription directions.

**Required Materials:**
- Basic 4-function calculator
- Pen with black or blue ink

**Grading System:**
An overall grade of C or higher is required for transferability.
A 93 – 100  
B 85 – 92  
C 76 – 84  
D 70 – 75  
F 0 – 69  

Student Learning Outcomes:  
- Calculate basic mathematical functions.  
- Apply rations, proportion, and percent’s in problem calculations.  
- Calculate equivalent measurements within the metric systems.  
- Interpret prescriptions, medication orders, and drug labels.  
- Calculate the amount of medication to be administered to a patient.  
- Calculate administration of oral and parenteral medications.  
- Demonstrate dose specific calculations for special populations based on body weight and patient age.  
- Apply operational calculation of Pharmacy.

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PHM 114  
Therapeutic Agents I  
Hours: Class 3, Lab 0, Credit 3  
Pre-requisite: Admission into program.  
Co-requisite:  
Course Description:  
This course provides an introductory study of therapeutic drug categories.

Course Topics:  
- Evolution of Medicinal Drugs  
- Basic Concepts of Pharmacology  
- Dispensing Medications  
- Antibiotics  
- Therapy for Fungal and Viral Infections  
- Anesthetics and Narcotics  
- Psychiatric and Related Drugs  
- Drugs for Central Nervous System Disorders  
- Respiratory Drugs  

Required Materials:  
- Basic 4-function calculator  
- Pen with black or blue ink  

Grading System:  
An overall grade of C or higher is required for transferability.  
A 93 – 100  
B 85 – 92  
C 76 – 84  
D 70 – 75  
F 0 – 69  

Student Learning Outcomes:  
- Describe the historical development of Pharmacology including the important contributors, events, and resources in the development of pharmacology through the ages.  
- Explain the basic concepts of pharmacology in relationship to the pharmacokinetic process.  
- Explain the different processes and importance of dispensing medications.  
- Identify and explain the therapeutic and adverse effects of prescription medications, nonprescription medications, and alternative therapies commonly used to treat:  
  - bacterial, fungal, and viral infections;  
  - diseases of the nervous system;  
  - psychiatric and mood disorders;
PHM 124

Therapeutic Agents II

Hours: Class 3, Lab 0, Credit 3

Pre-requisite: Successful completion of prior program requirements.

Co-requisite:

Course Description:

This course includes a study of therapeutic drug categories.

Course Topics:

- Drugs for Gastrointestinal and Related Diseases
- Renal System Drugs
- Drugs for Cardiovascular Diseases
- Drugs for Muscle and Joint Disease and Pain
- Hormonal Disorders and Their Treatment
- Topical, Ophthalmic, and Otic Medications
- Recombinant Drugs and Chemotherapy
- Vitamins, OTC Supplements, Antidotes, and Miscellaneous Topics

Required Materials:

- Basic 4-function calculator
- Pen with black or blue ink

Grading System:

An overall grade of C or higher is required for transferability.

A 93 – 100
B 85 – 92
C 76 – 84
D 70 – 75
F 0 – 69

Student Learning Outcomes:

- Identify and explain the therapeutic and adverse effects of prescription medications, nonprescription medications, and alternative therapies commonly used to treat diseases of the:
  - Gastrointestinal system
  - Renal system
  - Cardiovascular system
  - Muscles, joint diseases, and pain
  - Endocrine system
  - Skin, ophthalmic and otic conditions
  - Immune system
- Identify and explain the therapeutic and adverse effects of vitamins, over-the-counter medications, supplements, antidotes, and emergency medications.
- Identify and explain the most commonly prescribed drugs.
- Identify and explain common Look-Alike and Sound-Alike medications.
- Identify and explain commonly used medical and pharmaceutical abbreviations.

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PHM 151

PHARMACY CLINICAL EXPERIENCE

Hours: Class 3, Lab 6, Credit 9

Pre-requisite: PHM-103, PHM-113, PHM-124, and PHM-250 with a minimum grade of "C"
PHM 164
Pharmacy Technician Practicum II

Hours: Class 1, Lab 9, Credit 4
Pre-requisite: Successful completion of prior program requirements.
Co-requisite:
Course Description:
This course provides practical application of pharmacy skills in pharmacy environments.

Course Topics:
- Importance of Pharmacy Technician Certification.
- Pharmacy Calculations
- Pharmacy Law and Regulations
- Sterile and Non-Sterile Compounding
- Medication Safety
- Pharmacy Quality Assurance
- Processing and Handling of Medications and Medication Orders

Required Materials:
- Basic 4-function calculator
- Pen with black or blue ink
- Lab jacket with program patch
- Clinical uniform with program patch
- Current SCC ID

Grading System:
An overall grade of C or higher is required for transferability.
- A 93 – 100
- B 85 – 92
- C 76 – 84
- D 70 – 75
- F 0 – 69

Student Learning Outcomes:
- Perform mathematical calculations essential to the duties of pharmacy technicians in a variety of contemporary settings.
- Assist pharmacists in collecting, organizing, and recording demographic and clinical information for direct patient care and medication use review.
- Prepare patient-specific and non-patient-specific medications for distribution.
- Prepare medications requiring compounding of sterile and nonsterile products.
- Apply patient and medication safety practices in all aspects of the pharmacy technician's role.
- Assisting pharmacists in the preparing, storing, and distributing of medication products that require special handling and documentation.
- Explain procedures and communication channels to use in the event of a product recall, shortage, or medication error.
- Act ethically in all job-related activities.
Apply skills presenting a professional image in appearance.
Demonstrate a respectful attitude when interacting with diverse patient populations.
Identify the Top 200 drug names and their classifications.

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PHM 173
Pharmacy Technician Practicum III

Hours: Class 1, Lab 6, Credit 3
Pre-requisite: Successful completion of prior program requirements.
Co-requisite:

Course Description:
This course includes practical experience in a working pharmacy environment.

Course Topics:
- Pharmacology for Technicians
- Medication Order and Entry Process
- Pharmacy Inventory Management
- Pharmacy Billing and Reimbursement
- Pharmacy Information System Usage and Application
- Preparation for National Certification
- Exploring Career Path Options
- Resumes and Interviews

Required Materials:
- Basic 4-function calculator
- Pen with black or blue ink
- Lab jacket with program patch
- Clinical uniform with program patch
- Current SCC ID

Grading System:
An overall grade of C or higher is required for transferability.

- A 93 – 100
- B 85 – 92
- C 76 – 84
- D 70 – 75
- F 0 – 69

Student Learning Outcomes:
- Interpret common abbreviations used by prescribers in community and hospital pharmacy.
- Identify the generic name, brand name, and indication for the most frequently prescribed drugs in pharmacy.
- Demonstrate knowledge and skills in areas of pharmacology relevant to the pharmacy technician’s scope of practice.
- Evaluate the components of a prescription, medication order, and patient profile for completeness and accuracy.
- Summarize the importance of procurement, billing, reimbursement, and inventory management in regards to various pharmacy settings.
- Describe the use of current technology in the healthcare environment to ensure the safety and accuracy of medication dispensing.
- Demonstrate commitment to excellence in the pharmacy profession and to continuing education and training.
- Demonstrate the importance of being equipped for future employment by:
  - Exploring the job market for desirable pharmacy technician positions.
  - Preparing a comprehensive, attractive resume and cover letter.
  - Preparing for a job interview.
Successfully complete the PTCB National Certification Exam for Pharmacy Technicians.

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**PHM 175**

**PHARMACY TECHNICIAN PRACTICUM**

Hours: Class 3, Lab 0, Credit 3  
Pre-requisite: Take PHM-103, PHM-113, PHM-124, and PHM-250 with a minimum grade of "C".

Co-requisite:

Course Description:

This course provides a study of an introduction to the pharmacy in providing patient care services.

Course Topics:

Required Materials:

Grading System:

Student Learning Outcomes:

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**PHM 201**

**PHARMACY MANAGEMENT**

Hours: Class 2, Lab 0, Credit 2  
Pre-requisite: MGT 201

Co-requisite:

Course Description:

This course will provide a study of managing personnel, materials, and workflow in a pharmacy.

Course Topics:

Required Materials:

Grading System:

Student Learning Outcomes:

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**PHM 250**

**SPECIAL TOPICS IN PHARMACY**

Hours: Class 2, Lab 3, Credit 3  
Pre-requisite: Take PHM-101, PHM-110, PHM-112, and PHM-114 with a minimum grade of "C"

Co-requisite:

Course Description:

This course provides opportunities for specialized studies of unique topics in pharmacy, such as pediatric pharmacology, advanced chemotherapy and IV preparation, and advanced medication order entry and interpretation.

Course Topics:

Required Materials:

Grading System:

Student Learning Outcomes:

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**PHS 101**

**Physical Science I**

Hours: Class 3, Lab 3, Credit 4  
Pre-requisite: MAT 102 or MAT 153 with a minimum grade of "C"

Co-requisite:

Course Description:
This is the first of a sequence of courses in physical science and includes an introduction to science with emphasis on science terminology and investigations of the physical world. Topics are selected from astronomy, chemistry, geology, and physics.

Course Topics:
- The scientific method
- Measurement in the metric system
- Motion and equilibrium
- Newton's laws of motion
- Momentum and energy
- Static and current electricity
- Magnetism and electromagnetic induction
- Waves and sound
- Light
- Atoms and the periodic table
- Atomic nucleus and radioactivity
- Elements of chemistry
- How atoms bond and how molecules attract
- Chemical reactions

Required Materials:
- Scientific calculator capable of scientific notation, logarithms, and exponents is required.
- Students should be prepared to create computer-generated graphs.
- Students may make use of SCC computer lab facilities outside of class hours as necessary to create graphs.

Grading System:
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Identify and apply core scientific principles required of all scientific disciplines.
- Describe introductory energy concepts.
- Describe the fundamental properties of matter.
- Identify chemical equations and their parts (coefficients, products, reactants, etc.).
- Describe basic physics principles related to motion.

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PHS 102
Physical Science II

Hours: Class 3, Lab 3, Credit 4
Pre-requisite: PHS 101 with a minimum grade of "C."
Co-requisite:
Course Description:
This is a continuation of the introduction to science with emphasis on science terminology and investigations of the physical world. Topics are selected from astronomy, chemistry, geology, and physics.

Course Topics:
- Review of scientific principles
- Gravity, projectiles, and satellites
- Fluid mechanics
- Thermal energy and thermodynamics
- Heat transfer and changes of phase
- Mixtures
- Acid-base and oxidation-reduction reactions
- Introduction to organic nomenclature
- Rocks and minerals
PHY 201

Physics I

Hours: Class 3, Lab 3, Credit 4

Pre-requisite: MAT 111 with a minimum grade of "C."

Course Description:

This is the first in a sequence of physics courses. Topics include mechanics, wave motion, sound, heat, electromagnetism, optics, and modern physics.

Course Topics:

- Measurement, Estimating
- Describing Motion:
  - Kinematics in One Dimension
  - Kinematics in Two Dimensions; Vectors
- Dynamics: Newton's Laws of Motion
- Circular Motion; Gravitation
- Work and Energy
- Linear Momentum
- Rotational Motion Static
- Equilibrium; Elasticity and Fracture
- Fluids
- Oscillations and Waves
- Sound
- Temperature and Kinetic Theory
- Heat
- The Laws of Thermodynamics

Required Materials:

- Scientific, graphic calculator (TI series)

Grading System:

- A 90 – 100
- B 80 – 89
- C 70 – 79
- D 60 – 69
- F 0 – 59
Student Learning Outcomes:

- Explain basic physics principles and concepts in kinematics, linear and rotational dynamics, oscillation and wave, and thermodynamics.
- Utilize analytical and logical reasoning in solving scientific problems.
- Utilize effective strategies to collect, verify, and manage information from a variety of sources.
- Demonstrate oral communication skills in collaborative group work and presentations.
- Demonstrate competence in the terminology, mathematics, and scientific methods used within the discipline.

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PHY 202

Physics II

Hours: Class 3, Lab 3, Credit 4
Pre-requisite: PHY 201 with a minimum grade of “C.”
Co-requisite: None

Course Description:

This course covers physics topics, including mechanics, wave motion, sound, heat, electromagnetism, optics, and modern physics.

Course Topics:

- Electric Charge and Electric Field
- Electric Potential
- Electric Currents
- DC Circuits
- Magnetism
- Electromagnetic Induction and Faraday's Law
- Electromagnetic Waves
- Light: Geometric Optics
- The Wave Nature of Light
- Optical Instruments
- The Special Theory of Relativity
- Early Quantum Theory and Models of the Atom
- Quantum Mechanics of Atoms
- Molecules and Solids
- Nuclear Physics and Radioactivity
- Nuclear Energy; Effects and Uses of Radiation

Required Materials:

- Scientific, graphic calculator (TI series)

Grading System:

A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:

- Explain basic physics principles and concepts in electricity and magnetism, optics, special relativity, elementary quantum mechanics, nuclear physics, and particle physics.
- Utilize analytical and logical reasoning in solving scientific problems.
- Utilize effective strategies to collect, verify, and manage information from a variety of sources.
- Demonstrate oral communication skills in collaborative group work and presentations.
- Demonstrate competence in the terminology, mathematics, and scientific methods used within the discipline.

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PHY 221
University Physics I

Hours: Class 3, Lab 3, Credit 4
Pre-requisite: MAT 140 with a minimum grade of "C."
Co-requisite: None
Course Description:
This is the first of a sequence of courses. The course includes a calculus based treatment of the following topics: vectors, laws of motion, rotation, vibratory, and wave motion.

Course Topics:
- Metric Unit and Scientific Notation
- Describing Motion: Kinematics in One Dimension
- Kinematics in Two Dimensions; Vectors
- Motion and Force: Dynamics
- Further Applications of Newton's Laws
- Gravitation and Newton's Synthesis
- Work and Energy
- Conservation of Energy
- Linear Momentum and Collision
- Rotational Motion about a Fixed Axis
- General Rotation
- Static Equilibrium: Elasticity and Fracture
- Fluids
- Oscillations
- Wave Motion
- Sound
- Temperature, Thermal Expansion, and the Ideal Gas Law
- Kinetic Theory of Gases
- Heat and the first Law of Thermodynamics
- The Laws of Thermodynamics

Required Materials:
- Scientific, graphic calculator (TI series)

Grading System:
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Explain basic physics principles and concepts in kinematics, linear and rotational dynamics, oscillation and wave, and thermodynamics.
- Utilize analytical and logical reasoning in solving scientific problems.
- Utilize effective strategies to collect, verify, and manage information from a variety of sources.
- Demonstrate oral communication skills in collaborative group work and presentations.
- Demonstrate competence in the terminology, mathematics, and scientific methods used within the discipline.

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PHY 222
University Physics II

Hours: Class 3, Lab 3, Credit 4
Pre-requisite: PHY 221 with a minimum grade of "C."
Co-requisite: None
Course Description:
This course is a continuation of calculus based treatment of the following topics: thermodynamics, kinetic theory of gases, electricity and magnetism, including electrostatics, dielectrics, electric circuits, magnetic fields, and induction phenomena.

Course Topics:
- Electric Charge and Electric Field
- Gauss’s Law
- Electric Potential
- Capacitance, Dielectrics, Electric Energy Storage
- DC Circuits
- Magnetism
- Magnetism
- Electromagnetic Induction and Faraday’s Law
- AC Circuits
- Maxwell’s Equation and Electromagnetic Waves
- Light: Reflection and Refraction
- Lenses and Optical Instruments
- The Wave Nature of Light; Interference
- Diffraction and Polarization
- Special Theory of Relativity
- Early Quantum Theory and Models of the Atom
- Quantum Mechanics
- Chapter 40: Quantum Mechanics of Atoms
- Nuclear Physics and Radioactivity
- Nuclear Energy; Effects and Uses of Radiation

Required Materials:
- Scientific, graphic calculator (TI series)

Grading System:
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Explain basic physics principles and concept in electricity and magnetism, optics, special relativity, elementary quantum mechanics, nuclear physics, and particle physics.
- Apply fundamental physics principles to obtain qualitative solutions using analytical and logical reasoning.
- Use appropriate mathematical and computational techniques to obtain quantitative solutions.
- Analyze experimental results to their theoretical prediction within laboratory environment.
- Demonstrate oral and written communication skills through group work, lab, and in-class activities, assignment, and report.

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PSC 102
Special Topics in Political Science

Hours: Class 2, Lab 0, Credit 2
Pre-requisite: ENG 101 and approval of instructor
Co-requisite: None
Course Description:
This course provides hands-on activities to support courses in international relations and comparative governments. The countries and issues studied will vary depending upon world politics.

Course Topics:
- Arab League Councils and their purpose
- Parliamentary language
The different regions and geographic features of the Middle East
The history of the Middle East
The different religions of the Middle East
Sunni and Shi'a Islam
The contrasting views in Sharia Law
The history of a specific country in the Middle East.
The political situation, the impact of religion on government, and the impact of minority religions on the political situation
The economic factors that impact the population of the country
Environmental issues
The culture of the country and the influence that Islam has on the people
Western influence within the country and its influence on the population
Origins of the Arab Israeli conflict
Colonialism and Palestine
The ongoing Arab Israeli peace process and its impact on the Middle East
Oil
The relationships between the different countries of the region, specifically the influence of Saudi Arabia, Iran and Turkey on Middle Eastern countries.

Required Materials:
None

Grading System:

An overall grade of C or higher is required for transferability.

