ACAP 1000 Introduction to Dealer Systems (Prerequisite: Provisional Admission) This course introduces basic concepts and practices necessary for safe and effective automotive dealer operations. Topics include: safety procedures; legal/ethical responsibilities; general service; hand tools; shop organization, management, and work flow systems. Included is an introduction to Mopar Web Based courses and completing required courses for basic certification in Mopar training. Contact hours: Class - 1, Lab - 2. Credit hours: 2. (F)

ACAP 1010 Engine Systems (Prerequisite: Provisional Admission; Prerequisite/Corequisite: ACAP 1000) This course introduces the student to Mopar engine theory and repair, placing emphasis on inspection, testing, and diagnostic techniques for internal combustion engines. Topics include general engine diagnosis; removal and reinstallation; cylinder heads and valve trains diagnosis and repair; engine blocks assembly diagnosis and repair; lubrication and cooling systems diagnosis and repair. Contact hours: Class - 2, Lab - 4. Credit hours: 4. (F)

ACAP 1020 Automatic Transmissions (Prerequisite: Provisional Admission; Prerequisite/Corequisite: ACAP 1000) Introduces students to basic automatic transmission/transaxle theory, operation, inspection, service, and repair procedures as well as electronic diagnosis and repair of Mopar transmissions. Topics include: Mopar rear wheel drive automatic transmission and transaxle diagnosis; in vehicle and off vehicle transmission and transaxle maintenance, adjustment and repair. Contact hours: Class - 2, Lab - 4. Credit hours: 4. (Sp)

ACAP 1030 Drive Trains (Prerequisite: Provisional Admission; Prerequisite/Corequisite: ACAP 1000) This course introduces basics of Mopar manual rear-wheel drive, front-wheel drive, and four-wheel drive driveline related operation, diagnosis, service and related electronic controls. Topics include: drive shafts and half shafts, universal and constant-velocity (CV) joint diagnosis and repair; ring and pinion gears and differential case assemblies; limited slip differentials; drive axle shafts; four-wheel drive/all-wheel drive component diagnosis and repair. This course also introduces repair of manual front and rear-wheel drive transmissions. Electronic controls related to transmission/transaxles operation are discussed. Contact hours: Class - 2, Lab - 4. Credit hours: 4. (Sp)

ACAP 1040 Steering and Suspension (Prerequisite: Provisional Admission; Prerequisite/Corequisite: ACAP 1000) This course introduces students to principles of Mopar steering, suspension, wheel alignment, electronic steering, and electronic active suspension. Topics include: general suspension and steering systems diagnosis; steering systems diagnosis and repair; suspension systems diagnosis and repair; related suspension and steering service; wheel alignment diagnosis, adjustment and repair, wheel and tire diagnosis and repair. Contact hours: Class - 1, Lab - 4. Credit hours: 3. (Sp)

ACAP 1050 Brakes (Prerequisite: Provisional Admission; Prerequisite/Corequisite: ACAP 1000) This course introduces brake systems theory and its application to automotive systems and anti-lock brake system (ABS) to include ABS components and ABS operation, testing, and diagnosis. Topics include: hydraulic system diagnosis and repair; drum brake diagnosis and repair; disc brake diagnosis and repair; power assist units diagnosis and repair; miscellaneous brake components (wheel bearings, parking brakes, electrical, etc.) diagnosis and repair; test, diagnose, and service electronic brake control system. Contact hours: Class - 2, Lab - 4. Credit hours: 4. (Sp)

ACAP 1060 Electrical Systems (Prerequisite: Provisional Admission; Prerequisite/Corequisite: ACAP 1000) This course introduces automotive electricity, emphasizes the basic principles, diagnosis, and service/repair of batteries, starting systems, starting system components, alternators and regulators, lighting system, gauges, horn, wiper/washer, and accessories. Contact hours: Class - 2, Lab - 6. Credit hours: 5. (F)

ACAP 1070 HVAC Systems (Prerequisite: Provisional Admission; Prerequisite/Corequisite: ACAP 1000) This course introduces the theory and operation of Mopar heating and air conditioning systems. Students attain proficiency in inspection, testing, service, and repair of heating and air conditioning systems and related components. Topics include: a/c system diagnosis and repair; refrigeration system component diagnosis and repair; heating, ventilation, and engine cooling systems diagnosis and repair; operating systems and related controls diagnosis and repair; refrigerant recovery, recycling, and handling. Contact hours: Class - 2, Lab - 2. Credit hours: 3. (Sp)

ACAP 1080 Engine Performance (Prerequisite: Provisional Admission; Prerequisite/Corequisite: ACAP 1000) This course introduces Mopar engine performance systems utilizing NGC and GPEC controllers.
OBD II engine management systems are covered, as well as speed density fuel injection. Topics include: general engine diagnosis, computerized engine controls and diagnosis, ignition system diagnosis and repair, fuel and air induction, exhaust systems, emission control systems diagnosis and repair, and other related engine service. Contact hours: Class - 2, Lab - 6. Credit hours: 5. (F)

**ACAP 2010 Internship I** (Prerequisite: Provisional Admission; Prerequisite/Corequisite: ACAP 1000) This course will provide the student with an opportunity to relate what they have learned in the classroom and lab to a real world situation either at a place of business or at a technical college. Under the supervision of an experienced ASE certified automotive technician or their instructor, the student will obtain a greater admiration and appreciation of the material learned in the classroom and lab. The internship will also serve the function of bridging the lessons learned at school and applying that to real world situations. The suitability of the work setting will be determined by having a conference with the automotive instructor and the prospective employer. The student will have the option to take the internship program at an approved place of employment or at the college if he or she wishes and perform all the live work duties of the service writer, parts department personnel, and technician to include writing the repair order, ordering parts (if applicable) and repairing the vehicle. Student must work a minimum of 37.5 hours during the semester to receive credit for this course. Contact hours: Class - 0, Lab - 9. Credit hours: 3. (Sp)

**ACAP 2020 Internship II** (Prerequisite/Corequisite: ACAP 2010) This course will provide the student with an opportunity to relate what they have learned in the classroom and lab to a real world situation either at a place of business or at a technical college. Under the supervision of an experienced ASE certified automotive technician or their instructor, the student will obtain a greater admiration and appreciation of the material learned in the classroom and lab. The internship will also serve the function of bridging the lessons learned at school and applying that to real world situations. The suitability of the work setting will be determined by having a conference with the automotive instructor and the prospective employer. The student will have the option to take the internship program at an approved place of employment or at the college if he or she wishes and perform all the live work duties of the service writer, parts department personnel, and technician to include writing the repair order, ordering parts (if applicable) and repairing the vehicle. Student must work a minimum of 37.5 hours during the semester to receive credit for this course. Contact hours: Class - 0, Lab - 9. Credit hours: 3. (Su)

**ACAP 2040 Internship IV** (Prerequisite/Corequisite: ACAP 2030) This course will provide the student with an opportunity to relate what they have learned in the classroom and lab to a real world situation either at a place of business or at a technical college. Under the supervision of an experienced ASE certified automotive technician or their instructor, the student will obtain a greater admiration and appreciation of the material learned in the classroom and lab. The internship will also serve the function of bridging the lessons learned at school and applying that to real world situations. The suitability of the work setting will be determined by having a conference with the automotive instructor and the prospective employer. The student will have the option to take the internship program at an approved place of employment or at the college if he or she wishes and perform all the live work duties of the service writer, parts department personnel, and technician to include writing the repair order, ordering parts (if applicable) and repairing the vehicle. Student must work a minimum of 112.5 hours during the semester to receive credit for this course. Contact hours: Class - 0, Lab - 9. Credit hours: 3. (Su)

**ACCT 1100 Financial Accounting I** (Prerequisite: Diploma level proficiency in English, reading and math) Introduces the basic financial accounting concepts of the complete accounting cycle and provides the student with the necessary skills to maintain a set of books for a sole proprietorship. Topics include: accounting vocabulary and concepts, the accounting cycle for a merchandising business, inventory, cash control and receivables. Laboratory work demonstrates theory presented in class. Contact hours: Class - 3, Lab - 2. Credit hours: 4. (E)

**ACCT 1105 Financial Accounting II** (Prerequisite: ACCT 1100) Introduces the intermediate financial accounting concepts that provide the student with the necessary skills to maintain a set of books for a partnership and corporation. Topics include: Fixed and
Intangible Assets, Current and Long-Term Liabilities (Notes Payable), Payroll, Accounting for a Partnership, Accounting for a Corporation, Statement of Cash Flows, and Financial Statement Analysis, Laboratory work demonstrates theory presented in class. Contact hours: Class - 3, Lab – 2. Credit hours: 4. (E)

**ACCT 1115 Computerized Accounting** (Prerequisite: ACCT 1100; FYES 1000) Emphasizes operation of computerized accounting systems from manual input forms. Topics include: company creation (service and merchandising), chart of accounts, customers transactions, vendors transactions, banking activities, merchandise inventory, employees and payroll, and financial reports. Laboratory work includes theoretical and technical application. Contact hours: Class - 1, Lab - 4. Credit hours: 3. (E)

**ACCT 1120 Spreadsheet Applications** (Prerequisites: ACCT 1100, FYES 1000; Corequisite: ACCT 1105) This course covers the knowledge and skills to use spreadsheet software through course demonstrations, laboratory exercises and projects. Topics and assignments will include: spreadsheet concepts, creating and manipulating data, formatting data and content, creating and modifying formulas, presenting data visually and collaborating and securing data. Contact hours: Class - 2, Lab - 4. Credit hours: 4. (E)

**ACCT 1125 Individual Tax Accounting** (Prerequisite: Diploma level proficiency in English, reading and math) Provides instruction for the preparation of individual federal income tax returns. Topics include: taxable income, income adjustments, schedules, standard deductions, itemized deductions, exemptions, tax credits, and tax calculations. Contact hours: Class - 2, Lab - 2. Credit hours: 3. (E)

**ACCT 1130 Payroll Accounting** (Prerequisites: ACCT 1100; Prerequisite/Corequisite: ACCT 1115) Provides an understanding of the laws that affect a company’s payroll structure and practical application skills in maintaining payroll records. Topics include: payroll tax laws, payroll tax forms, payroll and personnel records, computing wages and salaries, taxes affecting employees and employers, and analyzing and journalizing payroll transactions. Contact hours: Class - 2, Lab - 2. Credit hours: 3. (E)

**ACCT 2000 Managerial Accounting** (Prerequisite: ACCT 1105) Emphasizes the interpretation of data by management in planning and controlling business activities. Topics include Managerial Accounting Concepts, Manufacturing Accounting using a Job Order Cost System, Manufacturing Accounting using a Process Cost System, Cost Behavior and Cost-Volume-Profit, Budgeting and Standard Cost Accounting, Flexible Budgets, Standard Costs and Variances, and Capital Investment Analysis and Budgeting. Laboratory work demonstrates theory presented in class. Contact hours: Class - 2, Lab - 2. Credit hours: 3. (E)

**ACCT 2100 Accounting Internship I** (Prerequisite: ACCT 1130, ACCT 2120, ACCT 2130, ACCT 2000) Introduces the application and reinforcement of accounting and employability principles in an actual job setting. Acquaints the student with realistic work situations and provides insights into accounting applications on the job. Topics include appropriate work habits, acceptable job performance, application of accounting knowledge and skills, interpersonal relations, and development of productivity. The half-time accounting internship is implemented through the use of written individualized training plans, written performance evaluation, and weekly documentation or seminars and/or other projects as required by the instructor. Contact hours: Class - 0, Lab - 12. Credit hours: 4. (T)