A 90-100
B 80-89
C 70-79
D 60-69
F 0-59

Student Learning Outcomes:

• Explain Parliamentary procedure used in the Arab League.
• Describe the geography, history and religion of the Middle East.
• Describe the history, economy, environment, and culture of a specific country in the Middle East.
• Analyze the Arab-Israeli conflict.
• Analyze the present day Middle East.

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PSC 201
American Government

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 100, RDG 100
Co-requisite: None

Course Description:

This course is a study of national governmental institutions with emphasis on the constitution, the functions of executive, legislative and judicial branches, civil liberties and the role of the electorate.

Course Topics:

• Definitions of government and politics.
• Origins and impact of the U.S. Constitution.
• Federal system and the changing roles of national, state and local government
• Bill of Rights.
• Impact of public opinion on politics.
• Relevance of political parties.
• Campaign and election process.
• Roles of special interest groups.
• Impact of the media on the political process.
• Makeup and function of Congress.
• Power and function of the Presidency.
• Structure and function of the federal bureaucracy.
• Function of the Judiciary.
• Making of public policy.
• Making of foreign policy.

Required Materials:
None

Grading System:
An overall grade of C or higher is required for transferability.

A 90-100
B 80-89
C 70-79
D 60-69
F 0-59

Student Learning Outcomes:
• Explain the nature of government and the origins of American federalism.
• Explain America's heritage of rights and liberties, the roles of public opinion and political parties.
• Examine the impact of interest groups and the media on the political process.
• Contrast the roles of Congress, the President and the federal bureaucracy.
• Examine the role of the Judiciary and the making of domestic and foreign policy.

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PSC 206
Politics of the Middle East

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 101 with a minimum grade of “C”.
Co-requisite: None
Course Description:
This course examines the domestic and international politics of countries in the Middle East. Coursework compares political systems in the region and factors such as economics, religion, and societal divisions that influence both domestic politics and external relations of the countries.

Course Topics:
• The impact of Islam on the region
• Political boundaries in the region and their significance
• Sunni and Shi'a Islam
• Sharia Law
• Tribal society
• Imperialism and the post-Ottoman territories
• History of a specific country
• The impact of religion on government
• Minority religions’ influence on the political situation
• The economic factors that impact the population of the country
• Environmental issues
• The culture of the country
• Islam's influence on the people
• Western influence within the country and its influence on the population

Required Materials:
None

Grading System:
An overall grade of C or higher is required for transferability.

A 90-100
B 80-89
C 70-79
D 60-69
F 0-59

Student Learning Outcomes:
- Locate and describe the geography of the Middle East.
- Explain the history of the Middle East.
- Describe the history, economy, environment, and culture of a specific country in the Middle East.
- Analyze the Arab-Israeli conflict.
- Analyze the present day political stability of the Middle East.

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PSC 215

State and Local Government

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 100, RDG 100
Co-requisite: None

Course Description:
This course is a study of state, county, and municipal government systems, including interrelationships between these systems and within the federal government.

Course Topics:
- The Setting of State and Local Government
- Intergovernmental Relations
- Political Parties and Interest Groups
- Political Participation and Elections
- State and Local Legislatures
- Governors, Bureaucrats, and Mayors
- Courts, Police and Corrections
- Financing State and Local Government
- State and Local Policy Making

Required Materials:
None

Grading System:
An overall grade of C or higher is required for transferability.

A 90-100
B 80-89
C 70-79
D 60-69
F 0-59

Student Learning Outcomes:
- Discuss the origins and practice of federalism.
- Discuss different methods of political participation.
- Discuss how the three branches of government operate in the states.
- Discuss the functions of local government.
- Examine the Constitution.

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PSC 220

Introduction to International Relations
PSY 103
Human Relations

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 032, RDG 032
Co-requisite: None
Course Description:
This course is a study of human relations, including the dynamics of behavior, interrelationships, and personality as applied in everyday life. The course is a study of the technical and the administrative systems including organization design, technology, job redesign and enrichment, leadership and appraising performance. Other topics deal with work problems and behavioral effectiveness, including communicating, managing change and using organizational development interventions. Classes stimulate students to think practically and to resolve human relations problems.
Course Topics:
- Human Relations: A background
- Self-Concept and Self-Esteem in Human Relations
• Self-Awareness and Self-Disclosure
• Attitudes
• Personal and Organizational Values
• Motivation: Increasing Productivity
• Communication and Human Relations
• People, Groups, and their Leaders
• Teams in Quality Organizations
• Stress and Stress Management
• Business Ethics and Social Responsibility
• Human Relations and Your Future Success

Required Materials:
None

Grading System:
An overall grade of C or higher is required for transferability.
A 90-100
B 80-89
C 70-79
D 60-69
F 0-59

Student Learning Outcomes:
• Trace the development of the human relations movement along with associated personal and organizational values.
• Describe factors related to individual success.
• Summarize motivation in the workplace.
• Describe leadership issues.
• Identify factors involved in workplace communication.
• List contemporary workplace issues.
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PSY 201
General Psychology

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 100, RDG 100, MAT 101, or MAT 155, or MAT 160, or MAT 170
Co-requisite: None
Course Description:
This course includes the following topics and concepts in the science of behavior: scientific method, biological bases for behavior, perception, motivation, learning memory, development, personality, abnormal behavior, therapeutic techniques, and social psychology.

Course Topics:
• Psychological methods of research
• Biological basis for behavior
• Human growth and development
• Sensation and perception
• States of consciousness
• Learning
• Memory
• Personality
• Psychological disorders
• Therapeutic techniques
• Social psychology

Required Materials:
None

Grading System:
An overall grade of C or higher is required for transferability.
A 90-100
B 80-89
C 70-79
PSY 203
Human Growth and Development

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: PSY 201
Co-requisite: None

Course Description:
This course is a study of the physical, cognitive, and social factors affecting human growth, development, and potential.

Course Topics:
- Basic genetics and gene interactions
- Prenatal development, birth and parenting
- Physical, cognitive, and social development during infancy and early childhood
- Physical, cognitive, and social development during middle childhood and adolescence
- Physical, cognitive, and social development during early, middle, and late adulthood.

Required Materials:
None

Grading System:
An overall grade of C or higher is required for transferability.
A 90-100
B 80-89
C 70-79
D 60-69
F 0-59

Student Learning Outcomes:
- Distinguish the effects of heredity and environment on prenatal development, birth, and parenting.
- Summarize the physical, cognitive, and psychosocial development of infancy.
- Explain the physical, cognitive, and psychosocial development of early childhood.
- Analyze the physical, cognitive, and psychosocial development of middle childhood and adolescence.
- Describe the physical, cognitive, and psychosocial changes that occur during early, middle, and late adulthood.

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PSY 212
Abnormal Psychology

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: PSY 201

Student Learning Outcomes:
- Explain scientific approaches and psychological methods of research.
- Describe the physiological basis of behavior.
- Describe the major issues of the developing person.
- Differentiate between the various states of consciousness.
- Explain the principles and applications of memory.
- Describe the perspectives of personality.
- Differentiate between the clinical features of and the treatment for the psychological disorders.

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Co-requisite: None

Course Description:
This course is a study of the nature and development of behavioral disorders, including the investigation of contemporary treatment procedures.

Course Topics:
- Historical overview of abnormal psychology
- Research methods
- Psychological perspectives
- Classification and assessment of abnormal behavior
- Dissociative disorders
- Somatoform disorders
- Anxiety disorders
- Mood disorders
- Psychotic disorders
- Sexual disorders including gender identity disorder
- Personality disorders
- Childhood disorders

Required Materials:
None

Grading System:
An overall grade of C or higher is required for transferability.
A 90-100
B 80-89
C 70-79
D 60-69
F 0-59

Student Learning Outcomes:
- Apply the biological, psychodynamic, behavioral, cognitive, humanistic, and sociocultural perspectives to explain maladaptive behavior.
- Differentiate between the clinical features of and treatment for dissociative disorders.
- Differentiate between the clinical features of and treatment for somatoform disorders.
- Differentiate between the clinical features of and treatment for anxiety disorders.
- Distinguish between the clinical features of and treatment for mood disorders.
- Distinguish between the clinical features of and treatment for psychotic disorders.

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**PSY 214**
Psychology of the Exceptional Child

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: PSY 201
Co-requisite: None

Course Description:
This course is a study of the growth, development and training of exceptional children, including children with disabilities and the gifted.

Course Topics:
- Historical perspective
- Disabilities
- Gifted/talented
- Intervention strategies
- Legal issues
- Labeling
Assessment
Supports
Diversity
Family issues

Required Materials:
None

Grading System:
An overall grade of C or higher is required for transferability.

A 90-100
B 80-89
C 70-79
D 60-69
F 0-59

Student Learning Outcomes:

- Describe characteristics of children with various disabilities.
- Discuss factors related to children who are gifted and/or talented.
- Trace the development of services to children with exceptionalities from a historical perspective.
- Explain legal issues pertaining to children with exceptionalities.
- Describe how issues related to diversity and the family impact persons with exceptionalities.
- Demonstrate selected teaching/treatment strategies useful in working with exceptional children.
- Identify resources to assist children with special needs.

RAD 102
Patient Care Procedures

Hours: Class 2, Lab 0, Credit 2
Pre-requisite: Admission into the Radiologic Technology Program.
Co-requisite: None
Course Description:
This course provides a study of the procedures and techniques used in the care of the diagnostic imaging patient.

Course Topics:
- Professionalism
- Ethics and Morals
- Diversity
- Safety and transferring of patients
- Vital signs
- Patient history
- Medical emergencies
- Aseptic technique
- Contrast media
- Fractures

Required Materials:
- Pencil for all tests

Grading System:
An overall grade of C or higher is required to continue in the Radiologic Technology Program.

A 94-100
B 85-93
C 75-84
D 70-74
F 0-69

Student Learning Outcomes:
• Demonstrate appropriate patient interaction with emphasis on professionalism, moral and ethics.
• Identify and describe the correct technique for evaluating and meeting the physical needs of the patient.
• Demonstrate proper methods for safety, transfer, and positioning of a patient.
• Analyze and choose the concept appropriate to provide the medical action needed during an acute situation.
• Identify means of infection control through aseptic and non-aseptic techniques.
• List contrast media used in radiographic studies.
• List drugs used during medical emergencies for allergic reactions.

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RAD 105
Radiographic Anatomy

Hours: Class 4, Lab 0, Credit 4
Pre-requisite: Admission into the Radiologic Technology Program.
Co-requisite: RAD 130
Course Description:
This course includes the study of the structures of the human body and the normal function of its systems. Special emphasis is placed on radiographic anatomy.

Course Topics:
• Organization of the body in planes, body sections and body cavities
• Cells and tissues
• Integumentary system
• Skeletal system
• Muscular system
• Nervous system
• Senses
• Endocrine system
• Blood
• Cardiovascular system
• Lymphatic system
• Respiratory system
• Digestive system
• Urinary system
• Reproductive system

Required Materials:
• Computer with internet access
  View computer requirements for the online portion of the course.
• Word processing software (must be able to save WORD format)
• Antivirus software.
• Colored pencils may be used for diagram identification.

Grading System:
An overall grade of C or higher is required to continue in the Radiologic Technology Program.
A 94-100
B 85-93
C 75-84
D 70-74
F 0-69

Student Learning Outcomes:
• Identify all the body systems of the human body.
• Match all organs in the human body to the correct body system to which they are a part of.
- Locate the organs of the body systems in the correct cavities of the human body.
- Explain the function of each body system and organs of the human body.
- Apply knowledge of organs in the body system to determine injury and pathological conditions to the human body.

RAD 110
Radiographic Imaging I

Hours: Class 2, Lab 3, Credit 3
Pre-requisite: Admission into the Radiologic Technology Program
Co-requisite: None

Course Description:
This course provides a detailed study of the parameters controlling radiation quality and quantity for radiographic tube operation and image production.

Course Topics:
- Radiation and its discovery
- The X-ray beam
- Image formation
- Radiographic quality
- Radiographic film
- Image receptors
- Image processing
- Computed and digital radiography principles
- Technique conversions

Required Materials:
- Computer with internet access
- Word processing software (must be able to save WORD format)
- Antivirus software.
- Colored pencils may be used for diagram identification.

Grading System:
An overall grade of C or higher is required to continue in the Radiologic Technology Program.

A 94-100
B 85-93
C 75-84
D 70-74
F 0-69

Student Learning Outcomes:
- Recognize and articulate the foundational development of modern radiography.
- Differentiate between rays comprising the electromagnetic spectrum with emphasis on the characteristics and production of x-radiation.
- Apply basic principles in the production of a radiographic image.
- Summarize the construction and significance of medical radiographic film.
- Apply the principles pertinent to radiographic cassettes and intensifying screens for image production.
- Identify and describe components of the processing area which affect quality radiographic imaging.
- Summarize and compare the principles of digital and computerized radiography to conventional radiography.
- Calculate and employ formulas for technique conversions.
RAD 115
Radiographic Imaging II

Hours: Class 2, Lab 3, Credit 3
Pre-requisite: All previously taken RAD courses with a grade of "C" or higher.
Co-requisite: None
Course Description:
This course continues a detailed study of primary and secondary influencing factors and accessory equipment related to imaging.

Course Topics:
- Radiographic Qualities: Density, Contrast, Detail, Distortion, and Latitude
- Production of scatter radiation
- Reduction of scatter radiation
- Influencing factors affecting radiographs
- Technique charts
- Automatic exposure control
- Tomography
- Magnification radiography
- Sensitometry
- Quality control for radiographic processing
- Utilization of computed radiography and digital radiography

Required Materials:
- Computer with internet access
  View computer requirements for the online portion of the course.
- Word processing software (must be able to save WORD format)
- Antivirus software.
- Colored pencils may be used for diagram identification.

Grading System:
An overall grade of C or higher is required to continue in the Radiologic Technology Program.
A 94-100
B 85-93
C 75-84
D 70-74
F 0-69

Student Learning Outcomes:
- Analyze and critique radiographic images for quality factors.
- Evaluate factors that affect the production of scatter radiation on an image.
- Evaluate methods of improving image quality by reducing the effects of scatter radiation.
- Recognize and describe the processor quality control methods to improve image quality.
- Demonstrate the effects that a change in technical formulas would have on the quality of an image.
- Apply the basic radiographic principles when utilizing both digital and computed radiography.

RAD 121
Radiographic Physics

Hours: Class 3, Lab 3, Credit 4
Pre-requisite: All previously taken RAD courses with a grade of "C" or higher.
Co-requisite: None

Course Description:
This course introduces the principles of radiographic physics, incorporating theory and application of basic principles underlying the operation and maintenance of x-ray equipment.

Course Topics:
- Systems of Measurement
- Structure of Matter
- Electricity
- Electromagnetism
- Rectification
- Production of X-Rays
- Components of the X-Ray Circuit
- Imaging Intensification
- Automatic Exposure Control
-Computed Tomography

Required Materials:
- Computer with internet access
- Word processing software (must be able to save WORD format)
- Antivirus software.

Grading System:
An overall grade of C or higher is required to continue in the Radiologic Technology Program.

A 94-100
B 85-93
C 75-84
D 70-74
F 0-69

Student Learning Outcomes:
- Identify basic concepts of radiation science to include systems of measurement and the structure of matter.
- Differentiate among basic concepts of electricity.
- Differentiate between the principles and concepts of electromagnetism.
- Identify the principles and concepts of rectification.
- Summarize the properties and production of x-rays.
- Relate the parts of the radiographic tube to its efficient operation.
- Organize the components of the x-ray circuit in the appropriate working order.
- Recognize the principles and functioning of the image intensification system.
- Indicate the principles of the automatic exposure control system.
- Identify the principles of CT.

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RAD 130
Radiographic Procedures I

Hours: Class 2, Lab 3, Credit 3
Pre-requisite: Admission into the Radiologic Technology Program
Co-requisite: RAD 105

Course Description:
This course provides an introduction to radiographic procedures. Positioning of the chest, abdomen, and extremities are included.
Course Topics:
- Positioning Terminology
- General Considerations for Radiography
- Abdomen Radiography
- Chest Radiography
- Upper Extremity Radiography
- Shoulder Girdle Radiography

Required Materials:
- Pencil for all tests.

Grading System:
An overall grade of C or higher is required to continue in the Radiologic Technology Program.

A 94-100  
B 85-93  
C 75-84  
D 70-74  
F 0-69

Student Learning Outcomes:
- Perform routine and non-routine radiographic examinations of the abdomen, chest, upper extremity, and shoulder girdle.
- Provide age-appropriate patient care when performing routine and non-routine radiographic examinations of the abdomen, chest, upper extremity, and shoulder girdle.
- Communicate clearly to patients, radiographers, and other health care personnel when performing routine and non-routine radiographic examinations of the abdomen, chest, upper extremity, and shoulder girdle.
- Apply appropriate radiation protection principles when performing routine and non-routine radiographic examinations of the abdomen, chest, upper extremity, and shoulder girdle.
- Identify radiographic anatomy on completed images of the abdomen, chest, upper extremity, and shoulder girdle.
- Critique radiographic images of the abdomen, chest, upper extremity, and shoulder girdle to determine technical quality.

RAD 136
Radiographic Procedures II

Hours: Class 2, Lab 3, Credit 3
Pre-requisite: All previously taken RAD courses with a grade of "C" or higher.
Co-requisite: None

Course Description:
This course is a study of radiographic procedures for visualization of the structures of the body.