**ACCT 2110 Accounting Simulation** (Prerequisite: ACCT 1115) Students assume the role of a business owner where he/she can directly experience the impact and importance of accounting in a business. At the end of the simulation course, the student will have completed the entire accounting cycle for a service business, merchandising business and a corporation using an Accounting Information System software (different from software used in ACCT 1115-Computerized Accounting). Emphasis placed on providing students with real-world opportunities for the application and demonstration of accounting skills by using Simulation Projects will enable them to build a foundation for understanding and interpreting financial statements. Topics include company creation, chart of accounts, customers transactions, vendors transactions, banking activities, merchandise inventory, employees and payroll, financial statements, preparation of payroll tax forms and preparation of income tax forms. Laboratory work includes theoretical and technical application. Contact hours: Class - 1, Lab - 4. Credit hours: 3. (E)

**ACCT 2120 Business Tax Accounting** (Prerequisite: Diploma level proficiency in English, reading and math; ACCT 1100, and ACCT 1125) Provides instruction for preparation of both state and federal partnership, corporation and other business tax returns. Topics include: organization form, overview of taxation of partnership, special partnership issues, corporate tax elections, adjustments to income and expenses, tax elections, forms and schedules, tax credits, reconciliation of book and tax income, tax depreciation methods, and tax calculations. Contact hours: Class - 2, Lab - 2. Credit hours: 3. (E)

**ACCT 2130 Integrated Accounting Management Systems** (Prerequisites: ACCT 1105, ACCT 1115, and ACCT 1120) Emphasizes use of database management packages, electronic spreadsheet packages, and accounting software packages for accounting/financial applications with more advanced systems. Topics include: creation and management of database applications, creation and management of spreadsheet applications, and creation and management of accounting integrated software systems. Contact hours: Class - 2, Lab - 2. Credit hours: 3. (T)
ACCT 2145 Personal Finance (Prerequisite: Diploma level proficiency in English, reading and math) Introduces practical applications of concepts and techniques used to manage personal finance. Topics include: cash management, time value of money, credit, major purchasing decisions, insurance, investments, retirement, and estate planning. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (E)

ACCT 2155 Principles of Fraud Examination (Prerequisites: Diploma level proficiency in English, reading and math; Corequisite: ACCT 1105) Students will learn the basic principles and theories of occupational fraud. The student will learn how opportunity, pressure, and rationalization link together to create the necessary elements present when fraudulent acts are committed. Fraudulent behavior can be prevented and/ or detected through a variety of ways that the student will learn. There will be videos and short case studies, made available by the Association of Certified Fraud Examiners (ACFE). Topics include: fraud concepts, skimming, cash larceny, billing schemes, check tampering, payroll schemes, expense reimbursement schemes, register disbursement schemes, non-cash assets fraud, corruption schemes, and accounting principles and fraud. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (T)

AIRC 1005 Refrigeration Fundamentals (Prerequisite: Provisional Admission) Introduces the basic concepts, theories, and safety regulations and procedures of refrigeration. Topics include an introduction to OSHA, safety, first aid, laws of thermodynamics, pressure and temperature relationships, heat transfer, the refrigerant cycle, refrigerant identification, and types of AC systems. Contact hours: Class - 3, Lab - 3. Credit hours: 4. (T)

AIRC 1010 Refrigeration Principles and Practices (Prerequisite/Corequisite: AIRC 1005) This course introduces the student to basic refrigeration system principles and practices, and the major component parts of the refrigeration system. Topics include refrigeration tools, piping practices, service valves, leak testing, refrigerant recovery, recycling, and reclamation, evacuation, charging, and safety. Contact hours: Class - 3, Lab - 3. Credit hours: 4. (T)

AIRC 1020 Refrigeration Systems Components (Prerequisite/Corequisites: AIRC 1005, AIRC 1010) This course provides the student with the skills and knowledge and skills to install, test, and service major components of a refrigeration system. Topics include compressors, condensers, evaporators, metering devices, service procedures, refrigeration systems and safety. Contact hours: Class - 3, Lab – 3. Credit hours: 4. (T)

AIRC 1030 HVACR Electrical Fundamentals (Prerequisite: Provisional Admission) This course provides an introduction to fundamental electrical concepts and theories as applied to the air conditioning industry. Topics include AC and DC theory, electric meters, electrical diagrams, distribution systems, electrical panels, voltage circuits, code requirements, and safety. Contact hours: Class 3, Lab - 3. Credit hours: 4. (T)

AIRC 1040 HVACR Electric Motors (Prerequisite/ Corequisite: AIRC 1030) This course provides the student with the skills and knowledge necessary for application and service of electric motors commonly used by the refrigeration and air conditioning industry. Topics include diagnostic techniques, capacitors, installation procedures, types of electric motors, electric motor service, and safety. Contact hours: Class - 3, Lab - 3. Credit hours: 4. (T)

AIRC 1050 HVACR Electrical Components and Controls (Prerequisite/Corequisite: AIRC 1030) Provides instruction in identifying, installing, and testing commonly used electrical components in an air conditioning system. Topics include: pressure switches, transformers, other commonly used controls, diagnostic techniques, installation procedures, solid state controls, and safety. Contact hours: Class - 3, Lab - 3. Credit hours: 4. (T)

AIRC 1060 Air Conditioning Systems Application and Installation (Prerequisite/Corequisites: AIRC 1050) Provides instruction on the installation and service of residential air conditioning systems. Topics include: installation procedures, split-systems, add-on systems, packaged systems, system wiring, control circuits, and safety. Contact hours: Class - 3, Lab - 3. Credit hours: 4. (T)

AIRC 1070 Gas Heat (Prerequisite/Corequisite: AIRC 1050) This course introduces principles of combustion and service requirements for gas heating systems. Topics include servicing procedures, electrical controls, piping, gas valves, venting, code requirements, principles of combustion, and safety. Contact hours: Class - 3, Lab - 3. Credit hours: 4. (T)

AIRC 1080 Heat Pumps and Related Systems (Prerequisite: AIRC 1010, AIRC 1030, AIRC 1040; Prerequisite/Corequisite: AIRC 1050) This course provides instruction on the principles, applications, and operation of a residential heat pump system. Topics include installation and servicing procedures, electrical components, geothermal ground source energy supplies, dual fuel, valves, and troubleshooting techniques. Contact hours: Class - 3, Lab - 3. Credit hours: 4. (T)

AIRC 1090 Troubleshooting Air Conditioning Systems (Prerequisite: AIRC 1010, AIRC 1040; Prerequisite/Corequisite: AIRC 1050) This course provides instruction on the troubleshooting and repair of major components of a residential air conditioning system. Topics include troubleshooting techniques, electrical controls, air flow, the refrigeration cycle, electrical servicing procedures, and safety. Contact hours: Class - 3, Lab - 3. Credit hours: 4. (T)

AIRC 2005 - Design and Application of Light Commercial Air Conditioning (Prerequisite/ Corequisite: AIRC 1090) Continues in-depth instruction
on components and functions of air conditioning systems with emphasis on design and application of light commercial air conditioning systems. Topics include: refrigeration piping, hydronic piping, pump sizing, commercial load design, air flow, codes, and safety. Contact hours: Class – 3, Lab – 3. Credit hours: 4. (T)

**AIRC 2010 - Light Commercial Air Conditioning Control Systems** *(Prerequisite/Corequisite: AIRC 1090)* Emphasizes the study of complex control systems on light commercial air conditioning systems. Topics include: pneumatic controls, electronic controls, electrical controls, mechanical controls, and safety. Contact hours: Class – 3, Lab – 3. Credit hours: 4. (T)

**AIRC 2020 - Light Commercial Air Conditioning Systems Operation** *(Prerequisite/Corequisite: AIRC 1090)* Provides in-depth study of the operation of light commercial air conditioning systems. Topics include: boiler operations, refrigeration components, energy management, codes, and safety. Contact hours: Class – 3, Lab – 3. Credit hours: 4. (T)

**AIRC 2040 Residential Systems Designs** *(Prerequisite/Corequisite: AIRC 1090)* Presents advanced refrigeration and electrical skills and theories. Topics include: heat gain and heat loss, duct design, zone control, equipment selection, and safety. Contact hours: Class – 3, Lab – 3. Credit hours: 4. (T)

**AIRC 2050 Georgia State and Local Residential Air Conditioning Codes** *(Prerequisite/Corequisite: AIRC 1090)* Presents advanced level residential air conditioning code concepts and theories. Topics include: local residential air conditioning codes, state residential air conditioning codes, gas piping, refrigeration piping, and safety. Contact hours: Class – 3, Lab – 3. Credit hours: 4. (T)

**AIRC 2060 Distribution Systems for Residential Air Conditioning** *(Prerequisite/Corequisite: AIRC 1090)* Continues development of air systems concepts, theories, and skills. Emphasis will be placed on test and balance techniques and fan laws. Topics include: test and balance techniques, fan laws, and safety. Contact hours: Class – 3, Lab – 3. Credit hours: 4. (T)

**ALHS 1011 Structure and Function of the Human Body** *(Prerequisite: Health related students only; Diploma level proficiency in English, reading and math)* Focuses on basic normal structure and function of the human body. Topics include general plan and function of the human body, integumentary system, skeletal system, muscular system, nervous and sensory systems, endocrine system, cardiovascular system, lymphatic system, respiratory system, digestive system, urinai system, and reproductive system. Contact hours: Class - 5, Lab - 0. Credit hours: 5. (E)

**ALHS 1040 Introduction to Health Care** *(Prerequisite: Health related students only. Diploma level proficiency in English, reading and math)* Introduces a grouping of fundamental principles, practices, and issues common in the health care profession. In addition to the essential skills, students explore various delivery systems and related issues. Topics include: basic life support/CPR, basic emergency care/first aid and triage, vital signs, infection control/blood and air-borne pathogens. Contact hours: Class - 2, Lab - 3. Credit hours: 3. (T)

**ALHS 1060 Diet & Nutrition for Allied Health Sciences** *(Prerequisite: Diploma level proficiency in English and reading)* A study of the nutritional needs of the individual. Topics include: nutrients, standard and modified diets, nutrition throughout the lifespan, and client education. Contact hours: Class - 2, Lab - 0. Credit hours: 2. (T)

**ALHS 1070 Therapeutic Nutrition** *(Prerequisite: ALHS 1060)* This course is a continuation of the study of the nutritional needs of the individual begun in ALHS 1060. Topics include: nutrients, food sources, the role of nutrition plays in the maintenance of health for the individual, menu planning, diet therapy components, and the use of appropriate diets to treat certain pathologic conditions such as eating disorders, cardiac disease, diabetes mellitus, gastrointestinal disorders, renal disease, cancer, AIDS, surgical and burn clients, elderly clients, and those clients receiving enteral and parenteral nutrition. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (T)

**ALHS 1090 Medical Terminology for Allied Health Sciences** *(Prerequisite: Health related students only; Diploma level proficiency in reading, English and math)* Introduces the elements of medical terminology. Emphasis is placed on building familiarity with medical words through knowledge of roots, prefixes, and suffixes. Topics include: origins (roots, prefixes, and suffixes), word building, abbreviations and symbols, and terminology related to the human anatomy. Contact hours: Class - 2, Lab - 0. Credit hours: 2. (E)

**ALHS 1126 Health Science Physics** *(Prerequisite: Health related students only; Diploma level proficiency in English, reading and math)* Focuses on basic normal structure and function of the human body. Topics include general plan and function of the human body, integumentary system, skeletal system, muscular system, nervous and sensory systems, endocrine system, cardiovascular system, lymphatic system, respiratory system, digestive system, urinary system, and reproductive system. Contact hours: Class - 3, Lab - 2. Credit hours: 4. (T)

**ALHS 1140 Health Care Communication** *(Prerequisite: Health related students only; Diploma level proficiency in English, reading and math)* Effective communication skills are essential for all health care workers. This course aims to improve understanding of the ways in which people communicate and relate to each other in various health care settings. It also seeks to promote more effective communication and relationships among health care workers, patients, and other health team members. Course content is designed for front line workers in any health care
profession or setting. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (T)

ALHS 1180 Cultural Diversity and Healthcare
(Prerequisite: Program Admission; Diploma level proficiency in English and reading) The course is designed to examine culture beliefs, values and attitudes influencing health care delivery systems. The concept of culture competency and its components are explored and strategies for appropriate intervention are provided. Models for culturally competent care are presented. Course content is designed for front line workers in any health care profession. Topics include cultural diversity and cultural competence. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (T)

ALHS 1550 Pharmacology for Health Care
(Prerequisite: ALHS 1011 or BIOL 2113, BIOL 2113L, BIOL 2114 and BIOL 2114L) Introduces the student to the subject of drugs, their classifications, indications, side effects, and interactions. Physiology and chemistry are reviewed to help conceptualize what is important about each group of drugs. Drug regulations, references, legal issues, and safety will be discussed. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (T)

ARTS 1101 Art Appreciation
(Prerequisite: ENGL 1101) Explores the visual arts and the relationship to human needs and aspirations. Students investigate the value of art, themes in art, the elements and principles of composition, and the materials and processes used for artistic expression. Well-known works of visual art are explored. Students are required to participate in observation and evaluation beyond the classroom and the internet. (Associate degree level course) Contact hours: Class - 3, Lab - 0. Credit hours: 3. (E)

AUTT 1010 Automotive Technology Introduction
(Prerequisite: Diploma level proficiency math) Introduces basic concepts and practices necessary for safe and effective automotive shop operations. Topics include: safety procedures; legal/ethical responsibilities; general service; hand tools; shop organization, management, and work flow systems. Contact hours: Class - 1, Lab - 2. Credit hours: 2. (T)

AUTT 1020 Automotive Electrical Systems
(Prerequisite: AU TT 1010) Introduces automotive electricity, emphasizes the basic principles, diagnosis, and service/repair of batteries, starting systems, starting system components, alternators and regulators, lighting system, gauges, horn, wiper/washer, and accessories. Contact hours: Class - 2, Lab - 14. Credit hours: 7. (T)

AUTT 1021 Automotive Electrical Systems I
(Prerequisite: AU TT 1010) Introduces automotive electricity, emphasizes the basic principles, diagnosis, and service/repair of batteries, starting systems, starting system components, and basic lighting systems. Contact hours: Class – 1.13, Lab – 8.03. Credit hours: 4. (T)

AUTT 1022 Automotive Electrical Systems II
(Prerequisite: AU TT 1010) Emphasizes the basic principles, diagnosis, and service/repair of alternators and regulators, advanced lighting systems, gauges, horn, wiper/washer, and accessories. Contact hours: Class - .87, Lab - 6. Credit hours: 3. (T)

AUTT 1030 Automotive Brake Systems
(Prerequisite/Corequisite: AU TT 1010) Introduces brake systems theory and its application to automotive systems and anti-lock brake system (ABS) to include ABS components and ABS operation, testing, and diagnosis. Topics include: hydraulic system diagnosis and repair; drum brake diagnosis and repair; disc brake diagnosis and repair; power assist units diagnosis and repair; miscellaneous brake components (wheel bearings, parking brakes, electrical, etc.) diagnosis and repair; test, diagnose, and service electronic brake control system. Contact hours: Class - 2, Lab - 5. Credit hours: 4. (T)

AUTT 1040 Automotive Engine Performance
(Prerequisite: AU TT 1010, AU TT 1020) Introduces basic engine performance systems which support and control four stroke gasoline engine operations and reduce emissions. Topics include: general engine diagnosis, computerized engine controls and diagnosis, ignition system diagnosis and repair, fuel and air induction, exhaust systems, emission control systems diagnosis and repair, and other related engine service. Contact hours: Class - 2, Lab – 13.33. Credit hours: 7. (T)

AUTT 1041 Automotive Engine Performance I
(Prerequisite: AU TT 1010, AU TT 1020) Introduces basic engine performance systems which support and control four stroke gasoline engine operations and reduce emissions. Topics include: general engine diagnosis, fuel and air induction, exhaust systems, PCV control system diagnosis and repair, and other related engine service. Contact hours: Class - .87, Lab – 5.8. Credit hours: 3. (T)

AUTT 1042 Automotive Engine Performance II
(Prerequisite: AU TT 1010, AU TT 1020, AU TT 1022) Continues basic engine performance systems which support and control four stroke gasoline engine operations and reduce emissions. Topics include: computerized engine controls and diagnosis, ignition system diagnosis and repair, and advanced emission control systems diagnosis and repair. Contact hours: Class – 1.13, Lab – 7.53. Credit hours: 4. (T)

AUTT 1050 Automotive Suspension and Steering Systems
(Prerequisite/Corequisite: AU TT 1010) Introduces students to principles of steering, suspension, wheel alignment, electronic steering, and electronic active suspension. Topics include: general suspension and steering systems diagnosis; steering systems diagnosis and repair; suspension systems diagnosis and repair; related suspension and steering service; wheel alignment diagnosis, adjustment and repair, wheel and tire diagnosis and repair. Contact hours: Class - 1, Lab – 7.33. Credit hours: 4. (T)
AUTT 1060 Automotive Climate Control Systems  
(Prerequisite: AUTT 1010, AUTT 1020) Introduces the theory and operation of automotive heating and air conditioning systems. Students attain proficiency in inspection, testing, service, and repair of heating and air conditioning systems and related components. Topics include: a/c system diagnosis and repair; refrigeration system component diagnosis and repair; heating, ventilation, and engine cooling systems diagnosis and repair; operating systems and related controls diagnosis and repair; refrigerant recovery, recycling, and handling. Contact hours: Class – 3.33, Lab - 4. Credit hours: 5. (T)

AUTT 1070 Automotive Technology Internship  
(Prerequisite: AUTT 1010, AUTT 1020, AUTT 1030) This course will provide the student with an opportunity to relate what they have learned in the classroom and lab to a real world situation. Student must work a minimum of 150 hours during the semester to receive credit for this course. Contact hours: Class - 0, Lab - 12. Credit hours: 4. (T)

AUTT 2010 Automotive Engine Repair  
(Prerequisite/Corequisite: AUTT 1010) This course introduces the student to automotive engine theory and repair, placing emphasis on inspection, testing, and diagnostic techniques for both 2 cycle and 4 cycle internal combustion engines. Topics include general engine diagnosis; removal and reinstallation; cylinder heads and valve trains diagnosis and repair; engine blocks assembly diagnosis and repair; lubrication and cooling systems diagnosis and repair. Contact hours: Class - 2, Lab – 9.67 Credit hours: 6. (T)

AUTT 2011 Automotive Engine Repair I  
(Corequisite: AUTT 1010) This course introduces the student to automotive engine theory and repair, placing emphasis on inspection, testing, and diagnostic techniques for both 2 cycle and 4 cycle internal combustion engines. Topics include general engine diagnosis; removal and reinstallation; basic cylinder heads and valve trains diagnosis and repair; and lubrication and cooling systems diagnosis and repair. Contact hours: Class - 1, Lab – 5 Credit hours: 3. (T)

AUTT 2012 Automotive Engine Repair II  
(Corequisite: AUTT 1010, AUTT 2011) This course continues automotive engine theory and repair, placing emphasis on inspection, testing, and diagnostic techniques for both 2 cycle and 4 cycle internal combustion engines. Topics include advanced cylinder heads and valve trains diagnosis and repair; and engine blocks assembly, diagnosis and repair. Contact hours: Class - 1, Lab – 4.67 Credit hours: 3. (T)

AUTT 2020 Automotive Manual Drive Train and Axles  
(Prerequisite: AUTT 1010) This course introduces basics of rear-wheel drive, front-wheel drive, and four-wheel drive line related operation, diagnosis, service and related electronic controls. Topics include: drive shaft and half shaft, universal and constant-velocity (CV) joint diagnosis and repair; ring and pinion gears and differential case assembly; limited slip differential; drive axle shaft; four-wheel drive/all-wheel drive component diagnosis and repair. Introduces the basics of front and rear-wheel drive vehicles. Clutch operation, diagnosis and service is included. Electronic controls related to transmission/transaxles operation are discussed. Topics include: clutch diagnosis and repair; transmission/transaxles diagnosis and repair. Contact hours: Class – 2.12, Lab – 4.61. Credit hours: 4. (T)

AUTT 2030 Automotive Automatic Transmissions and Transaxles  
(Prerequisite: AUTT 1010, AUTT 1020) Introduces students to basic automatic transmission/transaxle theory, operation, inspection, service, and repair procedures as well as electronic diagnosis and repair. Topics include: general automatic transmission and transaxle diagnosis; in vehicle and off vehicle transmission and transaxle maintenance, adjustment and repair. Contact hours: Class - 2, Lab - 7. Credit hours: 5. (T)

BAFN 1110 Money and Banking  
(Prerequisite: Diploma level proficiency in English, reading and math)  
The course emphasizes the relevance of monetary instruments, financial intermediaries, and the central banks as they impact local, state, national, and international economics. Topics include: the history and evolution of financial institutions, monetary instruments and flow; and central banking, operations, and policies. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (E)

BAFN 2200 Finance  
(Prerequisite: ACCT 1100, Diploma level proficiency in English, reading and math)  
Provides an introduction to financial markets, institutions, and management in contemporary society. Emphasis is placed on developing an understanding of the financial markets in which funds are traded, the financial institutions participating in facilitating the trade of such funds, and the financial principles and concepts behind sound financial management. Topics include: financial systems of the United States, business finance management, and financing other sectors of the economy. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (E)

BAFN 2215 Investments  
(Prerequisite: ACCT 1100, Diploma level proficiency in English, reading and math)  
Introduces the student to the fundamentals concepts of personal investment planning, personal investments, the various financial investments available for use, and their relative applicability. Emphasis is placed on developing a full understanding of the types of investments available to individuals, how these investments can be used and how to evaluate their performance. Topics include: stocks, bonds, mutual funds, retirement planning, retirement plans and investment advisors. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (E)

BARB 1000 Introduction to Barber/Styling Implements  
(Prerequisite: Program Admission; Diploma level proficiency in English, reading and math)
Introduction to Barber/Styling Implements is designed to give an overview of the barbering profession. Students are also taught the fundamentals of each barber/styling implement. Emphasis will be placed on the maintenance and care of each implement. Topics include: Barbering history, personality development, professional barbering ethics, and professional barbering image, safety, and reception and telephone techniques, nomenclature, types and sizes, proper use and care, and maintenance. Contact hours: Class - 1, Lab - 5. Credit hours: 3. (Sp)

**BARB 1010 Science: Sterilization, Sanitation, and Bacteriology** (Prerequisite: Diploma level proficiency in English, reading and math) Introduces fundamental theories and practices of bacteriology, sterilization, sanitation, safety, and the welfare of the barber/stylist and patron. Topics include: sterilization, sanitation, safety, bacteriology, and Hazardous Duty Standards Act compliance. Contact hours: Class - 2, Lab - 3. Credit hours: 3. (Sp)

**BARB 1020 Introduction to Haircutting and Shampooing** (Prerequisite: Diploma level proficiency in English, reading and math) Introduces the theory and skills necessary to apply basic haircutting techniques. Safe use of haircutting implements will be stressed. Also introduces the fundamental theory and skills required to shampoo hair. Laboratory training includes shampooing a live model. Topics include: preparation of patron, haircutting terminology, safety and sanitation, implements, and basic haircutting techniques, shampoo chemistry, patron preparation, and shampoo procedures. Contact hours: Class - 3, Lab - 6. Credit hours: 5. (Sp)