Course Topics:
- Contrast Media
- Digestive System Radiography
- Lower Extremity Radiography
- Bony Thorax Radiography
- Vertebral Column Radiography

Required Materials:
- Pencil for all tests.

Grading System:
An overall grade of C or higher is required to continue in the Radiologic Technology Program.
A 94-100  
B 85-93  
C 75-84  
D 70-74  
F 0-69

Student Learning Outcomes:

- Perform routine and non-routine radiographic examinations of the bony thorax, digestive system, lower extremity and vertebral column.
- Provide age-appropriate patient care when performing routine and non-routine radiographic examinations of the bony thorax, digestive system, lower extremity and vertebral column.
- Communicate clearly to patients, radiographers, and other health care personnel when performing routine and non-routine radiographic examinations of the bony thorax, digestive system, lower extremity and vertebral column.
- Apply appropriate radiation protection principles when performing routine and non-routine radiographic examinations of the bony thorax, digestive system, lower extremity and vertebral column.
- Identify radiographic anatomy on completed images of the bony thorax, digestive system, lower extremity and vertebral column.
- Critique radiographic images of the bony thorax, digestive system, lower extremity and vertebral column to determine technical quality.

RAD 153  
Applied Radiography I

Hours: Class 0, Lab 9, Credit 3  
Pre-requisite: Admission into the Radiologic Technology Program.  
Co-requisite: None  
Course Description:

This course introduces the clinical environment of the hospital by providing basic use of radiographic equipment and routine radiographic procedures.

Course Topics:

- Professionalism  
- Program policies and procedures  
- Clerical duties  
- Transportation of patients  
- X-ray Equipment  
- Radiation Protection  
- Aseptic technique  
- Chest procedures  
- Abdomen procedures

Required Materials:

- Proper uniforms and accessories (refer to dress code)  
- Clinical packet  
- Time cards  
- Competency book  
- Radiologic Technology Program Student Handbook.

Grading System:

An overall grade of C or higher is required to continue in the Radiologic Technology Program.

A 94-100  
B 85-93  
C 75-84
Student Learning Outcomes:

- Communicate and work effectively with the healthcare professionals and patients while demonstrating appropriate radiographic skills.
- Perform radiographic procedures from the following categories in a simulated environment:
  - Chest
  - Abdomen
  - Upper Extremity
  - Shoulder Girdle
- Master beginning level radiography procedures and tasks:
  - Chest Procedure
  - Abdomen Procedure
  - Computed Radiography Reader
  - Equipment Identification at each of the assigned clinical sites
  - Generator Assessment at two of the assigned clinical sites
  - Handwashing Technique
  - Stretcher Patient Transfer
  - Wheelchair Patient Transfer
  - View Room
- Critique routine chest and abdomen images.
- Demonstrate participation in professional development through the ASRT Directed Reading activity.
- Demonstrate adherence to Radiologic Technology Program policies and procedures.

RAD 176
Applied Radiography III

Hours: Class 0, Lab 18, Credit 6

Pre-requisite: All previously taken RAD courses with a grade of "C" or higher.

Co-requisite: None

Course Description:
This course includes clinical education needed for building competence in performing radiographic procedures within the clinical environment.

Course Topics:
- Communication
- Professionalism
- Patient Care
- Radiographic Anatomy and Procedures
- Image Evaluation
- Radiation Protection
- Equipment Operation

Required Materials:
- Proper uniforms and accessories (refer to dress code)
- Clinical packet
- Time cards
- Competency book
- Radiologic Technology Program Student Handbook

Grading System:
An overall grade of C or higher is required to continue in the Radiologic Technology Program.

A 94-100
B 85-93
C 75-84
Student Learning Outcomes:

- Communicate and work effectively with the healthcare professionals and patients while demonstrating appropriate radiographic skills.
- Perform radiographic procedures from the following categories in a simulated environment:
  - Chest
  - Abdomen
  - Upper Extremity
  - Shoulder Girdle
  - Lower Extremity
  - Digestive System
  - Bony Thorax
  - Vertebral Column
- Demonstrate competency in the performance of radiographic procedures specific to the semester (refer to class addendum).
- Critique one procedure from both the upper and lower extremity categories.
- Demonstrate participation in professional development through the ASRT Directed Reading activity.
- Demonstrate adherence to Radiologic Technology Program policies and procedures.

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RAD 201

Radiation Biology

Hours: Class 1, Lab 3, Credit 2

Pre-requisite: All previously taken RAD courses with a grade of "C" or higher.

Co-requisite: None

Course Description:

This course is a study of the principles of radiobiology and protection. It emphasizes procedures that keep radiation exposure to patients, personnel, and the population at large to a minimum.

Course Topics:

- Introduction to radiation protection
- Radiation types and sources
- Interaction of x-rays and matter
- Radiation quantities and units
- Radiation monitoring
- Molecular and cellular radiation biology
- Early effects of radiation on the organ systems
- Late effects of radiation on the organ systems
- Dose limits for exposure to radiation
- Equipment design for radiation protection
- Radiation protection for the patient
- Radiation protection for the occupational personnel
- Radioisotopes and radiation protection

Required Materials:

- Computer with internet access
  View computer requirements for the online portion of the course.
- Word processing software (must be able to save WORD format)
- Antivirus software.
- Colored pencils may be used for diagram identification.

Grading System:
An overall grade of C or higher is required to continue in the Radiologic Technology Program.

A 94-100
B 85-93
C 75-84
D 70-74
F 0-69

Student Learning Outcomes:

- Explain how different sources of radiation produce radiant energy.
- Evaluate the biologic interactions or radiation on cells, tissues, organs, and organ systems of the human body.
- Explain the units of measurement for radiant energy and how each applies to various mediums.
- Discuss various radiation monitoring devices and the importance of their use in the radiology profession.
- Apply principles of radiation protection to be used in various situations related to diagnostic radiography.
- List NCRP standards used to provide radiation protection and safety in diagnostic radiography.

RAD 205
Radiographic Pathology

Hours: Class 2, Lab 0, Credit 2
Pre-requisite: All previously taken RAD courses with a grade of “C” or higher.
Co-requisite: None
Course Description:

This course provides a survey of disease processes significant to the radiographer, including etiology, diagnosis, prognosis, and treatment.

Course Topics:

- General Pathologic Terms
- Disease Processes of the Musculoskeletal System
- Disease Processes of the Respiratory System
- Disease Processes of the Abdomen and Hepatobiliary System
- Disease Processes of the Digestive System
- Disease Processes of the Cardiovascular System
- Disease Processes of the Central Nervous System
- Disease Processes of the Genitourinary System

Required Materials:

- Computer with internet access
  View computer requirements for the online portion of the course.
- Word processing software (must be able to save WORD format)
- Antivirus software.

Grading System:

An overall grade of C or higher is required to continue in the Radiologic Technology Program.

A 94-100
B 85-93
C 75-84
D 70-74
F 0-69

Student Learning Outcomes:

- Describe the general principles and terms of pathology.
- Classify diseases, definitions, etiology, treatment, and prognosis along with radiographic procedures or
examination and diagnosis for diseases relating to:
- Musculoskeletal system
- Respiratory system
- Abdominal and Hepatobiliary system
- Gastrointestinal system
- Genitourinary system
- Central Nervous System
- Cardiovascular
- Describe the radiographic appearance of diseases of each body system.
- Identify the appropriate technical changes required to best demonstrate each pathological condition.
- Research a specific pathology for written and radiographic presentation.

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RAD 225
Selected Radiographic Topics

Hours: Class 1, Lab 3, Credit 2
Pre-requisite: All previously taken RAD courses with a grade of "C" or higher.
Co-requisite: None
Course Description:
This course is a study of selected areas related to radiography.

Course Topics:
- Medical Terminology
- Anatomy and Physiology
- Radiographic Procedures
- Patient Management
- Image Production
- Radiation Biology and Protection
- Equipment Operation and Maintenance
- Testing Taking Strategies

Required Materials:
- Computer with internet access
- Word processing software (must be able to save WORD format)
- Antivirus software.
- Pencil for all tests, ring-binder and notebook paper
- All radiologic technology required textbooks

Grading System:
An overall grade of C or higher is required to continue in the Radiologic Technology Program.
A 94-100
B 85-93
C 75-84
D 70-74
F 0-69

Student Learning Outcomes:
- Use test taking strategies to enhance performance on mock registry exams.
- Apply the principles of image acquisition and evaluation.
- Apply the principles related to performance of radiographic procedures.
- Apply the principles of Equipment operation and Quality Control.
- Apply principles of radiation protection for occupational workers and the general public.
Apply the principles of patient care and education in the imaging department.

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RAD 230
Radiographic Procedures III

Hours: Class 2, Lab 3, Credit 3
Pre-requisite: All previously taken RAD courses with a grade of "C" or higher.
Co-requisite: None
Course Description:
This course is a study of special radiographic procedures.

Course Topics:
- Skull Radiography
- Facial Bones and Paranasal Sinuses Radiography
- Biliary System Radiography
- Urinary System Radiography
- Trauma and Surgical Radiography
- Interventional Radiographic Procedures
- Cross-Sectional Anatomy

Required Materials:
- Pencil for all tests.

Grading System:
An overall grade of C or higher is required to continue in the Radiologic Technology Program.

A 94-100
B 85-93
C 75-84
D 70-74
F 0-69

Student Learning Outcomes:
- Perform routine and non-routine radiographic examinations of the skull, facial bones, biliary and urinary systems, to include trauma and surgical exams.
- Provide age-appropriate patient care when performing routine and non-routine radiographic examinations of the skull, facial bones, biliary and urinary systems, to include trauma and surgical exams.
- Communicate clearly to patients, radiographers, and other health care personnel when performing routine and non-routine radiographic examinations of the skull, facial bones, biliary and urinary systems, to include trauma and surgical exams.
- Apply appropriate radiation protection principles when performing routine and non-routine radiographic examinations of the skull, facial bones, biliary and urinary systems, to include trauma and surgical exams.
- Identify radiographic anatomy on completed images of the skull, facial bones, biliary and urinary systems, to include trauma and surgical exams.
- Critique radiographic images of the skull, facial bones, biliary and urinary systems to determine technical quality, to include trauma and surgical exams.
- Differentiate radiographic anatomy from the standard orientation) to the cross-sectional orientation.
- Identify various specialized radiologic procedures performed within the interventional radiology suite.

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RAD 256
Advanced Radiography I
Hours: Class 0, Lab 18, Credit 6

Pre-requisite: All previously taken RAD courses with a grade of "C" or higher.
Co-requisite: None

Course Description:
This course includes independently performing routine procedures in a radiology department, including involvement in advanced radiographic procedures.

Course Topics:
- Communication
- Professionalism
- Patient Care
- Radiographic Anatomy and Procedures
- Image Evaluation
- Radiation Protection
- Equipment Operation

Required Materials:
- Proper uniforms and accessories (refer to dress code)
- Clinical packet
- Time cards
- Competency book
- Radiologic Technology Program Student Handbook

Grading System:
An overall grade of C or higher is required to continue in the Radiologic Technology Program.

A 94-100
B 85-93
C 75-84
D 70-74
F 0-69

Student Learning Outcomes:
- Communicate and work effectively with the healthcare professionals and patients while demonstrating appropriate radiographic skills.
- Perform radiographic procedures from the following categories in a simulated environment:
  - Chest
  - Abdomen
  - Upper Extremity
  - Shoulder Girdle
  - Lower Extremity
  - Digestive System
  - Bony Thorax
  - Vertebral Column
  - Skull, Facial Bones, and Paranasal Sinuses
  - Biliary System
  - Urinary System
- Demonstrate competency in the performance of radiographic procedures specific to the semester (refer to class addendum).
- Evaluate radiographic images for appropriate positioning and image quality using a systematic approach to image evaluation.
- Demonstrate participation in professional development through the ASRT Directed Reading activity.
- Perform a minimum of 1 proficiency test as identified by the clinical instructor.
- Apply radiographic principles while completing the monthly testing registry review program.
- Demonstrate adherence to Radiologic Technology Program policies and procedures.

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RAD 268
Advanced Radiography II

Hours: Class 0, Lab 24, Credit 8
Pre-requisite: All previously taken RAD courses with a grade of "C" or higher.
Co-requisite: None
Course Description:

This course includes routine radiographic examinations, as well as advanced procedures, while continuing to build self-confidence in the clinical atmosphere.

Course Topics:
- Communication
- Professionalism
- Patient Care
- Radiographic Anatomy and Procedures
- Image Evaluation
- Radiation Protection
- Equipment Operation

Required Materials:
- Proper uniforms and accessories (refer to dress code)
- Clinical packet
- Time cards
- Competency book
- Radiologic Technology Program Student Handbook

Grading System:

An overall grade of C or higher is required to continue in the Radiologic Technology Program.

A 94-100
B 85-93
C 75-84
D 70-74
F 0-69

Student Learning Outcomes:

- Communicate and work effectively with the healthcare professionals and patients while demonstrating appropriate radiographic skills.
- Perform radiographic procedures from the following categories in a simulated environment:
  - Chest
  - Abdomen
  - Upper Extremity
  - Shoulder Girdle
  - Lower Extremity
  - Digestive System
  - Bony Thorax
  - Vertebral Column
  - Skull, Facial Bones, and Paranasal Sinuses
  - Biliary System
  - Urinary System
- Demonstrate competency in the performance of radiographic procedures specific to the semester (refer to class addendum).
- Evaluate radiographic images for appropriate positioning and image quality using a systematic approach to image evaluation.
- Demonstrate participation in professional development through the ASRT Directed Reading activity.
- Perform a minimum of two proficiency tests as identified by the clinical instructor.
- Apply radiographic principles while completing the monthly testing registry review program.
• Demonstrate adherence to Radiologic Technology Program policies and procedures.

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RAD 278
Advanced Radiography III

Hours: Class 0, Lab 24, Credit 8
Pre-requisite: All previously taken RAD courses with a grade of “C” or higher.
Co-requisite: None
Course Description:

This course includes routine and advanced radiographic procedures in the clinical environment.

Course Topics:
• Communication
• Professionalism
• Patient Care
• Radiographic Anatomy and Procedures
• Image Evaluation
• Radiation Protection
• Equipment Operation

Required Materials:
• Proper uniforms and accessories (refer to dress code)
• Clinical packet
• Time cards
• Competency book
• Radiologic Technology Program Student Handbook

Grading System:
An overall grade of C or higher is required to continue in the Radiologic Technology Program.

A 94-100
B 85-93
C 75-84
D 70-74
F 0-69

Student Learning Outcomes:
• Communicate and work effectively with the healthcare professionals and patients while demonstrating appropriate radiographic skills.
• Perform radiographic procedures from the following categories in a simulated environment:
  • Chest
  • Abdomen
  • Upper Extremity
  • Shoulder Girdle
  • Lower Extremity
  • Digestive System
  • Bony Thorax
  • Vertebral Column
  • Skull, Facial Bones, and Paranasal Sinuses
  • Biliary System
  • Urinary System
• Demonstrate competency in the performance of radiographic procedures specific to the semester (refer to class addendum).
• Evaluate radiographic images for appropriate positioning and image quality using a systematic approach to image evaluation.
• Demonstrate participation in professional development through the ASRT Directed Reading activity.
• Perform final proficiency testing as identified by the clinical instructor.
• Apply radiographic principles while completing the monthly testing registry review program.
• Demonstrate adherence to Radiologic Technology Program policies and procedures.

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RAD 282
Imaging Practicum

Hours: Class 2, Lab 0, Credit 2
Pre-requisite: All previously taken RAD courses with a grade of "C" or higher.
Co-requisite: None
Course Description:

This clinical course provides an opportunity for exploration of career opportunities in radiology and advanced imaging modalities.

Course Topics:
• Quality Management
• Pharmacology
• Venipuncture
• Electrocardiography

Required Materials:
• Pencil for all tests, calculator

Grading System:
An overall grade of C or higher is required to continue in the Radiologic Technology Program.

A 94-100
B 85-93
C 75-84
D 70-74
F 0-69

Student Learning Outcomes:
• Integrate knowledge of radiographic procedures, imaging, and radiation protection to quality assurance and quality control in the radiology department.
• Analyze data collected for quality control tests as related to equipment performance.
• Identify the radiographer's role in medication and their administration to the patient.
• Demonstrate proper venipuncture skills in a simulated situation.
• Describe the basic principles of electrocardiography (ECG).

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RAD 283
Imaging Practicum

Hours: Class 1, Lab 6, Credit 3
Pre-requisite: All previously taken RAD courses with a grade of "C" or higher.
Co-requisite: None
Course Description:

This clinical course provides an opportunity for exploration of career opportunities in radiology and advanced imaging modalities.

Course Topics:
• Interventional Radiology
• Magnetic Resonance Imaging
• Mammography
• Nuclear Medicine

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Radiation Oncology

Ultrasound

Required Materials:

- Proper uniform and accessories (refer to dress code)
- Daily clinical records
- Time cards
- Radiologic Technology Program Student Handbook

Grading System:

An overall grade of C or higher is required to continue in the Radiologic Technology Program.