**BARB 1030 Haircutting/Basic Styling** (Prerequisite: BARB 1000, BARB 1020) Continues the theory and application of haircutting techniques and introduces hairstyling. Topics include: preparation of patron, preparation of hair, analysis of hair growth, style cutting, and implements for style cutting and tapering techniques. Contact hours: Class - 1, Lab - 6. Credit hours: 3. (Su)

**BARB 1040 Shaving** (Prerequisite: BARB 1000) Introduces the theory and skills necessary to prepare and shave a patron. Simulated shaving procedures will precede practice on live models. Topics include: patron preparation, beard preparation, shaving techniques, once-over shave techniques, and safety precautions. Contact hours: Class - 1, Lab - 3. Credit hours: 2. (Su)

**BARB 1050 Science: Anatomy & Physiology** (Prerequisite: BARB 1000) Develops knowledge of the function and care of the scalp, skin, and hair. Emphasis is placed on the function, health, and growth of these areas. Topics include: cells, skeletal system, muscular system, nervous system, circulatory system, and related systems. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (Su)

**BARB 1060 Introduction to Color Theory/color Application** (Prerequisite: BARB 1000) Introduces the fundamental theory of color, predispositions tests, color selection, and color application. Presents the application of temporary, semi-permanent, and permanent hair coloring products. Topics include: basic color concepts, skin reactions, the color wheel, color selection and application, mustache and beards, coloring products, safety precautions and tests, mixing procedures, color selection and application. Contact hours: Class - 1, Lab - 5. Credit hours: 3. (F)

**BARB 1070 Chemical Restructuring of Hair** (Prerequisite: BARB 1000) Introduces the chemistry and chemical reactions of permanent wave solutions and relaxers. Provides instructions in the applications of permanent waves and hair relaxers. Precautions and special problems involved in applying permanent waves and relaxers will be emphasized. Application of perms and relaxers on live models is included. Topics include: permanent wave techniques, safety procedures, chemical relaxer techniques, and permanent wave and chemical relaxer, application procedures on manikins, timed permanent wave, timed relaxer applications, safety precautions, and Hazardous Duty Standard Act. Contact hours: Class - 2, Lab - 9. Credit hours: 5. (F)

**BARB 1080 Advanced Haircutting/Styling** (Prerequisite: BARB 1000, BARB 1020, BARB 1030) Continues the theory and application of haircutting and styling techniques. Topics include: elevation and design cutting, introduction to hairpieces, blow-dry styling, and thermal waving and curling, advanced haircutting and styling; use of clippers, shears, and razor; hair chemical texturizing/styling; permanent waving/styling; shaving techniques; and beard trimming. Contact hours: Class - 1, Lab - 12. Credit hours: 5. (F)

**BARB 1090 Structures of Skin, Scalp, Hair and Facial Treatments** (Prerequisite: BARB 1000, BARB 1020, BARB 1030, BARB 1040, BARB 1050, BARB 1060; Prerequisite/corequisite: BARB 1070, BARB 1080) Introduces the theory, procedures, and products used in the care and treatment of the skin, scalp, and hair. Provides instruction on the theory and application of techniques in the treatment of the skin, scalp, and hair; and introduces the theory and skills required in massaging the face, preparing the patron for facial treatment, and giving facial treatments for various skin conditions. Benefits of facial treatments and massage will be emphasized. Emphasis will be placed on work with live models. Topics include: treatment theory, basic corrective hair and scalp treatments, plain facial, products and supplies, disease and disorders, implements, products and supplies, diseases and disorders, corrective hair and scalp treatments, facial procedures and manipulations, and safety precautions, theory of massage, preparation of patron for massage, massage procedures, facial treatment, types of facials, and facial treatment benefits. Contact hours: Class - 1, Lab - 6. Credit hours: 3. (Sp)

**BARB 1100 Barber/Styling Practicum and Internship** (Prerequisite: BARB 1000, BARB 1020, BARB 1030,
BARB 1040, BARB 1050, BARB 1060; Prerequisite/corequisite; BARB 1070, BARB 1080, BARB 1090) Provides experience necessary for professional development and completion of requirements for state licensure. Emphasis will be placed on the display of professional conduct and positive attitudes. The requirements for this course may be met in a laboratory setting or in a combination of a laboratory setting and an approved internship facility. Topics include: haircutting/styling, hairstyling texturizing, shaving, beard trimming, thermal waving, hairpiece fitting and styling, safety precautions, and licensure preparation. Contact hours: Class - 0, Lab - 9. Credit hours: 3. (Sp)

BARB 1110 Shop Management/Ownership (Prerequisite/Co-requisite: BARB 1000, BARB 1100) Emphasizes the steps involved in opening and operating a privately owned cosmetology salon or barber/styling shop. Topics include: planning a salon/shop, business management, retailing, public relations, sales skills, client retention, and entrepreneurship. Contact hours: Class - 1, Lab - 9. Credit hours: 3. (Sp)

BFMT 1030 Fundamentals of Structured Maintenance (Prerequisite: none) Provides introductory skills in basic building repair and maintenance. Topics include: carpentry and cabinet repairs, tile and floor repairs, paints and finishes, lab and shop safety, building codes, handicap accessibility, conduit installation, and waterproofing. Contact hours: Class - 2, Lab - 4. Credit hours: 4. (E)

BFMT 1040 Building Climate Controls (Prerequisite: none) Provides instruction in heating and cooling control systems used in modern residential and commercial structures. Topics include: thermostats, valves and dampers, pneumatic controls, and refrigeration system schematics and symbols. Contact hours: Class - 2, Lab - 2. Credit hours: 3. (E)

BFMT 1050 Fundamentals of Plumbing (Prerequisite: none) Provides introductory skills in basic plumbing. Topics include: basic pipe sizing, fitting identification and terminology, pipe joining, valve identification, plumbing repairs, and lab and shop safety. Contact hours: Class - 1, Lab - 2. Credit hours: 2. (E)

BIOL 0093 Introduction to Human Biology (Prerequisite: Diploma level proficiency in English, reading and math) Introduces the student to fundamental concepts of anatomy and physiology. Topics include: homeostasis, basic terminology, cell structure and function, and histology. Emphasis is placed on development of good study skills and critical thinking skills. Preparatory course for Biology 2113. Contact hours: Class - 3, Lab - 2. Credit hours: 4. (E)

BIOL 1000 Fundamental of Research Internship (Prerequisite: Degree level proficiency in English, Reading and Math) Fundamentals of Research Internship is a course to provide the skills necessary to conduct research. Students will be engaged with the basic skills required to work with a mentor, develop a research question, administer an experimental plan, collect and analyze data, formulate conclusions and communicate the findings. The overall purpose of the course is to provide an internship experience which will prepare the student for work in the research and/or life science industry. Contact hours: Class - 2, Lab – 3. Credit hours: 3. (F, Sp)

BIOL 1111 Biology I (Prerequisite: Degree level proficiency in English and reading; Prerequisite/Corequisite: BIOL 1111L) Provides an introduction to basic biological concepts with a focus on living cells. Topics include chemical principles related to cells, cell structure and function, energy and metabolism, cell division, protein synthesis, genetics, and biotechnology. (Associate level degree course) Contact hours: Class - 3, Lab - 0. Credit hours: 3. (E)

BIOL 1111L Biology Lab I (Prerequisite: Degree level proficiency in English and reading; Prerequisite/Corequisite: BIOL 1111) Selected laboratory exercises paralleling the topics in BIOL 1111. The laboratory exercises for this course include chemical principles related to cells, cell structure and function, energy and metabolism, cell division, protein synthesis, genetics, and biotechnology. This course requires a supply reimbursement charge. (Associate level degree course) Contact hours: Class - 0, Lab - 3. Credit hours: 1. (E)

BIOL 2113 Anatomy and Physiology I (Prerequisite: Degree level proficiency in math; Prerequisite/Corequisite: BIOL 2113; ENGL 1101) Introduces the anatomy and physiology of the human body. Emphasis is placed on the development of a systemic perspective of anatomical structures and physiological processes. Topics include body organization, cell structure and functions, tissue classifications, integumentary system, skeletal system, muscular system, and nervous and sensory systems. (Associate level degree course) Contact hours: Class - 3, Lab - 0. Credit hours: 3. (E)

BIOL 2113L Anatomy and Physiology Lab I (Prerequisite: Program Admission; Prerequisite/Corequisite: BIOL 2113, ENGL 1101) Selected laboratory exercises paralleling the topics in BIOL 2113. The laboratory exercises for this course include body organization, cell structure and functions, tissue classifications, integumentary system, skeletal system, muscular system, and nervous sensory systems. This course requires a supply reimbursement charge. (Associate level degree course) Contact hours: Class - 0, Lab - 3. Credit hours: 1. (E)

BIOL 2114 Anatomy and Physiology II (Prerequisite: BIOL 2113, BIOL 2113L; Prerequisite/Corequisite: BIOL 2114L) Continues the study of the anatomy and physiology of the human body. Topics include the endocrine system, cardiovascular system, blood and lymphatic system, immune system, respiratory system, digestive system, urinary system, and reproductive system. (Associate level degree course) Contact hours: Class - 3, Lab - 0. Credit hours: 3. (E)

BIOL 2114L Anatomy and Physiology Lab II (Prerequisite: BIOL 2113, BIOL 2113L; Prerequisite/
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Corequisite: BIOL 2114) Selected laboratory exercises paralleling the topics in BIOL 2114. The laboratory exercises for this course include the endocrine system, cardiovascular system, blood and lymphatic system, immune system, respiratory system, digestive system, urinary system, and reproductive system. This course requires a supply reimbursement charge. (Associate level degree course) Contact hours: Class - 0, Lab - 3. Credit hours: 1. (E)

BIOL 2117 Introductory Microbiology (Prerequisite: BIOL 2113, BIOL 2113L or BIOL 1111, BIOL 1111L; Prerequisite/Corequisite: BIOL 2117L). Provides students with a foundation in basic microbiology with emphasis on infectious disease. Topics include microbial diversity, microbial cell biology, microbial genetics, interactions and impact of microorganisms and humans, microorganisms and human disease. (Associate degree level course) Contact hours: Class - 3, Lab - 0. Credit hours: 3. (E)

BIOL 2117L Introductory Microbiology Lab (Prerequisite: BIOL 2113, BIOL 2113L or BIOL 1111, BIOL 1111L; Prerequisite/Corequisite: BIOL 2117) Selected laboratory exercises paralleling the topics in BIOL 2117. The laboratory exercises for this course include microbial diversity, microbial cell biology, microbial genetics, interactions and impact of microorganisms and humans, and microorganisms and human disease. This course requires a supply reimbursement charge. (Associate degree level course) Contact hours: Class - 0, Lab -3. Credit hours: 1. (E)

BIOL 2250 Applied Biotechnology Internship (Prerequisite: BSCI 2290; Program Director Approval) The internship experience is working 300 hours in an approved laboratory environment. The experience consists of working in the laboratory as a technician operating instruments, running samples, maintaining a laboratory notebook, etc. The intern makes detailed observations, analyzes data and interprets results. Interns prepare technical reports, summaries, protocols, and quantitative analyses. They maintain familiarity with current scientific literature and contribute to the process of the laboratory. (Associate degree level course) Contact hours: Class - 0, Lab - 9. Credit hours: 3. (E)

BIOL 2300 Biological Research (Program Instructor Approval; BIOL 1111/L, CHEM 1211/L and CHEM 1212/L; Prerequisite/Corequisite: BIOL 2117/L) The course aims at giving students lab research experience in one or more of the following topics: molecular biology, microbiology, ecology, biochemistry, structural biology or cellular biology by introducing students to a variety of research techniques and their applications. The course is intended for biology, chemistry and bioscience students seeking to acquire basic and advanced training in life science related fields. This course will provide instruction for understanding many biochemical and molecular techniques used in biotechnology and pharmaceutical industries. Students will be required to present their work in departmental seminars or scientific meetings, possibly publishing research outcomes in scientific journals. Note: This course requires a supply reimbursement charge. Contact hours: Class – 0, Lab – 9. Credit hours: 3. (E)

BIOL 2311 Human Pathophysiology (Prerequisite: BIOL 2113, BIOL 2113L, BIOL 2114, BIOL 2114L) Emphasis is placed on understanding the development of disease and its impact on human physiology. Topics include the causes and mechanisms of cell injury and death, inflammation and immune responses, abnormal tissue growth, genetic disorders, fluid and electrolyte balance, as well as a study of the basic diseases of each body system. (Associate degree level course) Contact hours: Class - 3, Lab - 0. Credit hours: 3. (E)

BSCI 1111 Introduction to Bioscience (Prerequisite: Degree level proficiency in English, reading and math) Introduction to and survey of the broad range of activities in bioscience technology. Major applications and advances in pharmaceuticals, medical devices, genomics, forensics, proteomics, agriculture, and environmental science will be covered. Including an in depth examination and discussion of ethical, legal and hands-on activities based on authentic bioscience applications. There is a survey of technical and regulatory aspects of physical, chemical, radiation and biological safety in the bioscience laboratory. Contact hours: Class – 3, Lab - 0. Credit hours: 3. (F, Sp)

BSCI 1211 Regulatory Compliance (Prerequisite: Degree level proficiency in English, reading and math) An introduction to the basic concepts of federal regulation of bioscience/ biotechnology research and biomanufacture. The structure and purview of the U.S. Food and Drug Administration, U.S. Department of Agriculture, Environmental Protection Agency and Occupation Safety and Health Administration will be covered. This course will also focus on the regulation of product produced in the life science sector including strategic planning, compliance, validation and documentation of production. Students will gain an understanding of the role of regulatory affairs in the overall business scheme. Differences between the regulatory requirements of the U.S. market compared to the European and Asian markets will be examined. Contact hours: Class – 3, Lab - 0. Credit hours: 3. (F, Sp)

BSCI 1212 Validation, Documentation and Quality Assurance (Prerequisite: CHEM 1211 and CHEM 1211/L) This course provides an overview of documentation and validation concepts used within a biomanufacturing facility. Emphasis will be placed on source documentation, writing and executing Standard Operating Procedures (SOPs), process and equipment validation, as well as validation of bulk starting materials. A hands-on laboratory-based course that will familiarize students with some basic procedures and techniques common to laboratories involved with work that is covered by Quality Systems Regulation (QSR) and current Good Manufacturing Practices (cGMP). The principles of Good Laboratory Practices (GLP) and effective documentation procedures will be stressed. Note: This course requires a supply
reimbursement charge. Contact hours: Class - 1, Lab – 5, Credit hours: 3. (Sp)

**BSCI 1220 Fundamentals of Biomanufacturing**
(Prerequisite: BSCI 1111 and BIOL 2117/L) This course is an introduction to the steps of development of products produced by microorganisms using biotechnology and genetic engineering which include: biopharmaceuticals, vaccines, enzymes and food ingredients. It will also introduce the various career opportunities involved in bioprocessing. Lectures will emphasize: how genetically altered microorganisms are used in drug development, methods used for manufacturing of biopharmaceuticals, vaccines, enzymes and food ingredients, biopharmaceutical process development, the design of biomanufacturing equipment and facilities, how bioprocesses are regulated by the U.S. Food and Drug Administration (FDA regulatory compliance), an introduction to biomanufacturing, and an introduction to scientific, engineering, regulatory compliance and business careers in biomanufacturing. Note: This course requires a supply reimbursement charge. Contact hours: Class - 1, Lab – 5, Credit hours: 3. (F)

**BSCI 1230 Environmental Laboratory Testing Methods**
(Prerequisite: CHEM 1211 and CHEM 1211/L) This course will prepare students to understand the scope of environmental testing and the work of technologists who perform these duties. Students will learn to collect, store, and transport environmental samples, and describe the major analytical procedures applied to these samples in the environmental lab. Data reduction and reporting will be discussed. Note: This course requires a supply reimbursement charge. Contact hours: Class - 1, Lab – 5, Credit hours: 3 (F)

**BSCI 1240 Pollution and Remediation**
(Prerequisite: CHEM 1211 and CHEM 1211/L) This course provides an overview of environmental contamination and pollution. Students will define contamination and pollution issues including sources, spread, and hazards to living and non-living entities. Regulatory affairs related to these issues, including federal, state and local laws, code, and regulations will be reviewed. Current best practices in remediation of environmental contamination and pollution will be covered. Note: This course requires a supply reimbursement charge. Contact hours: Class - 1, Lab – 5, Credit hours: 3. (Su)

**BSCI 2220 Nucleic Acid Chemistry and Analysis**
(Prerequisite: BSCI 1111, BIOL 1111/L, CHEM 2211/L, Prerequisite/Corequisite: BSCI 2290) A survey of common laboratory methodologies currently used in bioscience, and how to collect, assess and analyze data from these various methods. Methods examined include nucleic acid extraction, purification and characterization, PCR, Real-time PCR, bacterial transformation, restriction digest and analysis. Students learn to analyze sequences, select primers and utilize polymerase chain reaction as a diagnostic tool. Contact hours: Class - 0, Lab – 8. Credit hours:4. (Su)

**BSCI 2230 Methods of Protein Analysis**
(Prerequisite: BSCI 1111, BIOL 1111/L, CHEM 2211/L, Prerequisite/Corequisite: BSCI 2290) Develop and exercise the skill of solving typical problems in executing chemical and biological laboratory procedures. This course focuses on common lab challenges and failure modes. Instruction and exercises will target the anticipation and prevention of errors. Students will receive ample hands-on experience at the bench trouble-shooting and devising solutions. Note: This course requires a supply reimbursement charge. Contact hours: Class - 0, Lab – 8. Credit hours: 4. (Sp)

**BSCI 2290 Integrative Biology**
(Prerequisite: Program Admission; BIOL 1111, CHEM 2211 and CHEM 2211L) Students are introduced to major topics in biochemistry and cell biology, including biomolecules, enzymology, cellular anatomy and function, stimulus-effect coupling, molecular biology, principal topics in intermediary metabolism, plant cell structure and physiology, cancer, and a basic overview of immunology. The course establishes a working knowledge of these areas and integrates these diverse topics into a useful and comprehensive survey of mammalian and plant structure and function. The course includes a laboratory component that will familiarize students with common lab practices in biochemistry and cell biology. The entire course will emphasize critical-thinking and problem-solving skills. A lab fee is required. Note: This course requires a supply reimbursement charge. Contact hours: Class - 3, Lab - 6. Credit hours: 5. (Sp)

**BTEC 1100 Clinical Research Methods I**
(Prerequisite: Program Admission; Corequisite: BTEC 1105) This course introduces students to basic aspects of clinical research studies. Topics include: the nature of clinical research studies and the role of the clinical research professional in clinical studies. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (F)

**BTEC 1105 Clinical Regulatory Procedures I**
(Prerequisite: Program Admission; Corequisite: BTEC 1100) This course provides an introduction to federal and local regulatory oversight of clinical research on human beings. Topics include: historical basis for clinical research regulation and the nature of federal regulatory oversight for clinical trials. An examination of historical research misconduct is used to explain the need for regulatory oversight. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (F)

**BTEC 1110 Clinical Research Methods II**
(Prerequisite: BTEC 1100, BTEC 1105) This course extends an understanding of the role of the clinical research professional in research trials. Topics include: Good Clinical Practice (GCP) and the conduct of a clinical research study, the role of the Institutional Review Board, and the Informed Consent process. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (Sp)

**BTEC 2225 Clinical Research Design and Statistics**
(Prerequisite: BTEC 1100, BTEC 1105) An introduction to foundations of probability and statistical theory as
they apply to clinical research practitioners. Topics include: the concepts of error and variability in data; the normal distribution and its assumptions and dangers on use; the computation of basic population parameters and sample statistics, including measures of central tendency and variability; applicable measures of statistical significance and hypothesis testing; the interpretation of research data; basics of clinical research design, including commonly used parametric designs, when specific designs are applicable, and the strengths and weaknesses of specific designs; and how the clinical research professional can collect data to minimize error and variability in data. Contact hours: Class - 2, Lab - 0. Credit hours: 2. (Su)

**BTEC 2230 Technical Communications for Clinical Research (Prerequisite/Corequisite; BTEC 1110)** This course addresses reading, writing and spoken communication techniques critical to clinical research. Topics include: effective reading and writing of technical documents and elements of effective spoken communication. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (Su)

**BTEC 2241 Clinical Research Methods III (Prerequisite: BTEC 1110)** This course will focus on practical functions of the clinical research professional, including the writing and submission of Informed Consent Agreements, compliance with HIPAA, importance of source documents, and the reading of research protocols. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (Su)

**BTEC 2255 Clinical Regulatory Procedures II (Prerequisite: BTEC 1105)** This course is an examination of the informed consent process and the oversight of the Institutional Review Board. Topics include: format and review of informed consent agreements and the role of the Clinical Research Professional in administering informed consent. Students will develop an understanding of appropriate sections of CFR Titles 21 and 45. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (Sp)

**BTEC 2260 Ethics for Clinical Research (Prerequisite: Program Admission)** This course is an introduction to ethical considerations in the design and performance of clinical research on human beings. Topics include: landmark documents in the ethics of clinical research (Nuremberg Code, Declaration of Helsinki, Belmont Report), ethical factors surrounding informed consent, ethical clinical research and Good Clinical Practice, and the concept of clinical equipoise. Contact hours: Class – 2, Lab - 0. Credit hours: 2. (F)

**BUSN 1100 Introduction to Keyboarding (Prerequisite: Diploma level proficiency in English and reading)** This course introduces the touch system of keyboarding placing emphasis on correct techniques. Topics include: computer hardware, computer software, file management, learning the alphabetic keyboard, the numeric keyboard and keypad, building speed and accuracy, and proofreading. Students attain a minimum of 25 GWAM (gross words a minute) on 3-minute timings with no more than 3 errors. Contact hours: Class – 1, Lab – 4. Credit hours: 3. (E)

**BUSN 1180 Computer Graphics and Design (Prerequisite: FYES 1000)** Introduces how to: design and transmit electronic communications; create graphics on-line; and insert animation and sound to computer-generated charts, graphs, and diagrams. Contact hours: Class - 1, Lab - 4. Credit hours: 3. (T)

**BUSN 1190 Digital Technologies in Business (Prerequisite/Corequisite: FYES 1000)** Provides an overview of digital technology used for conducting business. Students will learn the application of business activities using various digital platforms. Contact hours: Class - 1, Lab - 2. Credit hours: 2. (T)

**BUSN 1240 Office Procedures (Prerequisite/Corequisite: FYES 1000, diploma level proficiency in English and reading)** Emphasizes essential skills required for the business office. Topics include: office protocol, time management, telecommunications and telephone techniques, office equipment, workplace mail, records management, travel/meeting arrangements, electronic mail, and workplace documents. Contact hours: Class - 2, Lab - 2. Credit hours: 3. (E)

**BUSN 1250 Records Management (Prerequisite: BUSN 1440 or BUSN 1400)** Introduces records management concepts for use in any office environment. Topics include: Basic Records Management Concepts; Alphabetic, Numeric, Subject, and Geographic Filing; and Records Retention, Transfer, and Disposition of Records. Contact hours: Class - 2, Lab - 2. Credit hours: 3. (T)