A 94-100
B 85-93
C 75-84
D 70-74
F 0-69

Student Learning Outcomes:

- Communicate and work effectively with the healthcare professionals and patients within four of the following special imaging modalities: Interventional Radiology, Magnetic Resonance Imaging, Mammography, Nuclear Medicine, Radiation Oncology and Ultrasound.
- Assist in the performance of a procedure(s) in four of the following special imaging modalities under the direct observation of a qualified practitioner: Interventional Radiology, Magnetic Resonance Imaging, Mammography, Nuclear Medicine, Radiation Oncology and Ultrasound.
- Identify the basic principles of four of the following special imaging modalities: Interventional Radiology, Magnetic Resonance Imaging, Mammography, Nuclear Medicine, Radiation Oncology and Ultrasound.
- Describe how diagnostic radiography complements the special imaging modalities.
- Demonstrate adherence to Radiologic Technology Program policies and procedures while rotating through the various special imaging modalities.

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RDG 032

Developmental Reading

Hours: Class 3, Lab 0, Credit 3

Pre-requisite: None

Co-requisite: None

Course Description:

This course is an intensive review of the academic reading skills needed for success in a college-level course. Students will demonstrate their understanding of reading as a process and will apply strategies learned to expand their reading comprehension skills. Students will demonstrate the ability to integrate knowledge, use context clues, and identify supporting details.

Course Topics:

- Vocabulary in Content
- Main Ideas
- Supporting Details
- Relationships
- Fact and Opinion

Required Materials:

- 3-ring notebook
- Notebook dividers
- College-level dictionary
- USB
RDG 100

Critical Reading

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: RDG 032
Co-requisite: None
Course Description:

This course covers the application of basic reading skills to improve critical comprehension and higher order thinking skills. Non-degree credit

Course Topics:

- Vocabulary Skills
- Main Idea and Supporting Details
- Patterns of Organization
- Inference
- Critical Thinking

Required Materials:

- 3-ring notebook
- Notebook dividers
- College-level dictionary
- USB, pens and pencils
- Stapler
- Highlighter
- Access to a computer capable of formatting documents in Word or RTF
- Internet access

Grading System:

A 93 – 100
B 85 – 92
C 75 – 84
D 65 – 76
F 0 – 64

Student Learning Outcomes:
- Determine the meaning of unfamiliar words by employing context clues, recognizing word parts, and using dictionary skills in reading selections.
- Identify the main idea by determining the topic and key details in a reading selection.
- Demonstrate comprehension of readings by predicting patterns of organization.
- Deduce implied meaning in reading passages by employing inferential skills.
- Evaluate an argument by applying the four steps of critical thinking.

REL 101
Introduction to Religion

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 100, RDG 100 with grade of "C" or better.
Co-requisite: None

Course Description:
This course provides a study of religion and the nature of religious belief and practice.

Course Topics:
- History, terms and beliefs of the major world religions.
- Comparing and contrasting competing claims of the various traditions about the afterlife, the problem of evil, human nature and other topics.
- Evaluate current events that are impacted by the various religious traditions covered in the course.

Required Materials:
- None

Grading System:
A grade of "C" or higher is required for transferability.
A 93 – 100
B 85 – 92
C 75 – 84
D 65 – 74
F 0 – 64

Student Learning Outcomes:
- Identify the different definitions of religion, along through written exams and class papers.
- Analyze and explicate various categories used in comparative religion, such as Ritual, Ethics and Doctrine through class discussion and class papers.
- Articulate the strengths and weaknesses of the various definitions of religion on exams and class discussion.
- Evaluate current events that involve religious traditions and apply understandings of basic terms and history through class discussion.
- Summarize and compare the various examples from specific traditions of categories such as Ritual, Ethics, and Doctrine through exams and papers.

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REL 104
Early Christian History and Literature

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 100, RDG 100 with grade of "C" or better.
Co-requisite: None

Course Description:
This course provides a study of the Biblical New Testament and other early Christian writings, emphasizing the historical and cultural contexts in which they were produced.

Course Topics:
- Major historical, cultural and literary influences on Early Christian literature.
- Explore competing understandings of various passages in New Testament writings.

Required Materials:
- Any version of the Bible

Grading System:
A grade of “C” or higher is required for transferability.
A 93 – 100
B 85 – 92
C 75 – 84
D 65 – 74
F 0 – 64

Student Learning Outcomes:
- Identify cultural and historical influences on Early Christianity through written exams and class papers.
- Analyze and explicate the various forms of literature found in the New Testament through class discussion and written exams.
- Articulate and compare the differing theologies found in various literary forms in the New Testament through class discussion and written exams.
- Analyze competing interpretations of key New Testament passages through class discussion and papers.
- Explicate competing claims about non-canonical documents found in current popular media through class discussions and papers.

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REL 105
Early Jewish History and Literature/Old Testament

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 100, RDG 100 with grade of “C” or better.
Co-requisite: None

Course Description:
This course provides a study of the Tanakh, the Talmud, and other early Jewish works, emphasizing the historical and cultural contexts in which they were created.

Course Topics:
- History, themes and content of Hebrew Bible literature.
- Major historical, cultural and literary influences on Hebrew Bible literature.
- Explore competing understandings of various passages in Hebrew Bible writings.

Required Materials:
- Any version of the Hebrew Bible (Old Testament)

Grading System:
REL 201
Religions of the World

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 100, RDG 100 with grade of "C" or better.
Co-requisite: None
Course Description:
This course surveys the major religious traditions of the world.

Course Topics:
- History, terms and beliefs of the major world religions.
- Comparing and contrasting competing claims of the various traditions about the afterlife, the problem of evil, human nature and other topics.
- Evaluate current events that are impacted by the various religious traditions covered in the course.

Required Materials:
- Computer with Internet access
- Ability to format documents in .doc, .docx, .rtf, or .html format.

Grading System:
A grade of "C" or higher is required for transferability.
A 93 – 100
B 85 – 92
C 75 – 84
D 65 – 74
F 0 – 64

Student Learning Outcomes:
- Identify historical and cultural influences on Early Judaism through written exams and class papers.
- Analyze and explicate different types of literature found in the Hebrew Bible through class discussion and written exams.
- Articulate different theological positions found in the various literary genres of the Hebrew Bible through class discussion and written exams.
- Analyze competing interpretations of key Hebrew Bible passages through class discussion and papers.
- Explicate competing claims about canonical and non-canonical documents found in current popular media through class discussion and papers.

A grade of "C" or higher is required for transferability.
A 93 – 100
B 85 – 92
C 75 – 84
D 65 – 74
F 0 – 64

Student Learning Outcomes:
- Identify historical and cultural influences on Early Judaism through written exams and class papers.
- Analyze and explicate different types of literature found in the Hebrew Bible through class discussion and written exams.
- Articulate different theological positions found in the various literary genres of the Hebrew Bible through class discussion and written exams.
- Analyze competing interpretations of key Hebrew Bible passages through class discussion and papers.
- Explicate competing claims about canonical and non-canonical documents found in current popular media through class discussion and papers.

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Evaluate current events that involve religious traditions and apply understandings of basic terms and history through class discussion.

Summarize and compare the various religious traditions’ answers to basic questions such as how to overcome human evil, what is human nature on a chart outlining these issues.

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RES 111
Pathophysiology

Hours: Class 1, Lab 3, Credit 2
Pre-requisite: Successful completion of prior program requirements.
Co-requisite: None

Course Description:
This course is a study of the general principles and analyses of normal and diseased states.

Course Topics:
- Introduction to Physical Assessment
- Oxygenation and ventilation failure
- Asthma
- Chronic Obstructive Pulmonary Disease – COPD
- Acute Respiratory Distress Syndrome

Required Materials:
- A four function mathematical calculator

Grading System:
The standard mathematical procedure of rounding will be applied to arrive at a whole number percentage in the final grade calculation.

A grade of

Student Learning Outcomes:
- Summarize the pathophysiology, clinical features and treatment of oxygenation and ventilation failure.
- Summarize the pathophysiology, clinical features and treatment of asthma.
- Summarize the pathophysiology, clinical features and treatment of chronic obstructive pulmonary disease.
- Summarize the pathophysiology, clinical features and treatment of acute respiratory distress syndrome.
- Summarize the pathophysiology, clinical features and treatment of chest trauma.
- Summarize the pathophysiology, clinical features and treatment of pneumonia.
- Summarize the pathophysiology, clinical features and treatment of sleep disorder breathing.
- Summarize the pathophysiology, clinical features and treatments of tuberculosis.

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RES 121
Respiratory Skills I

Hours: Class 3, Lab 3, Credit 4
Pre-requisite: Admission into the Respiratory Care Program.
Co-requisite: None

Course Description:
This course includes a study of basic respiratory therapy procedures and their administration.

Course Topics:
RES 123
Cardiopulmonary Physiology

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: Successful completion of prior program requirements.
Co-requisite: None
Course Description:
This course covers cardiopulmonary physiology and related systems.

Course Topics:
- Anatomy and Physiology of the Respiratory System
- Anatomy and Physiology of the Cardiac System
- Basic operation of a fluid filled system
- Arterial Pressure Monitoring
- Pulmonary Artery Pressure Monitoring
- Pharmacologic influences on hemodynamics
- Monitoring patients in shock

Required Materials:
- Students are expected to have viewed the online presentations prior to class and come to class prepared with their text.

Grading System:
The standard mathematical procedure of rounding will be applied to arrive at a whole number percentage in the final grade calculation.

A grade of "C" or higher is required to continue in the associate degree program.

A 92 – 100
B 84 – 91
C 76 – 83
D 68 – 75
F 0 – 67

Student Learning Outcomes:

- Evaluate the pulmonary anatomy and physiology to include a full physical assessment of the system.
- Evaluate the cardiovascular anatomy and physiology to include a full physical assessment of the system.
- Analyze the operation of a fluid-filled system.
- Analyze arterial pressure monitoring to include placement of an indwelling arterial catheter.
- Analyze pulmonary artery pressure monitoring.
- Identify and evaluate techniques used to monitor cardiac output.
- Summarize the continuous monitoring of mixed venous oxygen saturation.
- Summarize the pharmacologic influences on hemodynamic parameters.
- Summarize the monitoring of a patient in shock.
- Evaluate weekly literature searches involving differing aspects of cardiopulmonary physiology.

RES 131
Respiratory Skills II

Hours: Class 3, Lab 3, Credit 4

Pre-requisite: Successful completion of prior program requirements.
Co-requisite: None

Course Description:

This course is a study of selected respiratory care procedures and applications.

Course Topics:

- Bronchial hygiene
- Hyperinflation therapy
- Airway management of the non-intubated patient
- Electrocardiograph
- Arterial blood gas sampling

Required Materials:

- Four function mathematical calculator

Grading System:

The standard mathematical procedure of rounding will be applied to arrive at a whole number percentage in the final grade calculation.

A grade of "C" or higher is required to continue in the associate degree program.

A 92 – 100
B 84 – 91
C 76 – 83
D 68 – 75
RES 141
Respiratory Skills III

Hours: Class 2, Lab 3, Credit 3
Pre-requisite: Successful completion of prior program requirements.
Co-requisite: None
Course Description:
This course covers mechanical ventilation systems, pediatrics and associated monitors.

Course Topics:
- Basic adult mechanical ventilation and application
- Establishing the need for ventilation
- Basic adult non-invasive ventilation and application
- Basic ventilator modes and settings

Required Materials:
None

Grading System:
The standard mathematical procedure of rounding will be applied to arrive at a whole number percentage in the final grade calculation.
A grade of “C” or higher is required to continue in the associate degree program.
A 92 – 100
B 84 – 91
C 76 – 83
D 68 – 75
F 0 – 67

Student Learning Outcomes:
- Establish the need for mechanical ventilation.
- Demonstrate non-invasive ventilation.
- Select the ventilator and the mode based on clinical finding and assessment data.
- Determine initial ventilator settings.
- Modify ventilator settings based on patient clinical findings.

RES 151
Clinical Applications I

Hours: Class 0, Lab 15, Credit 5
Pre-requisite: Successful completion of prior program

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requirements.
Co-requisite: None
Course Description:
This course covers the fundamental respiratory care procedures in the hospital setting.

Course Topics:
- Application of adult floor aerosol therapy
- Application of patient assessment skills
- Application of oxygen modalities
- Application of pulmonary function testing
- Principals of cleaning, storage, assembly, use, theory and operation of equipment

Required Materials:
- Required uniform
- Name tag
- Student patch
- Watch with a second hand
- Stethoscope
- Scissors
- Calculator
- Black ink pen
- Clinical syllabus and clinical log forms as outlined in the student handbook.

Grading System:
The standard mathematical procedure of rounding will be applied to arrive at a whole number percentage in the final grade calculation.
A grade of "C" or higher is required to continue in the associate degree program.

A 92 – 100
B 85 – 91
C 75 – 84
D 65 – 74
F 0 – 64

Student Learning Outcomes:
- Demonstrate concepts and theory of adult floor therapy learned in the classroom.
- Demonstrate concepts and principals of adult floor therapy learned in the laboratory setting.
- Demonstrate cognitive competency in adult floor therapy.
- Demonstrate psychomotor skills in adult floor therapy classroom and laboratory setting.
- Explain the theory, operation, cleaning, storage, assembly and use of equipment used in the performance of respiratory care.

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RES 152
Clinical Applications II

Hours: Class 0, Lab 9, Credit 3
Pre-requisite: Successful completion of prior program requirements.
Co-requisite: None
Course Description:
This course includes practice of respiratory care procedures in the hospital setting.

Course Topics:
Application of adult floor aerosol therapy
Application of patient assessment skills
Application of oxygen modalities
Application of pulmonary function testing
Principals of cleaning, storage, assembly, use, theory and operation of equipment

Required Materials:
In addition to the items below, the student is also required to maintain a current CPR card and TB testing within one year at all times.

- Required uniform
- Name tag
- Student patch
- Watch with a second hand
- Stethoscope
- Scissors
- Calculator
- Black ink pen
- Clinical syllabus
- Clinical log forms as outlined in the student handbook.

Grading System:
The standard mathematical procedure of rounding will be applied to arrive at a whole number percentage in the final grade calculation.

- A grade of "C" or higher is required to continue in the associate degree program.
  - A 92 – 100
  - B 84 – 91
  - C 76 – 83
  - D 68 – 75
  - F 0 – 67

Student Learning Outcomes:
- Demonstrate concepts and principals of adult floor therapy learned in the classroom and laboratory setting.
- Demonstrate competency in the performance of adult floor therapy learned in the classroom and laboratory setting.
- Demonstrate knowledge of the theory, operation, cleaning, storage, assembly, and use of equipment used in respiratory care.
- Develop and demonstrate the patient assessment process with physician interactions.
- Conduct himself/herself in an ethical and professional manner.

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RES 154
CLINICAL APPLICATIONS II

Hours: Class 0, Lab 12, Credit 4
Pre-requisite: 
Co-requisite: 
Course Description:
This course includes practice of respiratory care procedures in the hospital setting.

Course Topics: 
Required Materials:
RES 204
Neonatal/Pediatric Care

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: Successful completion of prior program requirements.
Co-requisite: None

Course Description:
This course focuses on cardiopulmonary physiology, pathology, and management of the newborn and pediatric patient.

Course Topics:
- Development and care of the fetus from conception through birth.
- Care of a neonatal or pediatric patient.
- Causes and care of illness in perinatal and pediatric patients.
- Oxygenation and ventilation in the neonatal and pediatric patient.

Required Materials:
Students are expected to have viewed the video presentations prior to class and come to class prepared with their text.

Grading System:
A 92-100
B 84-91
C 76-83
D 68-75
F 0-67

Student Learning Outcomes:
- Summarize the development and care of the fetus from conception through birth.
- Recommend care for a neonatal or pediatric patient.
- Differentiate the causes and care of illness in perinatal and pediatric patients.
- Initiate mechanical ventilation for a neonatal or pediatric patient.
- Modify oxygenation and ventilation in the neonatal and pediatric patient.

RES 232
Respiratory Therapeutics

Hours: Class 1, Lab 3, Credit 2
Pre-requisite: Successful completion of prior program requirements.
Co-requisite: None

Course Description:
This course is a study of specialty areas in respiratory care, including rehabilitation.

Course Topics:
- Principals of ACLS
- Principals of 12-Lead ECG interpretation
- Principals of pulmonary rehabilitation
Use of protocols, evidence-based medicine and outcomes assessment
• Principals of mass casualties and disaster management
• Assisting the physician with exercise testing, pleural procedures and bronchoscopy procedures.

Required Materials:
Students are expected to have viewed the online presentations prior to class and come to class prepared with their text.

Grading System:
The standard mathematical procedure of rounding will be applied to arrive at a whole number percentage in the final grade calculation.

A grade of "C" or higher is required to continue in the associate degree program.

A 92 – 100
B 84 – 91
C 76 – 83
D 68 – 75
F 0 – 67

Student Learning Outcomes:
• Apply the principles of ACLS.
• Interpret a 12-Lead ECG.
• Illustrate how a respiratory therapist assists a physician with a pleural procedure.
• Illustrate how a respiratory therapist assists a physician with a bronchoscopy procedure.
• Summarize the effects of smoking on the cardiopulmonary and other organ systems.
• Apply the principles of pulmonary rehab.
• Develop respiratory therapy protocols.
• Analyze quality assurance and outcomes assessment in respiratory care.
• Practice evidence-based care.
• Prepare for mass casualties/disasters.
• Interpret an exercise test.

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RES 241
Respiratory Care Transition
Hours: Class 1, Lab 0, Credit 1
Pre-requisite: Successful completion of prior program requirements.
Co-requisite: None
Course Description:
This course provides a comprehensive review of respiratory care.

Course Topics:
• Preparation of the student for the written board exam that is taken upon graduation
• Test taking strategies.

Required Materials:
None

Grading System:
The standard mathematical procedure of rounding will be applied to arrive at a whole number
A grade of "C" or higher is required to continue in the associate degree program.

A 92 – 100  
B 84 – 91  
C 76 – 83  
D 68 – 75  
F 0 – 67

Student Learning Outcomes:

- Prepare for successful completion of the written board exam.
- Analyze test-taking strategies to enhance performance on standardized tests.
- Review cognitive material relevant to the Entry-Level Respiratory Care Practitioner.
- Describe the three different types of exam questions found on the NBRC credentialing examination.
- Practice examination questions in preparation for the national credential examinations.

RES 242
Advanced Respiratory Care Transition

Hours: Class 1, Lab 0, Credit 1

Pre-requisite: Successful completion of prior program requirements.

Co-requisite: None

Course Description:

Successful completion of prior program requirements.

Course Topics:

- Prepare the student for the advanced written board exam that is taken upon graduation
- Test-taking strategies for both the written and clinical simulation exams

Required Materials:

None

Grading System:

The standard mathematical procedure of rounding will be applied to arrive at a whole number percentage in the final grade calculation.

A grade of "C" or higher is required to continue in the associate degree program.

A 92 – 100  
B 84 – 91  
C 76 – 83  
D 68 – 75  
F 0 – 67

Student Learning Outcomes:

- Prepare for successful completion of the written board exam.
- Analyze test-taking strategies to enhance performance on standardized tests.
- Review cognitive material relevant to the Advanced-Level Respiratory Care Practitioner.
- Describe the three different types of exam questions found on the NBRC credentialing examination.
- Practice examination questions in preparation for the national credential examinations.

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RES 244

Advanced Respiratory Skills I

Hours: Class 3, Lab 3, Credit 4
Pre-requisite: Successful completion of prior program requirements.
Co-requisite: None
Course Description:

This course includes an in-depth study of mechanical ventilation and considerations for management of the critical care patient.

Course Topics:

- Advanced ventilator management
- Advanced ventilator graphics
- Weaning the patient from the ventilator

Required Materials:

None

Grading System:

The standard mathematical procedure of rounding will be applied to arrive at a whole number percentage in the final grade calculation.

A grade of

Student Learning Outcomes:

- Review the history of ventilation, modes and terminology and, basic ventilator graphics.
- Illustrate the advanced terms and concepts of mechanical ventilation.
- Demonstrate an understanding of how ventilators work.
- Diagram how a ventilator breath is delivered in each mode.
- Compare and contrast the relationship between volume, pressure, flow and time as they relate to advanced ventilator graphics.
- Outline the processes associated with ventilator liberation.

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RES 245

Advanced Respiratory Skills II

Hours: Class 1, Lab 3, Credit 2
Pre-requisite: Successful completion of prior program requirements.
Co-requisite: None
Course Description:

This course includes an in-depth study of pulmonary function and other considerations for pulmonary patients.

Course Topics:

- Avoiding lung injury with mechanical ventilation
Maximizing oxygen delivery and carbon dioxide removal with mechanical ventilation
Management differences of obstructive vs restrictive lung injuries with mechanical ventilation
Mechanical ventilation's effects on the other organ systems of the body
Troubleshooting alarm situations
Non-Traditional mechanical ventilation approaches

Required Materials:
Four function basic calculator

Grading System:
The standard mathematical procedure of rounding will be applied to arrive at a whole number percentage in the final grade calculation.
A grade of

Student Learning Outcomes:
Evaluate mechanical ventilation to avoid lung injury.
Modify ventilator management to maximize oxygen delivery and carbon dioxide removal.
Differentiate between obstructive and restrictive lung disease and how each is managed using mechanical ventilation.
Predict the effects of mechanical ventilation on the organ systems of the body.
Solve alarm situations involving mechanical ventilators.
Justify and integrate the use of non-traditional mechanical ventilation approaches.
Choose the appropriate method to assess the respiratory function of a patient on mechanical ventilation.

RES 246 Respiratory Pharmacology
Hours: Class 1, Lab 3, Credit 2
Pre-requisite: Successful completion of prior program requirements.
Co-requisite: None
Course Description:
This course includes a study of pharmacologic agents used in cardiopulmonary care.

Course Topics:
Sources of drugs, effects of drugs on the body and factors that alter drug effects
Physiology of the sympathetic and parasympathetic nervous systems
Outlining the mechanism of action of adrenergic, antialdrennergic, cholinergic, anticholinergic drugs, and aerosolized antimicrobials
Explaining the mechanism of action of respiratory care medications
Analyzing a case study and recommend the appropriate respiratory care medication to administer
Given a case study, appropriately modifying the medication regimen
Recognizing the side effects to respiratory care medications
Analyzing the medication regimen for a case study patient and deducing if the regimen is appropriate.
Required Materials:
Students are expected to have viewed the video presentations prior to class and come to class prepared with their text.

Grading System:
A 92-100
B 84-91
C 76-83
D 68-75
F 0-67

Student Learning Outcomes:
• Summarize the general pharmacological principles.
• Diagram the sources of drugs, effects of drugs on the body and factors that alter drug effects.
• Compare and contrast the physiology of the sympathetic and parasympathetic nervous.
• Outline the mechanism of action of adrenergic, antiadrenergic, cholinergic, anticholinergic drugs, and aerosolized antimicrobials.
• Explain the mechanism of action of respiratory care medications.
• Analyze a case study and recommend the appropriate respiratory care medication to administer.
• Given a case study, appropriately modify the medication regimen.
• Recognize side effects to respiratory care medications.
• Analyze the medication regimen for a case study patient and deduce if the regimen is appropriate.

RES 247
Advanced Respiratory Pharmacology

Hours: Class 2, Lab 0, Credit 2
Pre-requisite: Successful completion of prior program requirements.
Co-requisite: None
Course Description:
This course covers the indications, side effects, and hazards of pharmacologic agents used in the intensive care unit. Emphasis is on agents commonly administered by the respiratory care practitioner.

Course Topics:
• Basic ECG monitoring and rhythm interpretation
• Application of medications used ACLS principles
• Application of neuromuscular blocking agents, cardiovascular pharmacology, circulatory pharmacology, and diuretics

Required Materials:
Students are expected to have viewed the online presentations prior to class and come to class prepared with their text.

Grading System:
The standard mathematical procedure of rounding will be applied to arrive at a whole number percentage in the final grade calculation.
A grade of "C" or higher is required to continue in the associate degree program.
A 92-100  
B 84-91  
C 76-83  
D 68-75  
F 0-67

Student Learning Outcomes:

- Interpret ECG's from 3-lead tracings.
- Apply the principles of pharmacology to ACLS.
- Summarize the general pharmacological principles relating to the use of neuromuscular blocking agents and their mechanism of action.
- Apply the principles of pharmacology to the cardiovascular system.
- Apply the principles of pharmacology to drugs affecting the circulation.
- Apply the principles of pharmacology to diuretic agents.

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RES 255
Clinical Practice

Hours: Class 0, Lab 15, Credit 5
Pre-requisite: Successful completion of prior program requirements.
Co-requisite: None
Course Description:

This course includes clinical training with emphasis on intensive care.

Course Topics:

- Application of adult floor and critical care aerosol therapy
- Application of patient assessment skills in the adult floor and critical care setting
- Application of oxygen modalities in the adult floor and critical care setting
- Application of pulmonary function testing
- Application of respiratory care in the neonatal intensive care units
- Principals of cleaning, storage, assembly, use, theory and operation of equipment
- Demonstration of the patient assessment process with physician interaction.

Required Materials:

In addition to the items below, the student is also required to maintain a current CPR card and TB testing within one year at all times.

- Required uniform
- Name tag
- Student patch
- Watch with a second hand
- Stethoscope
- Scissors
- Calculator
- Black ink pen
- Clinical syllabus
- Clinical log forms as outlined in the student handbook.

Grading System:

The standard mathematical procedure of rounding will be applied to arrive at a whole number percentage in the final grade calculation.
A grade of "C" or higher is required to continue in the associate degree program.

A 92-100  
B 84-91  
C 76-83  
D 68-75  
F 0-67

Student Learning Outcomes:

- Demonstrate concepts and principals of adult floor therapy learned in the classroom and laboratory setting.
- Demonstrate competency in the performance of adult floor therapy learned in the classroom and laboratory setting.
- Demonstrate knowledge of the theory, operation, cleaning, storage, assembly, and use of equipment used in respiratory care.
- Develop and demonstrate the patient assessment process with physician interactions.
- Conduct himself/herself in an ethical and professional manner.

RES 275

Advanced Clinical Practice

Hours: Class 0, Lab 15, Credit 5  
Pre-requisite: Successful completion of prior program requirements.  
Co-requisite: None

Course Description:

This course includes clinical practice in advanced patient care procedures.

Course Topics:

- Application of adult floor and critical care aerosol therapy
- Application of patient assessment skills in the adult floor and critical care setting
- Application of oxygen modalities in the adult floor and critical care setting
- Application of pulmonary function testing
- Application of respiratory care in the neonatal intensive care units
- Principals of cleaning, storage, assembly, use, theory and operation of equipment
- Demonstration of the patient assessment process with physician interaction.
- Demonstration of competence in intubation of the airway
- Application of respiratory care in the home

Required Materials:

In addition to the items below, the student is also required to maintain a current CPR card and TB testing within one year at all times.

- Required uniform
- Name tag
- Student patch
- Watch with a second hand
- Stethoscope
- Scissors
- Calculator
- Black ink pen
Clinical syllabus
Clinical log forms as outlined in the student handbook.

Grading System:
The standard mathematical procedure of rounding will be applied to arrive at a whole number percentage in the final grade calculation.
A grade of "C" or higher is required to continue in the associate degree program.

A 92 – 100
B 84 – 91
C 76 – 83
D 68 – 75
F 0 – 67

Student Learning Outcomes:
- Demonstrate concepts and principals of adult floor therapy learned in the classroom and laboratory setting.
- Demonstrate competency in the performance of adult floor therapy learned in the classroom and laboratory setting.
- Demonstrate knowledge of the theory, operation, cleaning, storage, assembly, and use of equipment used in respiratory care.
- Plan, implement and modify respiratory care for adult patients in the critical care setting.
- Articulate respiratory care provided to patients in neonatal intensive care units.
- Develop and demonstrate the patient assessment process with physician interactions.
- Conduct himself/herself in an ethical and professional manner.
- Distinguish the special considerations for delivery respiratory care in the home care setting.
- Demonstrate competency in intubations under the direct supervision of anesthesiology services.

RES 277
Advanced Clinical Practice II

Hours: Class 0, Lab 15, Credit 5
Pre-requisite: Successful completion of prior program requirements.
Co-requisite: None
Course Description:
This course is the study of the clinical practice of advanced patient care procedures.

Course Topics:
- Application of adult floor and critical care aerosol therapy
- Application of patient assessment skills in the adult floor and critical care setting
- Application of oxygen modalities in the adult floor and critical care setting
- Application of pulmonary function testing
- Application of respiratory care in the neonatal intensive care units
- Principals of cleaning, storage, assembly, use, theory and operation of equipment
Demonstration of the patient assessment process with physician interaction.
Demonstration of competence in intubation of the airway
Application of respiratory care in the home

Required Materials:
In addition to the items below, the student is also required to maintain a current CPR card and TB testing within one year at all times.

- Required uniform
- Name tag
- Student patch
- Watch with a second hand
- Stethoscope
- Scissors
- Calculator
- Black ink pen
- Clinical syllabus
- Clinical log forms as outlined in the student handbook.

Grading System:
The standard mathematical procedure of rounding will be applied to arrive at a whole number percentage in the final grade calculation.

A grade of "C" or higher is required to continue in the associate degree program.

A 92-100  
B 84-91  
C 76-83  
D 68-75  
F 0-67

Student Learning Outcomes:
- Demonstrate concepts and principals of adult floor therapy learned in the classroom and laboratory setting.
- Demonstrate competency in the performance of adult floor therapy learned in the classroom and laboratory setting.
- Demonstrate knowledge of the theory, operation, cleaning, storage, assembly, and use of equipment used in respiratory care.
- Plan, implement and modify respiratory care for adult patients in the critical care setting.
- Articulate respiratory care provided to patients in neonatal intensive care units.
- Develop and demonstrate the patient assessment process with physician interactions.
- Conduct himself/herself in an ethical and professional manner.
- Administer emergency care to patients during am EMS Rotation at the discretion of EMS personnel.
- Independently function in the respiratory care setting with minimal supervision, properly performing all treatments and modalities in the assigned area without assistance.

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RPT 101
Introduction to Radiation Protection
Hours: Class 1, Lab 0, Credit 1
Pre-requisite: None
Co-requisite: None
Course Description:

This course provides a study of the radiation protection profession to include career paths, opportunities and challenges, roles and responsibilities of a radiation protection technician, and the culture of the nuclear industry.

Course Topics:
- Various cultures that exist at Duke Energy Nuclear Power plants.
- The importance of rationality, logic and coherence through critical thinking.
- Duke Energy policies on investing in the development of its employees.
- Significance in the ability to communicate in quantitative and qualitative term.
- The job requirements for a radiation protection.

Required Materials:
- Notebook
- Paper
- Pens and highlighters.
- Personal protective equipment (PPE) such as hard hat, safety glasses and ear plugs will be provided by Duke Energy during the field trip exercise

Grading System:
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Evaluate the significance of nuclear power in generating electricity.
- Identify the functions of external regulators in the Nuclear Power Industry.
- Classify the functions of the Radiation Protection Organization.
- Describe the basic principle of nuclear generation of electricity.
- Distinguish the major sources of radiation exposure in the nuclear environment as well as the potential health effects of exposure to ionizing radiation.
- Analyze methods to detect and measure ionizing radiation.
- Explain the requirements for nuclear station unescorted access/security clearance.

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This course provides an introduction to the fundamental operation of a nuclear power plant and addresses administrative guidelines that govern plant operations.

Course Topics:
Required Materials:
Grading System:
Student Learning Outcomes:

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RPT 202
FUNDAMENTAL PLANT SYSTEMS

Hours: Class 1, Lab 0, Credit 1
Pre-requisite: RPT 201 with a minimum grade of "B."
Co-requisite:
Course Description:
This course is the study of the purpose and function of the primary and secondary systems and components in nuclear power plants.

Course Topics:
Required Materials:
Grading System:
Student Learning Outcomes:

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RPT 203
GENERAL EMPLOYEE TRAINING

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: RPT 202 with a minimum grade of "B."
Co-requisite:
Course Description:
This course includes basic requirements in nuclear, industrial, and radiological safety needed for gaining unescorted access to a nuclear facility.

Course Topics:
Required Materials:
Grading System:
Student Learning Outcomes:

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RPT 204
HUMAN RESOURCES AND ERROR REDUCTION

Hours: Class 1, Lab 0, Credit 1
Pre-requisite: None
Co-requisite:
Course Description:
This course provides an orientation of employer specific programs and processes and an overview of the skills necessary for preventing human error in the nuclear environment.

Course Topics:
Required Materials:
RPT 205
RADIATION DETECTION AND STANDARDS

Hours: Class 2, Lab 0, Credit 2
Pre-requisite: RPT 203 with a minimum grade of “B”.
Co-requisite: None

Course Description:
This course is the study of the instrumentation and principles used to detect radiation, the source of radiation in the plant, and the applicability of designated standards and guidelines to the job of the radiation protection technician.

Course Topics:
Required Materials:
Grading System:
Student Learning Outcomes:

RPT 206
Radiation Monitoring and Exposure Control

Hours: Class 4, Lab 0, Credit 4
Pre-requisite: RPT 205 with a minimum grade of “B”.
Co-requisite: None

Course Description:
This course is the study of equipment used to monitor personal exposure to ionizing radiation and methods used to minimize the amount of exposure received during the operation and maintenance of the plant.

Course Topics:
- The significance of radiation monitoring
- The approach, methods, techniques, and documentation requirements pertaining to both

Required Materials:
None

Grading System:
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Explain basic decontamination concepts, techniques and required documentation for areas, equipment and personnel.
- Summarize the basic process used to calibrate radiation detection instrumentation to ensure accuracy of measurements.
- Identify the characteristics, uses, and limits associated with RP survey instruments as well as RP survey techniques and documentation.
- Describe basic concepts of internal dosimetry, including a review of basic terminology, methods
of entry and elimination, dose assessment models, and methods utilized to control, track and assign dose.

- Identify sources of airborne radioactive material, sampling and analysis techniques, and how exposure to airborne radioactivity is monitored, controlled and tracked.

- Explain basic contamination monitoring and control concepts including key terms, limits, instrument use and hot particle control as performed by Duke Energy Company.

- Indicate designated regulatory and advisory organizations that deal with regulatory protection standards and guidelines, describing the function of each.

- Discuss the hierarchy of specified governmental, company, and plant regulations and guidelines.

- Identify the criteria and requirements for radioactive material control and methods utilized for personnel exposure control.

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RPT 207
Contamination Control and Incident Prevention

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: RPT 206 with a minimum grade of “B”.
Co-requisite: None
Course Description:
This course is the study of methods used to control radioactive contamination on surfaces, liquid and gaseous effluents. Radiological events from operating experiences in the United States and other countries are also discussed.