**BUSN 1300 Introduction to Business (Prerequisite: diploma level proficiency in English and reading; Prerequisite/Corequisite: FYES 1000)** Introduces organization and management concepts of the business world and in the office environment. Topics include business in a global economy, starting and organizing a business, enterprise management, marketing strategies and financial management. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (T)

**BUSN 1400 Word Processing Applications (Prerequisite: FYES 1000; and diploma level proficiency English, reading and math)** This course covers the knowledge and skills required to use word processing software through course demonstrations, laboratory exercises and projects. Minimal document keying will be necessary as students will work with existing documents to learn the functions and features of the word processing application. Topics and assignments will include: word processing concepts, customizing documents, formatting content, working with visual content, organizing content, reviewing documents, sharing and securing content. Contact hours: Class - 2, Lab - 4. Credit hours: 4. (E)

**BUSN 1410 Spreadsheet Concepts and Applications (Prerequisite: FYES 1000; and diploma level proficiency English, reading and math)** This course introduces the basic use of spreadsheets in business applications. Topics include: understanding the differences between spreadsheets and word processing applications; managing data; formatting documents; and performing calculations. Contact hours: Class - 2, Lab - 3. Credit hours: 3. (E)
level proficiency in math, English and reading) This course covers the knowledge and skills required to use spreadsheet software through course demonstrations, laboratory exercises and projects. Topics and assignments will include: spreadsheet concepts, creating and manipulating data, formatting data and content, creating and modifying formulas, presenting data visually and, collaborating and securing data. Contact hours: Class - 2, Lab - 4. Credit hours: 4. (F)

BUSN 1420 Database Applications (Prerequisite: FYES 1000; and diploma level proficiency in math, English and reading) This course covers the knowledge and skills required to use database management software through course demonstrations, laboratory exercises and projects. Topics and assignments will include: database concepts, structuring databases, creating and formatting database elements, entering and modifying data, creating and modifying queries, presenting and sharing data and, managing and maintaining databases. Contact hours: Class - 2, Lab - 4. Credit hours: 4. (Sp)

BUSN 1430 Desktop Publishing and Presentation Applications (Prerequisite/Corequisite: FYES 1000) This course covers the knowledge and skills required to use desktop publishing (DTP) software and presentation software to create business publications and presentations. Course work will include course demonstrations, laboratory exercises and projects. Topics include: desktop publishing concepts, basic graphic design, publication layout, presentation design, and practical applications. Contact hours: Class - 2, Lab - 4. Credit hours: 4. (T)

BUSN 1440 Document Production (Prerequisite: Diploma level proficiency in math, English, and reading and BUSN 1100 or the ability to key 25 gross words a minute on 3-minute timings with no more than 3 errors; Prerequisite/Corequisite: FYES 1000) Reinforces the touch system of keyboarding placing emphasis on correct techniques with adequate speed and accuracy and producing properly formatted business documents. Topics include: reinforcing correct keyboarding technique, building speed and accuracy, formatting business documents, language arts, proofreading, and work area management. Contact hours: Class - 1, Lab - 6. Credit hours: 4. (E)

BUSN 2160 Electronic Mail Applications (Prerequisite: diploma level proficiency in math, English and reading; Prerequisite/Corequisite: FYES 1000) This course provides instruction in the fundamentals of communicating with others inside and outside the organization via a personal information management program. Emphasizes the concepts necessary for individuals and workgroups to organize, find, view, and share information via electronic communication channels. Topics include: Internal and External Communication, Message Management, Calendar Management, Navigation, Contact and Task Management, and Security and Privacy. Contact hours: Class – 1, Lab – 2. Credit hours: 2. (T)

BUSN 2170 Web Page Design (Prerequisite: FYES 1000) This course provides instruction in the concepts necessary for individuals to create and manage professional quality web sites. Topics include: Web Site Creation, Web Page Development and Design, Hyperlink Creation, Test, and Repair, Integration, Web Site Navigation, and Web Site Management. Contact hours: Class – 1, Lab – 2. Credit hours: 2. (T)

BUSN 2180 Speed and Accuracy Keying (Prerequisite: BUSN 1100 or BUSN 1440) Further develops speed and accuracy through analysis of keying and prescribed practice drills. Topics include: building speed and accuracy and straight-copy proofreading. Contact hours: Class – 0, Lab – 2. Credit hours: 1. (T)

BUSN 2190 Business Document Proofreading and Editing (Prerequisite: ENGL 1010 or ENGL 1101; Corequisite: BUSN 1440) Emphasizes proper proofreading and editing for business documents. Topics include: applying proofreading techniques and proofreaders marks with business documents; proper content, clarity, and conciseness in business documents; and business document formatting. Contact hours: Class – 2, Lab – 2. Credit hours: 3. (T)

BUSN 2200 Office Accounting (Prerequisite: Program Admission; and diploma level proficiency in Math) Introduces fundamental concepts of the accounting cycle for a sole proprietor service business. Topics include: accounting equation, analyzing business transactions, journalizing and posting transactions, accounts receivable and accounts payable subsidiary ledgers, financial statements, cash control, and payroll concepts. Contact hours: Class - 3, Lab - 2. Credit hours: 4. (T)

BUSN 2210 Applied Office Procedures (Prerequisite: BUSN 1240, BUSN 1400, BUSN 1410, and BUSN 1440; Prerequisite/Corequisite: BUSN 2200 or ACCT 1100; and BUSN 2190) This course focuses on applying knowledge and skills learned in prior courses taken in the program. Topics include: communications skills, telecommunications skills, records management skills, office equipment/supplies, and integrated programs/applications. Serves as a capstone course. Contact hours: Class – 1, Lab – 4. Credit hours: 3. (T)

BUSN 2300 Medical Terminology (Prerequisite: Program Admission) Introduces the basic spelling and pronunciation of medical terms, and the use of these terms as they relate to anatomy, treatment, surgery, and drugs. Topics include: word analysis, word elements, spelling, pronunciation, and semantics. Contact hours: Class – 2, Lab – 0. Credit hours: 2. (T)

BUSN 2310 Anatomy & Terminology for the Medical Administrative Assistant (Prerequisite: Program Admission) Introduces the structure and function of the human body including medical terminology. Topics covered include information which will provide the medical office assistant with the knowledge needed to
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communicate with office staff, physicians, and patients and to assist in completion of medical reports generated in the medical office. Topics include: body structures, body functions, and medical terminology. Contact hours: Class – 3, Lab – 0. Credit hours: 3. (T)

BUSN 2340 Medical Administrative Procedures
(Prerequisite: ALHS 1090 or BUSN 2300; and ALHS 1011 or BUSN 2310; and BUSN 1440) Emphasizes essential skills required for the medical office. Introduces the knowledge and skills of procedures for billing purposes. Introduces the basic concept of medical administrative assisting and its relationship to the other health fields. Emphasizes medical ethics, legal aspects of medicine, and the medical administrative assistant's role as an agent of the physician. Provides the student with knowledge and the essentials of professional behavior. Topics include: introduction to medical administrative assisting, medical law, ethics, patient relations/human relations, physician-patient-assistant relationship, medical office in litigation, medical records management, scheduling appointments, pegboard or computerized accounting, health insurance, transcription of medical documents, and billing/collection. Contact hours: Class – 2, Lab – 4. Credit hours: 4. (T)

BUSN 2370 Medical Office Billing/Coding/Insurance
(Prerequisite: ALHS 1090 or BUSN 2300; and ALHS 1011 or BUSN 2310) Provides an introduction to medical coding skills and applications of international coding standards for billing of health care services. Provides the knowledge and skills to apply coding of diagnostic statements and procedures for billing purposes. Provides an introduction to medical coding as it relates to health insurance. Topics include: International classification of diseases, code book formats; coding techniques; formats of the ICD and CPT manuals; health insurance; billing, reimbursement, and collections; and managed care. Contact hours: Class – 2, Lab – 2. Credit hours: 3. (T)

CARP 1070 Site Layouts, Footings, and Foundations
(Prerequisite: COFC 1020) Introduces the concepts and practices of basic site layout, footings, and foundation construction. Students will use layout equipment for on-site laboratory practice. Topics include: zoning restrictions and codes, batter board installation, builder’s level, squaring methods, footings, plot plan interpretation, materials estimation, foundation types, foundation forms, edge forms, waterproofing, soil testing and excavation. Contact hours: Class - 2, Lab - 2. Credit hours: 3. (F, Su)

CARP 1105 Floor Wall and Stair Framing
(Prerequisite: COFC 1020) This course provides instruction in floor and wall materials and materials estimation, framing production of walls and partitions, stairs and framing production of flooring. Emphasis is placed on practical application of skills. Topics include estimation and computation procedures, rough layouts, and layout and installation procedures. Contact hours: Class - 3, Lab - 2. Credit hours: 4. (Sp, F)

CARP 1110 Ceiling and Roof Framing
(Prerequisite: COFC 1020) This course provides instruction in the theory and practical application of skills required to construct ceiling and roof framings and coverings. Topics include systems and materials identification, layout procedures, installation procedures, cost and materials estimation, and safety precautions. Contact hours: Class - 2, Lab - 4. Credit hours: 4. (Sp)

CARP 1112 Exterior Finishes and Roof Coverings
(Prerequisite: COFC 1020) Introduces materials identification, estimation, and installation procedures for exterior finish and trim materials to include window and door units. Emphasis will be placed on competency development through laboratory practice. Topics include: doors and windows, siding types, cornice and soffit, decks, roof coverings, materials identification, materials estimation, and installation procedures. Contact hours: Class - 2, Lab - 4. Credit hours: 4. (E)

CARP 1114 Interior Finishes and Decks
(Prerequisite: COFC 1020) This course introduces the procedures and methods for identifying materials, cost estimating, and installation of interior finishes and trim. Topics include materials identification; cost estimating, trim, insulation, doors, gypsum wallboard, and paneling used in finishing jobs. Contact hours: Class - 2, Lab - 4. Credit hours: 4. (F, Sp)

CARP 1190 Advanced Residential Finishes and Decks
(Prerequisite: COFC 1020) This course introduces finish floor coverings, fireplace trim, cabinets & millwork, and deck framing & guardrails for residential construction projects. Emphasis will be placed on identification, estimation and installation of various types of hard and soft floor coverings. This course introduces design, construction and installation of fireplace trim. The course also introduces locating and installing cabinets and millwork. Topics include: identification of flooring materials, flooring estimation procedures, flooring installation procedures, fireplace trim, cabinets and millwork installation procedures, and deck framing & guardrails. Contact hours: Class - 2, Lab - 3. Credit hours: 3. (T)

CAVT 1002 Medical Physics
(Prerequisites: Program Admission) In this course the student is introduced to theory of medical instrumentation and physics found in the cardiovascular sciences. Performance of laboratory procedure is used to reinforce understanding of biomedical applications of equipment and uses as well as proper technique in safety. Topics include: electrical circuit theory, hospital equipment safety and medical instruments and equipment. Contact hours: Class - 2, Lab - 2. Credit hours: 2. (T)

CAVT 1020 Cardiac Catheterization I
(Corequisites: CAVT 1021) This course includes an intensive study of the role of the Cardiovascular Technology student in the various diagnostic invasive cardiac catheterization procedures such as right and left heart procedures, temporary pacemakers, Swan-Ganz catheters, and coronary angioplasty. This includes identification of
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angiographic images and data as well as basic interventional techniques. Topics include: introduction to cardiac catheterization, medical legal ethics in the cardiac catheterization lab, angioplastics, hemodynamic principles, special techniques in cardiac catheterization, and interventional techniques. Additional topics include emergency life support, cardiac pharmacology, and cardiac pathology and advance cardiac life support. Contact hours: Class - 1, Lab – 6. Credit hours: 4. (T)