Course Topics:
- Contamination Control
- Safety
- Incident prevention

Required Materials:
None

Grading System:
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Examine the ALARA concept, essential components of an effective ALARA program, and the techniques utilized to reduce dose.

- Categorize areas based on the radiological hazards in the area, describing various methods of posting and access control used in Duke Energy Nuclear Stations.

- Relate the radiological environmental considerations necessary for the safe operation of a nuclear plant and Radiation Protection’s role in monitoring the environmental impact.

- Explain various job coverage techniques and requirements; techniques include how to perform
• Radiation surveys, contamination surveys and airborne radioactivity surveys.
• Identify the use and preparation of RWPs and factors involved in determining radiological protection requirements.
• Describe various radiological incidents and the Radiation Protection responsibilities associated with responding to the incidents at Nuclear Plants.
• Evaluate the use of operating experience, several significant radiological events that resulted in excessive exposures, lesson learned from these events, and practices used to avoid similar events.

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RPT 208
Radiation Protection Internship I

Hours: Class 1, Lab 0, Credit 1
Pre-requisite: RPT 207 with a minimum grade of "B."
Co-requisite: None
Course Description:
This course provides an employer specific in-plant orientation and a list of expectations for completing the first internship at a nuclear power station. The intern evaluation form and task checklist will be discussed in terms of assisting in the performance of radiation protection activities.

Course Topics:
• Duke Energy performance appraisal system for interns.
• Operating Experience applicable to the internship.
• Tasks interns may be assigned to perform in an "assist" capacity.

Required Materials:
None

Grading System:
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
• Assist incumbent personnel with task CO-RP-1010, Operation of Portable Radiological Survey Instruments.
• Assist incumbent personnel with task CO-RP-1020, Perform Radiation and Contamination Surveys.
• Assist incumbent personnel with task CO-RP-1030, Perform Airborne Radioactivity Surveys.
• Assist incumbent personnel with task CO-RP-1031, Perform Full Train Air Sampling.
• Assist incumbent personnel with task CO-RP-1040, Radioactive Material Movement and Storage.
• Assist incumbent personnel with task CO-RP-1050, Radiological Posting and Deposting.
• Assist incumbent personnel with task CO-RP-1070, Operate Continuous Air Monitors (CAMs).
• Assist incumbent personnel with CO-RP-1130, Monitor and Coach Worker Ingress/Egress to
RPT 210
SCWE in Radiation Protection Internship I

Hours: Class 0, Lab 16, Credit 4
Pre-requisite: RPT 208 with a minimum grade of "B"
Co-requisite: None

Course Description:
This practical experience provides introductory "hands on" applications for performing basic radiation protection surveillance and control activities. During this internship the student will assist senior qualified technicians in the performance of these duties. Direct oversight is required.

Course Topics:
- Internship requirements
- Demonstration of understanding
- Successful application of learned skills

Required Materials:
None

Grading System:
A 90 – 100
B 80 – 89
C 70 – 79
D 60 – 69
F 0 – 59

Student Learning Outcomes:
- Successfully assist personnel with task CO-RP-1010, Operation of Portable Radiological Survey Instruments.
- Successfully assist incumbent personnel with task CO-RP-1020, Perform Radiation and Contamination Surveys.
- Successfully assist incumbent personnel with task CO-RP-1030, Perform Airborne Radioactivity Surveys.
- Successfully assist incumbent personnel with task CO-RP-1031, Perform Full Train Air Sampling.
- Successfully assist incumbent personnel with task CO-RP-1040, Radioactive Material Movement and Storage.
- Successfully assist incumbent personnel with task CO-RP-1050, Radiological Posting and Deposting.
- Successfully assist incumbent personnel with task CO-RP-1070, Operate Continuous Air Monitors (CAMs).
- Successfully assist incumbent personnel with CO-RP-1130, Monitor and Coach Worker Ingress/Egress to RCA/RCZs.
- Complete the documentation associated with internship activities.

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RPT 212
ON JOB TRAINING AND TASK PERFORMANCE EVALUATION PREPARATION

Hours: Class 1, Lab 0, Credit 1
Pre-requisite: RPT 210 with a minimum grade of "B".
Co-requisite:
Course Description:

This course covers nuclear industry process requirements for conducting on the job training (OJT) and task performance evaluations (TPE); it also orients the students to computer applications and knowledge elements for performing basic radiation protection tasks.

Course Topics:
Required Materials:
Grading System:
Student Learning Outcomes:

RPT 213
OJT/TPE ON STANDARDIZED TASKS

Hours: Class 6, Lab 0, Credit 6
Pre-requisite: RPT 212 with a minimum grade of "B".
Co-requisite:
Course Description:

This course includes on the job training & task performance evaluations of these tasks: taking, counting, & recording surveys; use of Alpha and Beta Gamma Smear Counters; posting & RCZ construction; control & storage of radioactive materials; monitoring and coaching workers entering/exiting RCA/RCZ

Course Topics:
Required Materials:
Grading System:
Student Learning Outcomes:

RPT 216
RADIATION PROTECTION INTERNSHIP II

Hours: Class 1, Lab 0, Credit 1
Pre-requisite: RPT 213 with a minimum grade of "B".
Co-requisite:
Course Description:

This course provides an employer specific in-plant orientation and a list of expectations for completing the second internship at a nuclear power station; the intern evaluation form and the intern task checklist will be discussed in terms of performing the tasks mastered in OJT/TPE.

Course Topics:
Required Materials:
RPT 218
SCWE IN RADIATION PROTECTION INTERNSHIP II

Hours: Class 0, Lab 16, Credit 4
Pre-requisite: RPT 216 with a minimum grade of "B".
Co-requisite:
Course Description:
This practical experience provides hands on applications for performing basic radiation protection surveillance and control activities. During this internship the student will perform the tasks mastered in OJT/TPE courses. Direct oversight by qualified personnel is required.
Course Topics:
Required Materials:
Grading System:
An overall grade of C or higher is required for transferability.
A 94-100

SAC 101
Best Practices in School-Age and Youth Care Skills

Hours: Class 3, Lab 0, Credit 3
Pre-requisite:
Co-requisite: None
Course Description:
This course introduces basic best practices of school-age and youth care skills for practitioners in out-of-school care environments.
Course Topics:
- The School-Age Care Profession
- The School-Age Care Professional
- Physical Development
- Play
- Cognitive Development
- Communication
- Creativity
- Social Development
- Self
- Guidance
- Morality
- Trends and Issues for School Age Care
- Program Environment
- A Healthy and Safe Environment
Required Materials:
- Computer with Internet access
- Word-processing software (must be able to save Word format)
- Anti-virus software
Grading System:
An overall grade of C or higher is required for transferability.
A 94-100
B 85-93  
C 75-84  
D 70-74  
F 0-69

Student Learning Outcomes:

• Select space, time, and materials to plan developmentally appropriate experiences that encourage children's play, exploration, and learning. (NAEYC 1a, 1c)
• Identify the principles of child growth and development to serve as a foundation for working effectively with young children. (NAEYC 1a)
• Identify strategies and techniques for providing a supportive environment in which children can develop self-control and interact positively with others. (NAEYC 1c)
• Name strategies for establishing and maintaining positive and productive relationships with families. (NAEYC 2a)
• Identify community resources to assist children with diverse abilities, their families, and early care education professionals. (NAEYC 2b, 2c, 3d)
• Identify national, state and local standards, policies, regulations, and laws that are applicable to school-age care programs. (NAEYC 6a, 6d)
• Demonstrate effective strategies and tools for early education, including appropriate uses of technology. (NAEYC 4b)

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SOC 101
Introduction to Sociology

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 100, RDG 100
Co-requisite: None
Course Description:

This course emphasizes the fundamental concepts and principles of sociology, including culture, socialization, interaction, social groups and stratification, effects of population growth, and technology in society and social institutions.

Course Topics:

• The Sociological Perspective
• Sociological Imagination
• Culture
• Society
• Socialization
• Social Interaction in Everyday Life
• Social Class in the United States
• Gender Stratification
• Race and Ethnicity
• Families
• Religion
• Health and Medicine

Required Materials:

None

Grading System:

An overall grade of C or higher is required for transferability.
A 90-100  
B 80-89
Student Learning Outcomes:

- Describe the origins, perspectives, and methods of sociology as a social science.
- Describe the framework of culture, stratification, and sociological insights into social change.
- List the basic institutions of society and explain the reasons for the existence and continuation of these.
- Identify Sociology in the narrow applications of socialization, interaction, and group relations.
- Explain how and why health is a social issue and not just a matter of biology.

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SOC 102
Marriage and the Family

Hours: Class 3, Lab 0, Credit 3
Pre-requisit: Pre-Requisites: SOC 101 WITH A C OR BETTER
Co-requisite: None
Course Description:

This course introduces the institutions of marriage and the family from a sociological perspective. Significant forms and structures of family groups are studied in relation to current trends and social change.

Course Topics:

- The Changing Family
- The Family in Historical Perspective
- Racial and Ethnic Families: Strengths and Stresses
- Socialization and Gender Roles
- Romance, Love, and Loving Relationships
- Sexuality and Sexual Expression Throughout Life
- Choosing Others: Dating and Mate Selection
- Singlehood, Cohabitation, Civil Unions, and Other Options
- Marriage and Communication in Intimate Relationships
- To Be or Not To Be a Parent
- Raising Children: Promises and Pitfalls
- Balancing Work and Family Life
- Domestic Conflict and Divorce
- The future trends with regard to the American family.

Required Materials:

None

Grading System:

An overall grade of C or higher is required for transferability.
A 90-100
B 80-89
C 70-79
D 60-69
F 0-59

Student Learning Outcomes:

- Define the concept of family.
- Compare and contrast families across societies.
- Describe how relationships are developed with regard to gender roles, romance, and sexuality.
- List and describe the major choices and constraints with regard to parenting and raising children.
- Identify and summarize areas of conflict and crisis in the family.

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**SOC 205**

**Social Problems**

**Hours:** Class 3, Lab 0, Credit 3  
**Pre-requisite:** SOC 101 with grade of "C" or better.  
**Co-requisite:** None  
**Course Description:**

This course is a survey of current social problems in America, stressing the importance of social change and conflicts as they influence perceptions, definitions, etiology, and possible solutions.

**Course Topics:**
- Studying Social Problems in the Twenty-First Century
- Wealth and Poverty: U.S. and Global Economic Inequalities
- Racial and Ethnic Inequality
- Inequality based on Age
- Alcohol and other Drugs
- Crime and Criminal Justice
- The Changing Family
- Problems in Politics and the Global Economy
- Global Social Problems: War and Terrorism
- Can Social Problems Be Solved?

**Required Materials:**

None

**Grading System:**

An overall grade of C or higher is required for transferability.

- A 90-100
- B 80-89
- C 70-79
- D 60-69
- F 0-59

**Student Learning Outcomes:**

- Explain the difference between personal and social problems.
- Show the correlation between problems of behavioral variance.
- Recognize the problems of inequality.
- Identify the problems of social institutions.
- Analyze global social problems.

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**SPA 101**

**Elementary Spanish I**

**Hours:** Class 4, Lab 0, Credit 4  
**Pre-requisite:** ENG 100, RDG 032 with grade of "C" or better.
Co-requisite: None

Course Description:

This course is a study of the four basic language skills: listening, speaking, reading, and writing, including an introduction to Hispanic cultures.

Course Topics:

- Reading skills appropriate for non-native speakers of Spanish at the first semester level
- Writing skills appropriate for non-native speakers of Spanish at the first semester level
- Speaking skills appropriate for non-native speakers of Spanish at the first semester level
- Listening skills appropriate for non-native speakers of Spanish at the first semester level
- Cultural awareness of traditions/events/significant persons in the Hispanic/Latino community

Required Materials:

- Spanish/English Dictionary recommended

Grading System:

An overall grade of C or higher is required for transferability.

A 93 – 100
B 85 – 92
C 75 – 84
D 65 – 74
F 0-64

Student Learning Outcomes:

- Demonstrate listening comprehension of spoken Spanish.
- Develop conversational skills in speaking Spanish.
- Demonstrate reading comprehension of written Spanish.
- Demonstrate writing comprehension in Spanish.
- Demonstrate knowledge of the culture, history, and daily lives of the Spanish-speaking peoples of the world.

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SPA 102

Elementary Spanish II

Hours: Class 4, Lab 0, Credit 4

Pre-requisite: SPA 101 with grade of "C" or better.

Co-requisite: None

Course Description:

This course continues development of the basic language skills and the study of Hispanic cultures.

Course Topics:

- Reading skills appropriate for non-native speakers of Spanish at the second semester level
- Writing skills appropriate for non-native speakers of Spanish at the second semester level
- Speaking skills appropriate for non-native speakers of Spanish at the second semester level
• Listening skills appropriate for non-native speakers of Spanish at the second semester level
• Cultural awareness of traditions/events/significant persons in the Hispanic/Latino community

Required Materials:
• Spanish/English Dictionary recommended

Grading System:
An overall grade of C or higher is required for transferability.
A 93 – 100
B 85 – 92
C 75 – 84
D 65 – 74
F 0-64

Student Learning Outcomes:
• Demonstrate listening comprehension of spoken Spanish.
• Develop conversational skills in speaking Spanish.
• Demonstrate reading comprehension of written Spanish.
• Demonstrate writing comprehension in Spanish.
• Demonstrate knowledge of the culture, history, and daily lives of the Spanish-speaking peoples of the world.

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SPA 105
CONVERSATIONAL SPANISH

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 100, RDG 032 with grade of “C” or better.
Co-requisite:
Course Description:
This course is a study of basic terminology in Spanish. Basic listening and speaking skills will be emphasized as well as relevant cultural aspects which may affect intercultural communications.

Course Topics:
Required Materials:
Grading System:
An overall grade of C or higher is required for transferability.
A 93 – 100
B 85 – 92
C 75 – 84
D 65 – 74
F 0-64

Student Learning Outcomes:
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SPA 201
Intermediate Spanish I
Hours: Class 3, Lab 0, Credit 3
Pre-requisite: SPA 102 with grade of "C" or better.
Co-requisite: None
Course Description:

This course is a review of Spanish grammar with attention given to more complex grammatical structures and reading difficult prose.

Course Topics:

- Reading skills appropriate for non-native speakers of Spanish at the third semester level
- Writing skills appropriate for non-native speakers of Spanish at the third semester level
- Speaking skills appropriate for non-native speakers of Spanish at the third semester level
- Listening skills appropriate for non-native speakers of Spanish at the third semester level
- Cultural awareness of traditions/events/significant persons in the Hispanic/Latino community

Required Materials:

- Spanish/English Dictionary recommended

Grading System:

An overall grade of C or higher is required for transferability.

A 93 – 100
B 85 – 92
C 75 – 84
D 65 – 74
F 0-64

Student Learning Outcomes:

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SPA 202
Intermediate Spanish II

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: SPA 201 with grade of "C" or better.
Co-requisite: None
Course Description:

This course continues a review of Spanish grammar with attention given to more complex grammatical structures and reading more difficult prose.

Course Topics:

- Reading skills appropriate for non-native speakers of Spanish at the fourth semester level
- Writing skills appropriate for non-native speakers of Spanish at the fourth semester level
- Speaking skills appropriate for non-native speakers of Spanish at the fourth semester level
- Listening skills appropriate for non-native speakers of Spanish at the fourth semester level
- Cultural awareness of traditions/events/significant persons in the Hispanic/Latino community
Required Materials:
- Spanish/English Dictionary recommended

Grading System:
An overall grade of C or higher is required for transferability.
- A 93 – 100
- B 85 – 92
- C 75 – 84
- D 65 – 74
- F 0-64

Student Learning Outcomes:

SPC 205
Public Speaking

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 100, RDG 100 with grade of "C" or better.
Co-requisite: None

Course Description:
This course is an introduction to principles of public speaking with application of speaking skills.

Course Topics:
- Speech Development
- The Elements and Models of Communication
- Listening Skills
- Audience Analysis
- Topic Selection
- Language and Delivery
- Types and Styles of Public Speaking
- Group and Interpersonal Communication
- Informative Speaking
- Persuasive Speaking
- Monroe's Motivated Sequence

Required Materials:
- Access to a computer with Windows 2000 (minimum)
- Ability to format documents as .doc, .docs, .rtf, or .html
- Internet access

Grading System:
An overall grade of C or higher is required for transferability.
- A 93-100
- B 85-92
- C 75-84
- D 65-74
- F 0-64

Student Learning Outcomes:
- Demonstrate poise and skill in public speaking activities by delivering a minimum of four speeches.
- Compose and deliver effectively and extemporaneously various types of speeches.
- Compile and cite in MLA Format supporting material utilized in research oriented speeches.
• Recognize and articulate the concepts, terms, theories, and vocabulary associated with speech communication.
• Develop strategies for overcoming speech anxiety and establishing confidence.
• Demonstrate their ability to speak publicly, listen actively, and respond effectively.

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SPC 208
Intercultural Communication

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 100, RDG 100 with grade of "C" or better.
Co-requisite: None

Course Description:
This course is an introduction to the theory and practice of "difference-based" communication—the study of face-to-face communication where significant cultural differences exist in values, perception, and verbal and nonverbal behavior.

Course Topics:
• Cultural Identity
• Cultural Lenses
• Global Consciousness
• Perspectives
• Managing Cross-Culture Conflict
• Multicultural Teaming
• Bias
• Power Dynamics

Required Materials:
None

Grading System:
An overall grade of C or higher is required for transferability.
A 93-100
B 85-92
C 75-84
D 65-74
F 0-64

Student Learning Outcomes:
• Analyze and assess the student's own culture.
• Identify and apply various intercultural communication theories and models.
• Identify various verbal and nonverbal communication uses and cultural variations.
• Design and produce cultural competence.
• Identify cultural prejudices, attitudes, and values.

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SPC 209
Interpersonal Communication

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 100, RDG 100 with grade of "C" or better.
Co-requisite: None
Course Description:

This course is an introduction to the principles of interpersonal communication with emphasis on interpersonal theory as applied to personal and professional relationships. Students will learn to observe and analyze how these principles operate in daily interaction with others.

Course Topics:
- Basic communication terminology and models
- Communication Competence
- Self Concept development and presentation
- Perception
- Emotions
- Language
- Nonverbal Communication
- Listening
- Relational Dynamics
- Communication in intimate and non-intimate relationships
- Communication in the workplace
- Improving communication climates
- Managing communication conflicts

Required Materials:
- Access to a computer with Windows 2000 (minimum)
- Ability to format documents as .doc, .docs, .rtf, or .html
- Internet access

Grading System:
An overall grade of C or higher is required for transferability.

A 93-100
B 85-92
C 75-84
D 65-74
F 0-64

Student Learning Outcomes:
- Identify, integrate, and apply various interpersonal communication theories and concepts.
- Distinguish and compare various conflict management styles and evaluate causes of conflict and develop methods of conflict resolution.
- Differentiate various nonverbal communication behaviors across cultural contexts.
- Demonstrate their ability to speak publicly, listen actively, and respond effectively.
- Practice verbal strategies for desired communication outcomes.
- Interpret perception of self and others while adopting empathic behavior.
- Analyze the role communication plays in relationships while being able to construct positive maintenance behaviors.

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SPC 212
SURVEY OF MASS COMMUNICATION

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 100, RDG 100 with grade of "C"
Co-requisite:

Course Description:
This course is a survey of the development of media and its influence upon society. Topics focus on newspapers, magazines, radio and television broadcasting, and film and their impact on American culture. Students will critique mass media using modern methodology.

Course Topics:

Required Materials:

Grading System:

Student Learning Outcomes:

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SPC 285
Advanced Public Speaking

Hours: Class 3, Lab 0, Credit 3

Pre-requisite: ENG 101, SPC 205 with grade of “C” or better.

Co-requisite: None

Course Description:
This course continues the study of principles of public speaking with application of speaking skills. Emphasis will be placed on a deeper understanding of communication theory and on attainment of skills in incorporating media in presentations.

Course Topics:
- Speech Development
- Presentation Aids
- Speech Organization
- Topic Selection
- Language and Delivery
- Types and Styles of Public Speaking
- Group and Interpersonal Communication

Required Materials:
None

Grading System:

A 93-100
B 85-92
C 75-84
D 65-74
F 0-64

Student Learning Outcomes:
- Demonstrate the ability to design, produce, and evaluate aids in presentation.
- Demonstrate the ability to use presentation aids in a speech.
- Gather and cite in MLA or APA format supporting material for speeches.
- Define and apply correctly the concepts, terms, theories, and vocabulary associated with speech communication.
- Demonstrate the ability to use presentation software.

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SUR 101
Introduction to Surgical Technology

Hours: Class 4, Lab 3, Credit 5
Pre-requisite: Admission into the Surgical Technology Program.
Co-requisite: None
Course Description:

This course includes a study of the surgical environment, team concepts, aseptic technique, hospital organization, basic instrumentation and supplies, sterilization, principles of infection control, and wound healing.

Course Topics:

- History of Surgery
- Physical Environment of the Surgery Suite
- Surgical Supplies and Equipment
- Microbiology
- Sterilization and Disinfection
- General Patient Care and Safety
- Legal and Ethical Considerations

Required Materials:

- 1 folder with pockets

Grading System:

Students must maintain a final overall average of

Student Learning Outcomes:

- Compare the history of surgery to surgery today, the role of the Surgical Technologist to other surgical and hospital personnel, and hospital organization to the surgical suite.
- Analyze the physical environment of the surgery suite and other related departments, evaluating basic and workplace safety.
- Evaluate supplies used in the operating room.
- Identify and explain the use of various pieces of equipment in the operating room.
- Evaluate the principles of microbiology as they relate to the infectious process, transmission and body defenses.
- Analyze the principles of sterilization and disinfection.
- Analyze general patient care and safety in the surgical suite to include vital signs, urinary catheterization, hemostasis and blood replacement, and emergency situations.
- Assess the needs of the surgical patient to include legal and ethical considerations and the needs of special populations.

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SUR 102

Applied Surgical Technology

Hours: Class 1, Lab 12, Credit 5
Pre-requisite: Admission into the Surgical Technology Program.
Co-requisite: None
Course Description:

This course covers the principles and application of aseptic technique, the perioperative role, and medical/legal aspects.

Course Topics:
• Surgical Instrumentation
• Aseptic Technique
• Surgical Attire
• Scrubbing, Gowning, and Gloving
• Sterilization and Disinfection
• Proper Case Setup
• Preoperative Preparation

Required Materials:
• 1 folder with pockets
• Scrub Suits
• Protective eye wear
• Two blank mini DVD-RW

Grading System:
Students must maintain a final overall average of

Student Learning Outcomes:
• Identify basic surgical instruments by site, analyzing the care, handling and classification of each.
• Assess and apply principles of aseptic technique and surgical attire.
• Demonstrate proper scrubbing, gowning, and gloving.
• Set up a case for surgery, including assembling and opening of surgical supplies.
• Evaluate the preoperative preparation of the surgical patient to include transportation, positioning, and prepping and draping the surgical site.

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SUR 106
Advanced Surgical Procedures

Hours: Class 2, Lab 0, Credit 2
Pre-requisite: Successful completion of prior program requirements.
Co-requisite: None
Course Description:
This course is a study of advanced surgical procedures.

Course Topics:
• Obstetrics and Gynecologic
• Orthopedics
• Neurosurgery
• Computer Knowledge
• Physics/Robotics
• All Hazards Preparation

Required Materials:
• 1 folder with pockets

Grading System:
Students must maintain a final overall average of

Student Learning Outcomes:
• Identify the principles of obstetric and gynecologic surgery.
• Assess the principles of orthopedic surgery.
• Evaluate the principles of genitourinary surgery.
• Assess the principles of neurosurgery.
• Relate computer knowledge to safe patient care in the operating room.
• Validate the basic principles of electricity and their application in the operating room.
• Apply the principles of physics to safe patient care practices in the operating room.
• Apply the principles of robotic to safe patient care practices in the operating room.
• Assess and apply the principles of “All Hazards Preparation.”

SUR 107
Surgical Specialty Procedures

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: Successful completion of prior program requirements.
Co-requisite: None
Course Description:
This course is a study of the various surgical specialties.

Course Topics:
• Cardiothoracic Surgery
• Peripheral Vascular Surgery
• Plastic/Reconstructive Surgery
• Ophthalmic Surgery
• Otorhinolaryngologic Surgery
• Oral and Maxillofacial Surgery

Required Materials:
• 1 folder with pockets

Grading System:
Students must maintain a final overall average of

Student Learning Outcomes:
• Assess the principles of cardiothoracic surgery.
• Analyze the principles of peripheral vascular surgery.
• Explain the principles of plastic and reconstructive surgery.
• Evaluate the principles of ophthalmic surgery.
• Assess the principles of otorhinolaryngologic surgery.
• Explain the principles of oral and maxillofacial surgery.

SUR 108
Surgical Anatomy I

Hours: Class 2, Lab 3, Credit 3
Pre-requisite: Admission into the Surgical Technology Program.
Co-requisite: None
Course Description:
This course includes the study of the structures of the human body and the normal function of its generalized systems. Special emphasis is placed on surgical anatomy.
Course Topics:
- Organization
- Chemistry and Cells
- Tissue and Membranes
- Integumentary System
- Skeletal System
- Muscle System
- Nervous System
- Special Senses

Required Materials:
- 1 folder with pockets
- Medical dictionary of your choice

Grading System:
Students must maintain a final overall average of

Student Learning Outcomes:
- Define and describe the organization of the human body.
- Analyze the basic structure of cells and body tissues.
- Describe the anatomy and physiology of the skin and body membranes.
- Identify the anatomy and physiology of the Skeletal System.
- Describe the anatomy and physiology of the Muscular System.
- Explain the anatomy and physiology of the Nervous System.
- Describe the anatomy and physiology of the Special Senses.

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SUR 109
Surgical Anatomy II

Hours: Class 2, Lab 3, Credit 3
Pre-requisite: Successful completion of prior program requirements.
Co-requisite: None
Course Description:
This course includes the study of the structures of the human body and the normal function of its specialized systems. Special emphasis is placed on surgical anatomy.

Course Topics:
- Blood and Heart
- Peripheral Vascular System
- Lymphatic System
- Respiratory System
- Digestive System
- Urinary System
- Reproductive System
- Endocrine System

Required Materials:
- 1 folder with pockets
- Medical Dictionary of your choice

Grading System:
Students must maintain a final overall average of

Student Learning Outcomes:
• Define and describe the anatomy and physiology of the blood and heart.
• Analyze the anatomy and physiology of the peripheral vascular and lymphatic system.
• Describe the anatomy and physiology of the Respiratory System.
• Identify the anatomy and physiology of the Digestive System.
• Describe the anatomy and physiology of the Urinary System.
• Explain the anatomy and physiology of the Reproductive System.
• Describe the anatomy and physiology of the Endocrine System.

SUR 112
Surgical Practicum I

Hours: Class 0, Lab 12, Credit 4
Pre-requisite: Successful completion of prior program requirements.
Co-requisite: None
Course Description:
This course includes the application of perioperative theory under clinical supervision.

Course Topics:
• Prepare Operating Room
• Case Setup
• Scrub Role
• Circulating Duties
• Postoperative Room Decontamination
• Patient Preparation for Labor and Delivery
• Decontamination, Preparation, and Sterilization of Supplies

Required Materials:
• Scrub Suits
• Protective eye wear

Grading System:
Students must maintain a final overall average of

Student Learning Outcomes:
• Prepare the operating room for the surgical procedure by obtaining all necessary supplies and equipment.
• Set up a generic general case.
• Assist the surgeon when scrubbed by sponging, suctioning, cutting suture, holding retractors, manipulating endoscopic camera, and anticipating the needs of the surgeon.
• Support the registered nurse when circulating.
• Support the decontamination of the room postoperatively.
• Assist in the preparation of the patient during labor and delivery.
• Demonstrate the tasks for decontamination, preparation, and sterilization of supplies used in surgery.

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Surgical Specialty Practicum

Hours: Class 0, Lab 21, Credit 7
Pre-requisite: Successful completion of prior program requirements.
Co-requisite: None
Course Description:

This course includes the correlation of the principles and theories of specialized surgical procedures with clinical performance in affiliated hospitals.

Course Topics:
- Prepare Operating Room
- Case Setup
- Scrub Role
- Circulating Duties
- Postoperative Room Decontamination
- Patient Preparation for Labor and Delivery
- Decontamination, Preparation, and Sterilization of Supplies

Required Materials:
- Scrub Suits
- Protective eye wear

Grading System:

Students must maintain a final overall average of

Student Learning Outcomes:
- Prepare the operating room for the surgical procedure by obtaining all necessary supplies and equipment.
- Set up a generic general case.
- Assist the surgeon when scrubbed by sponging, suctioning, cutting suture, holding retractors, manipulating endoscopic camera, and anticipating the needs of the surgeon.
- Support the registered nurse when circulating.
- Support the decontamination of the room postoperatively.
- Assist in the preparation of the patient during labor and delivery.
- Demonstrate the tasks for decontamination, preparation, and sterilization of supplies used in surgery.

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SUR 116
Basic Surgical Procedures

Hours: Class 1, Lab 6, Credit 3
Pre-requisite: Successful completion of prior program requirements.
Co-requisite: None
Course Description:

This course is a study of basic surgical procedures to include intraoperative routines, sutures, medications, and anesthesia.

Course Topics:
- Sutures and Wound Closure Materials
- Intraoperative Routines Scrub/Circulating Roles
SUR 120

Surgical Seminar

Hours: Class 2, Lab 0, Credit 2
Pre-requisite: Successful completion of prior program requirements.
Co-requisite: None
Course Description:
This course includes the comprehensive correlation of theory and practice in the perioperative role.

Course Topics:
- Medical Terms
- Weights and Measures
- Microorganisms
- Infection Control
- Drugs in Surgery
- Surgical Environment
- Surgical Asepsis
- Patient Evaluation
- Wound Management
- Instrumentation/Equipment
- Surgical Counts

Required Materials:
- All surgical texts, anatomy text, notes, and related materials from previous units.

Grading System:
Students must maintain a final overall average of

Student Learning Outcomes:
Apply medical terms as they relate to surgery.
Calculate weights and measures in the metric, apothecary, and household measurement system.
Assess the characteristics of microorganisms as they relate to the surgical field.
Analyze infection control as it relates to the surgical patient.
Distinguish and assess the use of drugs used in surgery.
Analyze the surgical environment to include the operating room team, the operating room suite, occupational hazards, safety risk management, and ethical, moral, and legal issues.
Assess surgical asepsis to include decontamination and sterilization, aseptic technique, draping, the surgical scrub, and preoperative preparation.
Evaluate the care of the preoperative surgical patient.
Evaluate the care of the intraoperative and postoperative surgical patient.
Evaluate wound management to include type of wounds, wound healing, drains, catheters, wound closure materials and dressings.
Classify surgical instrumentation and equipment, analyzing their use.
Appraise the process of surgery to include counts.

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TEST 101
Tested Class

Hours:
Pre-requisite:
Co-requisite:
Course Description:
Course Topics:
Required Materials:
Grading System:
Student Learning Outcomes:

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THE 101
Introduction to Theatre

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 100, RDG 100 with grade of "C" or better.
Co-requisite: None
Course Description:

This course includes the appreciation and analysis of theatrical literature, history, and production.

Course Topics:
- Theatre and Society
- Theatre Artists and Technicians
- Production Analysis
- Comedy and Tragedy
- Dramatic Literature
Theatre History

Required Materials:
- Access to a computer with Internet access.
- Ability to format documents as .doc, .docx, .rtf, or .html

Grading System:
A 93 – 100
B 85 – 92
C 75 – 84
D 65 – 74
F 0 – 64

Student Learning Outcomes:
- Demonstrate the practical and critical skills of a well-informed theatre patron.
- Identify the artistic and technical requirements of a theatrical production.
- Analyze the basic structural patterns and stylistic elements of pieces of dramatic literature.
- Identify the major movements in theatrical history and explain how these movements reflected contemporary society.
- Analyze how the major movements in theatrical history contributed to current theatre practices.

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THE 105
Fundamentals of Acting

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: ENG 100, RDG 100 with a C or better
Co-requisite: None
Course Description:
This course includes the study of dramatic performance techniques, including improvisations and interpretation of characters.

Course Topics:
- Acting Traditions
- Relaxation Techniques
- Collaboration
- Scene Actions and Objectives
- Emotion and Character
- Performance Techniques
- Analysis of Acting Techniques

Required Materials:
- Access to a computer with Windows 2000 or newer
- Ability to format documents as .doc, .docx, .rtf, or .html
- Internet access

Grading System:
An overall grade of C or higher is required for transferability.
A 93 – 100
B 85 – 92
C 75 – 84
THE 220
Theatre Laboratory I

Hours: Class 1, Lab 0, Credit 1
Pre-requisite: None
Course Description:
This course is supervised participation in theatrical productions.

Course Topics:
- Analysis of Play Script
- Blocking
- Projection
- Memorization
- Collaboration

Required Materials:
- Access to a computer with Internet access.
- Ability to format documents as .doc, .docx, .rtf, or .html

Grading System:
A 93 – 100
B 85 – 92
C 75 – 84
D 65 – 74
F 0 – 64

Student Learning Outcomes:
- Demonstrate physical, vocal, and mental skills needed to be a successful actor on the stage.
- Demonstrate Method Acting techniques.
- Analyze characters from dramatic literature.
- Establish characters' objectives and actions for each scene.
- Demonstrate strong work ethic both as an individual and as a collaborative team member.

THE 225
Theater Production

Hours: Class 3, Lab 0, Credit 3
Pre-requisite: Take THE-101 or THE-105 or ART-111 with a minimum grade of "C".

Student Learning Outcomes:
WLD 102
Introduction to Welding

Hours: Class 1, Lab 3, Credit 2
Pre-requisite: Permission from welding department chair
Co-requisite: None
Course Description:
This course covers the principles of welding, cutting, and basic procedures for safety in using welding equipment.

Course Topics:
- Introduction to Welding
- Oxy-Acetylene Cutting Torch
- SMAW, GTAW, GMAW, FCAW Basics

Required Materials:
- Flip Front Welding Hood (#10 Lens)
- Welding Goggles (#5 Lens)
- Cotton Long Sleeve Shirt
High Top Leather Boots
10" Channel Lock Pliers
Long Welding Gloves
Cotton Welders Cap
Clear Safety Glasses
Cotton Pants without Cuffs
Tip Cleaners
Short TIG Gloves
1 1/4" Half-Round File

Grading System:
An overall grade of C or higher is required for transferability.
A 90-100
B 80-89
C 70-79
D 60-69
F 0-59

Student Learning Outcomes:
• Recognize and properly setup the Oxy-Acetylene Torch used in cutting various steels.
• Demonstrate proper setup of SMAW welding equipment and SMAW welding techniques.
• Demonstrate proper setup of GTAW welding equipment and GTAW welding techniques.
• Demonstrate proper setup of GMAW welding equipment and GMAW welding techniques.
• Demonstrate proper setup of FCAW welding equipment and FCAW welding techniques.
• Demonstrate the Oxy-Acetylene cutting process on carbon steel.