CAVT 1021 Cardiac Catheterization Clinical I (Corequisites: CAVT 1020) Clinical prep will provide hands-on experience and will serve as an introduction to the competencies, rotations, and expectations of the student while in the cardiac catheterization lab in a student capacity. Topics include: ethical and legal behavior in the catheterization laboratory, environmental safety in the catheterization laboratory, clinical orientation, monitoring skills, and basic life support. The student will perform and complete various competencies to prepare for the clinical experience in each rotation. Contact hours: Class - 0, Lab - 9. Credit hours: 3. (T)

CAVT 1030 Electrophysiology and Cardiac Anatomy (Prerequisites: Program Admission) Introduces the concepts essential in the performance and interpretation of 12 lead EKG and heart sounds. As a study of the anatomy, physiology, structural relationships, and the pathophysiology of the human heart and vascular system, the course concentrates on specialized terminology, cardiac and vascular anatomy, and electrophysiology. Topics include: heart anatomy, circulatory system, heart electrical system, physical heart defects, electrocardiograph, preparation for various electrocardiographic examinations, physical principles and pathophysiology of heart sounds, exercise physiology, stress testing, Holter monitoring, cardiac pacemakers, and cardiac rehabilitation programs. Laboratory experiences will be provided. Contact hours: Class - 1, Lab - 4. Credit hours: 3. (T)

CAVT 1080 Advanced Hemodynamics and Cardiac Physiology (Prerequisites: Program Admission) The student is introduced to various forms of invasive monitoring. Various forms of invasive access are studied, including right and left heart catheterization, arterial line setups, and appropriate care. Emphasis is placed on the basics of hemodynamic monitoring and interpretation. Also provides an overview of cardiovascular physiology and pathophysiology. Topics include: hemodynamics, aseptic technique, infection control, biochemistry of the cardiac muscle, conduction system, electrocardiogram, pathophysiology of acquired diseases, embryological development, and pathophysiology of congenital diseases. Contact hours: Class - 1, Lab - 4. Credit hours: 3. (T)

CAVT 1090 Drug Calculations and Administration (Prerequisites: MATH 1111, MATH 1127) Uses basic mathematical concepts and includes basic drug administration. Emphasizes critical thinking skills. Topics include: systems of measurement, calculating drug problems, resource materials usage, basic pharmacology, administering medications in a simulated clinical environment, principles of IV therapy techniques, and client education. Contact hours: Class - 1, Lab - 2. Credit hours: 2. (T)

CAVT 1100 Cardiac Catheterization Fundamentals (Prerequisites: Program Admission) Provides an overview of cardiovascular invasive diagnosis and therapy. Includes an introduction of the cardiac catheterization lab. Topics include: x-ray therapy, safety, positioning, coronary arteriography, pharmacology, invasive cardiac measurements and calculations, and specialty procedures. Contact hours: Class - 1, Lab - 4. Credit hours: 3. (T)

CAVT 2020 Cardiac Catheterization 2 (Prerequisites: CAVT 1020, CAVT 1021; Prerequisite/Corequisite: CAVT 2030) An intensive study of the role of the CV Technologist in the various invasive Cardiac Catheterization procedures such as: Right and Left heart catheterization, temporary pacemakers, Swan-Ganz, and coronary angioplasty. Topics include: general principles of acid-base and blood gas collection, interpretation and analogies, cardiac surgery and peripheral vascular disease, basic principles of electrophysiology and pacemaker technology, congenital heart disease and corrective surgeries, and basic hemodynamic review. Lab experience will be provided. Contact hours: Class - 1, Lab – 6. Credit hours: 4. (T)

CAVT 2030 Cardiac Catheterization Clinical 2 (Prerequisites: CAVT 1020, CAVT 1021; Prerequisite/Corequisite: CAVT 2020) Provides hands-on experience in performing invasive cardiac catheterization procedures while being monitored by a registered preceptor. Topics include: policies and procedures class, ethical and legal behavior in the catheterization laboratory, scrubbing skills, monitoring skills, circulating skills, and advanced cardiac life support (ACLS) certification. Contact hours: Class - 0, Lab - 18. Credit hours: 6. (T)

CAVT 2050 Cardiac Catheterization Clinical 3 (Prerequisites: Program Admission) The course provides a culminating clinical experience which allows students to analyze information and procedural instruction provided throughout the program. Offers an intensive study of the hands-on experience in role of the cardiac catheterization technologist in advanced cardiovascular procedures related to the catheterization lab while being monitored by a registered preceptor with emphasis on continuing to develop skills in scrubbing, monitoring and circulating during diagnostic and interventional procedures. Topics include: professional conduct, infection control, scrubbing skills, monitoring skills and circulation skills. Contact hours: Class - 0, Lab - 33. Credit hours: 11. (T)

CAVT 2070 Cardiac Catheterization Registry Review I (Prerequisites: CAVT 1020, CAVT 1021,
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CAVT 2020, CAVT 2030) An intensive review to prepare the student for the national examination. Topics include: cardiovascular anatomy and physiology, cardiovascular disease and pathophysiology, hemodynamic data, diagnostic techniques and patient care assessments. Contact hours: Class - 0, Lab - 4. Credit hours: 2. (T)

CCMN 1000 Introduction to Construction and Development (Prerequisite: Provisional Admission) This course is a study of the commercial construction process, terminology, participant roles, and phases. Topics include: project types, project stages, construction documents, marketing, contract procurement, estimating, bonding, scheduling, mobilization, materials, methods, change orders, claims, safety, organizational management, computers in construction, communication, contract types, liability and loss control. Contact hours: Class - 1, Lab -2. Credit hours: 2. (E)

CCMN 1020 Building Technologies and Methods (Prerequisite: Provisional Admission) This course is a study of the materials and technologies utilized in commercial construction. Topics include: site-work, foundations, building structure, interior and exterior finishes, roofing, mechanical, electrical, plumbing and conveying systems. An overview of materials testing is also presented. Contact hours: Class - 3, Lab - 2. Credit hours: 4. (F)

CCMN 1030 Construction Graphics (Prerequisite: Provisional Admission) This course provides the skills to read and interpret commercial construction graphical documents. Topics include: dimensioning practices, layout, abbreviations, symbol usage, line types, computer aided design, and principles of drawing. An overview of project specifications is included. Contact hours: Class - 2, Lab -2. Credit hours: 3. (F, Sp)

CCMN 1040 Construction Safety (Prerequisite: Provisional Admission) This course covers commercial construction safety and loss prevention. Topics include: safety plan management, emergency planning, project security, sources of safety information and supplies, personal protective equipment (PPE), fire prevention, hazardous communications, material safety data sheets (MSDS), fall protection, electrical hazards, ladders, scaffolds, stairways, confined spaces, excavations, training techniques, accident reporting, materials handling and storage, cranes, mechanized equipment, steel erection, and concrete construction. Training for the OSHA 30-hour credential is included in this course. Contact hours: Class - 4, Lab - 0. Credit hours: 4. (Sp)

CCMN 1060 Construction Estimating I (Prerequisite: CCMN 1030) This course provides the skills required to develop a material quantity estimate from commercial construction drawings and specifications. Completion of a quantity survey project is required. Contact hours: Class - 3, Lab - 2. Credit hours: 4. (Sp)

CCMN 1070 Construction Estimating II (Prerequisite: CCMN 1060) This course continues the study of the estimating process emphasizing pricing the general contractor's work including: estimating procedures, development of direct and indirect unit costs, evaluation of subcontractor's bids, bidding strategy, and bid opening. The completion of an estimate, bid submission, and development of a schedule of values are required. Also included is an introduction to conceptual estimating. Contact hours: Class - 3, Lab - 2. Credit hours: 4. (F)

CCMN 2010 Construction Law (Prerequisite: CCMN 1000) This course is a study of the legal aspects of commercial construction contracting. Topics include: contracts, drug testing, sexual harassment, labor management relations, discrimination, worker compensation, bonding, claims, arbitration, mediation, business types, minority business enterprises, hiring and firing practices. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (F, Su)

CCMN 2020 Construction Scheduling (Prerequisite: CCMN 1000, Prerequisite/Corequisite: CCMN 1020) This course is a study of commercial construction scheduling and cost controls. Topics include network diagrams, time-scaled design, Gantt charts and computerized scheduling. Students will complete projects utilizing the critical path method in both manual and computerized formats. Contact hours: Class - 4, Lab - 0. Credit hours: 4. (F)

CCMN 2030 Construction Accounting and Financial Management (Prerequisite: CCMN 1060) This course provides a study of financial management and accounting theory with specific application to the commercial construction industry. Topics include accounting data, financial statements, cost control, taxation, ratio analysis, the time value of money, budgeting, cash flow, financing, and receivables. Contact hours: Class - 4, Lab - 0. Credit hours: 4. (Sp)

CCMN 2040 Construction Project Management (Prerequisite: CCMN 1070) This course is a study of delivery methods, contract documents, supervision, working with owners and design professionals, control of cash flow, procurement, management of subcontractors, job records, contract changes, and payment procedures. Contact hours: Class - 4, Lab - 0. Credit hours: 4. (Sp)

CCMN 2500 Commercial Construction Management Internship-Practicum (Prerequisite: CCMN 1000, CCMN 1020, CCMN 1030) This course provides the student an opportunity to gain real-world experience by working with a local industry in the appropriate field for a minimum of 135 hours during the term or, alternatively, an equivalent number of hours on real-world projects at the college. Contact hours: Class – 0, lab – 9. Credit hours: 3. (Sp, Su)

CHEM 0093 Introduction to Chemistry (Prerequisite: Diploma level proficiency in English, reading and math) Introduces the student to fundamental concepts of chemistry. Topics include: basic chemistry math, measurements and conversions, periodic trends, atomic structure and nomenclature. Emphasis is placed
on development of good study skills and critical thinking skills. Preparatory course for Chemistry 1211. Contact hours: Class - 3, Lab -2. Credit hours: 4. (E)

**CHEM 1211 Chemistry I**  
(Prerequisite: Degree level proficiency in English and Reading; MATH 1111; Corequisite: CHEM 1211) Provides an introduction to basic chemical principles and concepts which explain the behavior of matter. Topics include measurement, physical and chemical properties of matter, atomic structure, chemical bonding, nomenclature, chemical reactions, and stoichiometry and gas laws. (Associate degree level course) Contact hours: Class - 3, Lab - 0. Credit hours: 3. (E)

**CHEM 1211L Chemistry Lab I**  
(Prerequisite: Degree level proficiency in English and Reading; MATH 1111; Corequisite: CHEM 1211) Selected laboratory exercises paralleling the topics in CHEM 1211. The laboratory exercises for this course include measurement, physical and chemical properties of matter, atomic structure, chemical bonding, nomenclature, chemical reactions, stoichiometry and gas laws. This course requires a supply reimbursement charge. (Associate degree level course) Contact hours: Class - 0, Lab - 3. Credit hours: 3. (E)

**CHEM 1212 Chemistry II**  
(Prerequisite: CHEM 1211, CHEM 1211L; Corequisite: CHEM 1212) Continues the exploration of basic chemical principles and concepts. Topics include equilibrium theory, kinetics, thermodynamics, solution chemistry, acid-base theory, and nuclear chemistry. (Associate degree level course) Contact hours: Class - 3, Lab - 0. Credit hours: 3. (E)