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WLD 103
Print Reading I
Hours: Class 1, Lab 0, Credit 1
Pre-requisite: None
Co-requisite: None
Course Description:
This is a basic course which includes the fundamentals of print reading, the meaning of lines, views, dimensions, notes, specifications, and structural shapes. Welding symbols and assembly drawings as used in fabrication work are also covered.

Course Topics:
• Basic Lines and Views
• Interpreting Notes, Specifications, and Dimensions
• Identifying Structural Shapes, Pipe, and Tubing
• Assemble Prints and Views

Required Materials:
• Flip Front Welding Hood (#10 Lens)
• Welding Goggles (#5 Lens)
• Cotton Long Sleeve Shirt
• High Top Leather Boots
• 10" Channel Lock Pliers
• Long Welding Gloves
• Cotton Welders Cap
• Clear Safety Glasses
• Cotton Pants without Cuffs
• Tip Cleaners
• Short TIG Gloves
• 1/4" Half-Round File
• Pencil with Eraser
• Sketching Paper
• Steel Tape or 6' Folding Ruler

Grading System:

An overall grade of C or higher is required for transferability.

A 90-100
B 80-89
C 70-79
D 60-69
F 0-59

Student Learning Outcomes:

• Read and interpret basic lines and views on your basic welding blueprints.
• Demonstrate the use and importance of sketching.
• Identify and interpret notes, specifications, and dimensions on a basic welding blueprint.
• Identify structural shapes, pipe, and tubing.
• Identify sectional, detailed, and assembly prints.

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WLD 105
Print Reading II

Hours: Class 1, Lab 0, Credit 1
Pre-requisite: WLD 103, WLD 106
Co-requisite: None

Course Description:

This course includes print reading, including welding symbols and their applications to pipe fabrication. Basic sketching of piping symbols, single line and double line pipe drawings, material estimating, template layout and how templates are used in pipe layouts are included.

Course Topics:

• Basic Welding Symbols
• Basic Joint Designs
• Types of Inspections for Weld Joints

Required Materials:

• Flip Front Welding Hood (#10 Lens)
• Welding Goggles (#5 Lens)
• Cotton Long Sleeve Shirt
• High Top Leather Boots
• 10" Channel Lock Pliers
• Long Welding Gloves
• Cotton Welders Cap
• Clear Safety Glasses
• Cotton Pants without Cuffs
• Tip Cleaners
• Short TIG Gloves
• 1/4" Half-Round File
• Pencil with Eraser
• Sketching Paper
• Steel Tape or 6' Folding Ruler

Grading System:
An overall grade of C or higher is required for transferability.
A 90-100
B 80-89
C 70-79
D 60-69
F 0-59

Student Learning Outcomes:
• Read and interpret welding symbols and general abbreviations on a basic to moderately skilled blueprint.
• Read and interpret basic joint designs pertaining to welding fabrication.
• Read and interpret your basic pipe welding symbols.
• Determine type of inspection and test for multiple welded joints as well as explaining common inspection and testing practices.
• Identify multiple types of weld depending on the symbols such as plug welds, slot welds, surfacing welds, and flange welds.
• Differentiate between preferred and non-preferred weld symbols.
• Differentiate between location and weld placement according to the basic symbols.

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WLD 106
Gas and Arc Welding

Hours: Class 2, Lab 6, Credit 4
Pre-requisite: Permission from welding department chair
Co-requisite: None
Course Description:
This course covers the basic principles and practices of oxyacetylene welding, cutting, and electric arc welding. Emphasis is placed on practice in fundamental position welding and safety procedures.

Course Topics:
• Introduction to Welding
• Oxy-Acetylene Cutting Torch
• SMAW Electrode Bead Building

Required Materials:
• Flip Front Welding Hood (#10 Lens)
• Welding Goggles (#5 Lens)
• Cotton Long Sleeve Shirt
• High Top Leather Boots
• 10" Channel Lock Pliers
• Long Welding Gloves
• Cotton Welders Cap
• Clear Safety Glasses
• Cotton Pants without Cuffs
WLD 113
Arc Welding II

Hours: Class 2, Lab 6, Credit 4
Pre-requisite: WLD 106 or permission.
Co-requisite: None

Course Description:
This course is a study of arc welding of ferrous and/or non-ferrous metals.

Course Topics:
- SMAW Multiple Pass Fillet Welds
- Horizontal, Vertical, and Overhead T-Joint Welds
- Horizontal and Vertical Socket Welds

Required Materials:
- Flip Front Welding Hood (#10 Lens)
- Welding Goggles (#5 Lens)
- Cotton Long Sleeve Shirt
- High Top Leather Boots
- 10" Channel Lock Pliers
- Long Welding Gloves
- Cotton Welders Cap
- Clear Safety Glasses
- Cotton Pants without Cuffs
- Tip Cleaners
- Short TIG Gloves
- 14" Half-Round File

Grading System:
An overall grade of C or higher is required for transferability.
A 90-100
B 80-89
C 70-79
D 60-69
F 0-59

Student Learning Outcomes:
- Demonstrate the setup and use of welding equipment in the SMAW welding process.
- Recognize and properly setup the Oxy-Acetylene Torch used in cutting various steels.
- Identify types of welding electrodes and describe their uses on various types of steel.
- Demonstrate the proper use of an Oxy-Acetylene Torch to make a proper cut on carbon steel.
- Demonstrate overlapping weld beads in the Horizontal, Vertical, and Overhead positions using an E-6010 electrode and the SMAW welding process.
- Demonstrate overlapping weld beads in the Horizontal, Vertical, and Overhead positions using an E-7018 electrode and the SMAW welding process.

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An overall grade of C or higher is required for transferability.

A 90-100
B 80-89
C 70-79
D 60-69
F 0-59

Student Learning Outcomes:

- Recognize and properly setup the welding equipment to demonstrate the SMAW welding process.
- Demonstrate a multiple pass fillet weld on
- Demonstrate a multiple pass fillet weld on
- Demonstrate a multiple pass fillet weld on
- Demonstrate a multiple pass socket weld on 2" carbon steel pipe in the 2G and 5G position to AWS standards.

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WLD 115
Arc Welding III

Hours: Class 2, Lab 6, Credit 4
Pre-requisite: WLD 113
Co-requisite: None

Course Description:

This course covers the techniques used in preparation for structural plate testing according to appropriate standards.

Course Topics:

- Oxy-Acetylene Track Torch Operation
- Hand Grinding "Land" on Beveled Plate
- SMAW Weld Beveled Plate in Horizontal, Vertical, and Overhead Positions
- Weld Open-Butt

Required Materials:

- Flip Front Welding Hood (#10 Lens)
- Welding Goggles (#5 Lens)
- Cotton Long Sleeve Shirt
- High Top Leather Boots
- 10" Channel Lock Pliers
- Long Welding Gloves
- Cotton Welders Cap
- Clear Safety Glasses
- Cotton Pants without Cuffs
- Tip Cleaners
- Short TIG Gloves
- 14" Half-Round File

Grading System:

An overall grade of C or higher is required for transferability.

A 90-100
B 80-89
C 70-79
D 60-69
F 0-59

Student Learning Outcomes:
Recognize and properly setup the welding equipment to demonstrate the SMAW welding process.

Demonstrate the SMAW process on 8" carbon steel pipe by using an E-6010 electrode to successfully demonstrate a root pass with an "open butt" fit up.

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WLD 117
Specialized Arc Welding

Hours: Class 2, Lab 6, Credit 4
Pre-requisite: WLD 115
Co-requisite: None
Course Description:
This course covers arc welding processes for industrial purposes.

Course Topics:
- Plasma Pipe Beveling Operation
- Oxy-Acetylene Hand Cut 8" Carbon steel pipe
- Hand Grinding "Land" on Beveled Pipe
- SMAW Weld Open-Butt 8" SCH 40 Carbon Steel Pipe
- Weld Pipe in 2G, 5G, and 6G Positions

Required Materials:
- Flip Front Welding Hood (#10 Lens)
- Welding Goggles (#5 Lens)
- Cotton Long Sleeve Shirt
- High Top Leather Boots
- 10" Channel Lock Pliers
- Long Welding Gloves
- Cotton Welders Cap
- Clear Safety Glasses
- Cotton Pants without Cuffs
- Tip Cleaners
- Short TIG Gloves
- 14" Half-Round File

Grading System:
An overall grade of C or higher is required for transferability.

A 90-100
B 80-89
C 70-79
D 60-69
F 0-59

Student Learning Outcomes:
- Recognize and properly setup the welding equipment to demonstrate the SMAW welding process.
- Demonstrate the SMAW process on 8" carbon steel pipe by using an E-6010 electrode to successfully demonstrate a root pass with an "open butt" fit up.
• Demonstrate a hot pass on 8" carbon steel pipe by using the E-7018 electrode to construct the proper bead.
• Demonstrate a filler pass on 8" carbon steel pipe by using the E-7018 electrode to construct the proper bead.
• Demonstrate applying the final welds on 8" carbon steel pipe by using E-7018 electrodes to properly produce a "cover pass".
• Employ all of the SMAW processes using E-6010 and E-7018 to completely weld 8" carbon steel pipe coupons in the 2G, 5G, and 6G positions to AWS standards.

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WLD 132
Inert Gas Welding Ferrous

Hours: Class 2, Lab 6, Credit 4
Pre-requisite: WLD 117
Co-requisite: None

Course Description:
This course covers set up and adjustment of equipment and fundamental techniques for welding ferrous metals.

Course Topics:
• Plasma Pipe Beveling Operation
• GTAW Introduction
• GTAW Root and Hot Pass on 8" SCH 40 Carbon Steel Pipe
• SMAW Filler and Cover Pass on 8" SCH 40 Carbon Steel Pipe
• 2G, 5G, and 6G Welding Positions

Required Materials:
• Flip Front Welding Hood (#10 Lens)
• Welding Goggles (#5 Lens)
• Cotton Long Sleeve Shirt
• High Top Leather Boots
• 10" Channel Lock Pliers
• Long Welding Gloves
• Cotton Welders Cap
• Clear Safety Glasses
• Cotton Pants without Cuffs
• Tip Cleaners
• Short TIG Gloves
• 14" Half-Round File

Grading System:
An overall grade of C or higher is required for transferability.
A 90-100
B 80-89
C 70-79
D 60-69
F 0-59

Student Learning Outcomes:
• Recognize and properly setup the welding equipment to demonstrate the GTAW welding process.
Demonstrate GTAW welding process on 8" carbon steel pipe by properly welding a root pass with an "open butt" fit up.

Demonstrate a GTAW "hot pass" on the 8" carbon steel pipe after properly and successfully demonstrating the root pass.

Demonstrate a filler pass on 8" carbon steel pipe by using the E-7018 electrode to construct the proper bead.

Demonstrate applying the final welds on 8" carbon steel pipe by using E-7018 electrodes to properly produce a "cover pass".

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WLD 136
Advanced Inert Gas Welding

Hours: Class 1, Lab 3, Credit 2
Pre-requisite: WLD 132
Co-requisite: None

Course Description:
This course covers the techniques for all positions of welding ferrous and non-ferrous metals.

Course Topics:
- Plasma Pipe Beveling Operation
- GTAW Root, Hot Pass, Fillers, and Cover Pass on 4" SCH 40 Carbon Steel Pipe
- 2G, 5G, and 6G Welding Positions

Required Materials:
- Flip Front Welding Hood (#10 Lens)
- Welding Goggles (#5 Lens)
- Cotton Long Sleeve Shirt
- High Top Leather Boots
- 10" Channel Lock Pliers
- Long Welding Gloves
- Cotton Welders Cap
- Clear Safety Glasses
- Cotton Pants without Cuffs
- Tip Cleaners
- Short TIG Gloves
- 14" Half-Round File

Grading System:
An overall grade of C or higher is required for transferability.

A 90-100
B 80-89
C 70-79
D 60-69
F 0-59

Student Learning Outcomes:
- Recognize and properly setup the welding equipment to demonstrate the GTAW welding process.
- Demonstrate GTAW welding process on 4" carbon steel pipe by properly welding a root pass with an "open butt" fit up.
Demonstrate a GTAW "hot pass" on the 8" carbon steel pipe after properly and successfully demonstrating the root pass.

Demonstrate multiple GTAW "filler passes" on the 4" carbon steel pipe after properly and successfully demonstrating the hot pass.

Perform all of the GTAW processes using ER70S to completely weld 4" carbon steel pipe coupons in the 2G, 5G, and 6G positions to AWS standards.

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WLD 154
Pipe Fitting and Welding

Hours: Class 3, Lab 3, Credit 4
Pre-requisite: None
Co-requisite: None
Course Description:
This is a basic course in fitting and welding pipe joints, either ferrous or non-ferrous, using standard processes.

Course Topics:
- Basic Pipefitting Tools
- Identify Basic Fittings
- Identify and Interpret Basic Symbols
- Fit and Weld Pipe

Required Materials:
- Flip Front Welding Hood (#10 Lens)
- Welding Goggles (#5 Lens)
- Cotton Long Sleeve Shirt
- High Top Leather Boots
- 10" Channel Lock Pliers
- Long Welding Gloves
- Cotton Welders Cap
- Clear Safety Glasses
- Cotton Pants without Cuffs
- Tip Cleaners
- Short TIG Gloves
- 14" Half-Round File
- Pencil with Eraser
- Sketching Paper
- Steel Tape or 6' Folding Ruler

Grading System:
An overall grade of C or higher is required for transferability.

A 90-100
B 80-89
C 70-79
D 60-69
F 0-59

Student Learning Outcomes:
- Identify and properly use basic pipefitting tools efficiently and safely.
- State names, types and use of basic pipe fittings.
- Identify as well as interpret the purpose of multiple pipefitting symbols and
Use pipetting formulas to calculate takeouts for fittings and for basic design and blueprints.

Make their own pipe template as well as demonstrating the use and purpose of the template.

Fit and weld pipe from the Cut, Fit, and Weld aspect in the 45 and 90 degree positions.

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WLD 208

Advanced Pipe Welding

Hours: Class 2, Lab 3, Credit 3
Pre-requisite: WLD 136
Co-requisite: None

Course Description:

This course is a study of advanced pipe welding. It also covers the processes to fit and weld ferrous and non-ferrous metals.

Course Topics:

- Introduction to 3” SCH 40 Stainless Steel Pipe
- Introduction to GMAW and FCAW
- GMAW and FCAW Welding T-Joint and Beveled Plate Materials

Required Materials:

- Flip Front Welding Hood (#10 Lens)
- Welding Goggles (#5 Lens)
- Cotton Long Sleeve Shirt
- High Top Leather Boots
- 10” Channel Lock Pliers
- Long Welding Gloves
- Cotton Welders Cap
- Clear Safety Glasses
- Cotton Pants without Cuffs
- Tip Cleaners
- Short TIG Gloves
- 14” Half-Round File

Grading System:

An overall grade of C or higher is required for transferability.

A 90-100
B 80-89
C 70-79
D 60-69
F 0-59

Student Learning Outcomes:

- Recognize and properly setup the welding equipment to demonstrate the GTAW welding process.
- Demonstrate GTAW welding process on 3” stainless steel pipe by properly welding a root pass with an “open butt” fit up with a purge process on the inside of the pipe.
Properly complete the weld process using GTAW on 3” stainless steel pipe according to AWS standards.

- Recognize and properly setup the welding equipment to demonstrate the GMAW welding process.
- Recognize and properly setup the welding equipment to demonstrate the FCAW welding process.
- Properly demonstrate the GMAW and FCAW on T-Joint materials as well as V-Groove plate.

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**WLD 212**

**Destructive Testing**

**Hours:** Class 1, Lab 3, Credit 2

**Pre-requisite:** Permission from welding department chair.

**Co-requisite:** None

**Course Description:**

This course covers the destructive testing methods used in the evaluation of welds.

**Course Topics:**

- Introduction to Basic Weld Testing
- Identification of Defects
- Guided Bend Test

**Required Materials:**

- Flip Front Welding Hood (#10 Lens)
- Welding Goggles (#5 Lens)
- Cotton Long Sleeve Shirt
- High Top Leather Boots
- 10” Channel Lock Pliers
- Long Welding Gloves
- Cotton Welders Cap
- Clear Safety Glasses
- Cotton Pants without Cuffs
- Tip Cleaners
- Short TIG Gloves
- 14” Half-Round File

**Grading System:**

An overall grade of C or higher is required for transferability.

- A 90-100
- B 80-89
- C 70-79
- D 60-69
- F 0-59

**Student Learning Outcomes:**

- Demonstrate procedure for a proper weld test coupon to be completely welded and be able to successfully pass a bend test on the material.
- Cut four marked specimens from the test coupon using the Oxy-Acetylene torch.
- Prepare the selected material to be able to properly preform the bend test.
- Identify Undercut and Overlapping on the weld test coupons upon completion of a
• Identify Porosity as well as Cracks on the weld test coupons upon completion of a weld test.

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