**CHEM 1212L Chemistry Lab II**  
(Prerequisite: CHEM 1211, CHEM 1211L; Corequisite: CHEM 1212) Selected laboratory exercises paralleling the topics in CHEM 1212. The laboratory exercises for this course include equilibrium theory, kinetics, thermodynamics, solution chemistry, acid-base theory, and nuclear chemistry. This course requires a supply reimbursement charge. (Associate degree level course) Contact hours: Class - 0, Lab - 3. Credit hours: 3. (E)

**CHEM 2211 Organic Chemistry I**  
(Prerequisite: CHEM 1212, CHEM 1212L; Corequisite: CHEM 2211L) This course is the first of a two-semester sequence on the organic chemistry of alkanes, alkenes and their substitution products, reactions, nomenclature, functional groups and electron structure. (Associate degree level course) Contact hours: Class - 3, Lab - 0. Credit hours: 3. (F, Sp)

**CHEM 2211L Organic Chemistry Lab I**  
(Prerequisite: CHEM 1212, CHEM 1212L; Corequisite: CHEM 2211) In this laboratory course, students perform experiments to illustrate the reactions, principles and techniques presented in Organic Chemistry I. Students gain experience in synthesis and techniques relating to isolation, purification and identification of organic compounds. This course requires a supply reimbursement charge. (Associate degree level course) Contact hours: Class - 0, Lab - 3. Credit hours: 1. (F, Sp)

**CHEM 2212 Organic Chemistry II**  
(Prerequisite: CHEM 2211, CHEM 2211L; Corequisite: CHEM 2212L) This course is a continuation of Organic Chemistry I. Topics include spectroscopy, aromatic compounds and a survey of carbonyl compounds and their reactions. Instructors emphasize biorganic compounds as they relate to biological structure and function. (Associate degree level course) Contact hours: Class - 3, Lab - 0. Credit hours: 3. (Sp, Su)

**CHEM 2212L Organic Chemistry II Lab**  
(Prerequisite: CHEM 2211, CHEM 2211L; Corequisite: CHEM 2212) In this laboratory course, students perform experiments to illustrate the reactions, principles and techniques presented in Organic Chemistry II. Students gain additional experience in instrumentation, synthesis and techniques relating to isolation and purification. They also expand their capabilities relating to the identification of organic compounds. This course requires a supply reimbursement charge. (Associate degree level course) Contact hours: Class - 0, Lab - 3. Credit hours: 1. (Sp, Su)

**CHEM 2300 Quantitative Analysis**  
(Prerequisite: BSCI 1111, CHEM 1211/L, CHEM 1212/L; Corequisite: CHEM 2300L) This course covers quantitative analytical applications and examines the theories underlying ultraviolet-visible spectroscopy, infrared spectroscopy, atomic spectroscopy, gas chromatography and high performance liquid chromatography. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (F)

**CHEM 2300L Quantitative Analysis Lab**  
(Prerequisite: BSCI 1111, CHEM 1211/L, CHEM 1212/L; Corequisite: CHEM 2300) This course begins to develop expertise in techniques involving the operation of many common laboratory instruments. Samples will be analyzed using instrumental methods including UV/Vis and FT/IR spectroscopy, HPLC, GC/MS, and GC/FID. Note: This course requires a supply reimbursement charge. Contact hours: Class - 0, Lab - 6. Credit hours: 2. (F)

**CIST 1001 Computer Concepts**  

**CIST 1102 Keyboarding**  
(Prerequisite: none) Introduces the touch system of keyboarding placing emphasis on correct techniques. Topics include...
learning the alphabetic keyboard, the numeric keyboard and keypad, building speed and accuracy, and proofreading. Students attain a minimum of 20 GWAM (gross words a minute). Contact hours: Class - 1, Lab - 4. Credit hours: 3. (E)

CIST 1122 Hardware Installation and Maintenance
(Prerequisite: none) This course serves to provide students with the knowledge of the fundamentals of computer technology, networking, and security along with the skills required to identify hardware, peripheral, networking, and security components with an introduction to the fundamentals of installing and maintaining computers. Students will develop the skills to identify the basic functionality of the operating system, perform basic troubleshooting techniques, utilize proper safety procedures, and effectively interact with customers and peers. This course is designed to help prepare students for the CompTIA A+ certification examination. Contact hours: Class – 2, Lab - 5. Credit hours: 4. (E)

CIST 1130 Operating Systems Concepts
(Prerequisite: CIST 1001) Provides an overview of modern operating systems and their use in home and small business environments. Activities will utilize the graphical user interface (GUI) and command line environment (CLI) This will include operating system fundamentals; installing, configuring, and upgrading operating systems; managing storage, file systems, hardware and system resources; troubleshooting, diagnostics, and maintenance of operating systems; and networking. Contact hours: Class - 1, Lab - 4. Credit hours: 3. (E)

CIST 1200 Database Management
(Prerequisite: CIST 1001) Provides an overview of the skills and knowledge of database application systems which are used in business government and industry. Topics include: history, database terminology and concepts, database system logical organization, data manipulation, database design concepts, models, normalization, Entity Relationship diagramming, physical database, networking and databases, and database security. Contact hours: Class - 2, Lab - 4. Credit hours: 4. (E)

CIST 1220 Structured Query Language (SQL)
(Prerequisite: CIST 1001) Includes basic database design concepts and solving database retrieval and modification problems using the SQL language. Topics include: database Vocabulary, Relational Database Design, Date retrieval using SQL, Data Modification using SQL, Developing and Using SQL Procedures. Contact hours: Class - 2, Lab - 5. Credit hours: 4. (E)

CIST 1305 Program Design and Development
(Prerequisite: Diploma level proficiency in English, reading and math) An introductory course that provides problem solving and programming concepts for those that develop user applications. An emphasis is placed on developing logic, troubleshooting, and using tools to develop solutions. Topics include: problem solving and programming concepts, structured programming, the four logic structures, file processing concepts, and arrays. Contact hours: Class – 2, Lab – 2. Credit hours: 3. (E)

CIST 1401 Computer Networking Fundamentals
(Prerequisite: CIST 1001) Introduces networking technologies and prepares students to take the CompTIA's broad-based, vendor independent networking certification exam, Network +. This course covers a wide range of material about networking, including local area networks, wide area networks, protocols, topologies, transmission media, and security. Focuses on operating network management systems, and implementing the installation of networks. It reviews cabling, connection schemes, the fundamentals of the LAN and WAN technologies, TCP/IP configuration and troubleshooting, remote connectivity, and network maintenance and troubleshooting. Topics include: basic knowledge of networking technology, network media and topologies, network devices, network management, network tools and network security. Contact hours: Class - 2, Lab - 4. Credit hours: 4. (E)

CIST 1510 Web Development I
(Prerequisite: Diploma level proficiency in English, reading and math) Explores the concepts of Hypertext Markup Language, Cascading Style Sheets (CSS), XML, and HTML following the current standards (HTML5) set by the World Wide Web Consortium (W3C) for developing inter-linking web pages that include graphical elements, hyperlinks, tables, forms, and image maps. Contact hours: Class - 2, Lab - 2. Credit hours: 3. (E)

CIST 1520 Scripting Technologies
(Prerequisite: CIST 1305, CIST 1510) Students learn how to use the features and structure of a client side scripting language, explore the features on server side scripting and develop professional web applications that include special effects, interactive, dynamic, validated, and secure forms. Contact hours: Class - 2, Lab - 2. Credit hours: 3. (E)

CIST 1530 Web Graphics I
(Prerequisite: CIST 1001) Students will explore how to use industry standard or open source graphics software programs to create Web ready images and Web pages. Topics include advanced image correction techniques and adjustments, typography and interpolation as well as conditional scripting statements and arrays. The course includes a final project that allows students to develop a Web page/site using the chosen software. Contact hours: Class - 2, Lab - 2. Credit hours: 3. (E)

CIST 1550 Web Graphics I
(Prerequisite: CIST 1001) A study and use of vector graphics for production. Skill development in the use of the tools and transformation options of Adobe Illustrator to create complex vector illustrations for print and web-based media. Mastery in manipulation of both text and graphics and the correct use and management of different color modes. Course includes a final project that allows students to develop a web page/site using the chosen software. Contact hours: Class - 1, Lab - 3. Credit hours: 3. (E)
CIST 1560 Web Graphics I (Prerequisite: CIST 1001)  
A study and application of design with multiple layouts in a single document, exporting PDFs, linking between documents and alternate layouts, and moving page elements between layouts for production. Skill development in the use of the tools and transformation options of Adobe InDesign to create complex layouts for print and web-based media. Mastery in manipulation of both text and graphics and the correct use and management of different color modes. Course includes a final project that allows students to develop a web page/site using the chosen software. Contact hours: Class - 1, Lab - 3. Credit hours: 3. (E)

CIST 1601 Information Security Fundamentals  
(Prerequisite: CIST 1001) This course provides a broad overview of information security. It covers terminology, history, security systems development and implementation. Student will also cover the legal, ethical, and professional issues in information security. Contact hours: Class - 2, Lab - 2. Credit hours: 3. (E)

CIST 1602 Security Policies and Procedures  
(Prerequisite: CIST 1001; Corequisite: CIST 1401) This course provides knowledge and experience to develop and maintain security policies and procedures. Students will explore the legal and ethical issues in information security and the various security layers: physical security, personnel security, operating systems, network, software, communication and database security. Students will develop an Information Security Policy and an Acceptable Use Policy. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (E)

CIST 2351 PHP Programming I  
(Prerequisite: CIST 1305, CIST 1510, CIST 1520) An introductory PHP programming course that teaches students how to create dynamic websites. Topics include: PHP and basic web programming concepts, installing PHP, embedding PHP in HTML, variables and constants, operators, forms, conditional statements, looping, arrays, and text files. Contact hours: Class - 2, Lab - 5. Credit hours: 4. (E)

CIST 2361 C++ Programming I (Prerequisite: CIST 1305)  
Provides opportunity to gain a working knowledge of C++ programming. Includes creating, editing, executing, and debugging C++ programs of moderate difficulty. Topics include: basic C++ concepts, simple I/O and expressions, I/O and control statements, arrays, pointers, structures, managing data and developing programs. Contact hours: Class - 2, Lab - 5. Credit hours: 4. (E)

CIST 2362 C++ Programming II (Prerequisite: CIST 2361)  
Develops skills for the programmer to write programs using the language of C++. Emphasis is placed on utilizing the added features of C++, which will be added to the skills mastered in Introduction to C++ Programming. Topics include: objects, classes, inheritance, overloading, polymorphism, streams, containers, and exceptions. Contact hours: Class - 2, Lab - 5. Credit hours: 4. (F, Sp)

CIST 2371 Java Programming I (Prerequisite: CIST 1305)  
This course is designed to teach the basic concepts and methods of object-oriented design and Java programming. Use practical problems to illustrate Java application building techniques and concepts. Develop an understanding of Java vocabulary. Create an understanding of where Java fits in the application development landscape. Create an understanding of the Java Development Kit and how to develop, debug, and run Java applications using the JDK. Continue to develop student's programming logic skills. Topics include: JAVA Language History, JAVA Variable Definitions, JAVA Control Structures, JAVA Methods, JAVA Classes, JAVA Objects, and JAVA Graphics. Contact hours: Class - 2, Lab - 5. Credit hours: 4. (E)

CIST 2372 Java Programming II (Prerequisite: CIST 2371)  
This course is an intermediate course in Java Programming. It is assumed that the student knows the Java syntax as well as basic object oriented concepts. The student will use classes and objects provided by the core Java API. They will use these classes to accomplish tasks such as Database access, File access, exception handling, running threads, using sockets to talk across a network, and remotely calling methods using RMI techniques. Contact hours: Class - 2, Lab - 5. Credit hours: 4. (F, Sp)

CIST 2373 Java Programming III  
(Prerequisite: CIST 2372) This course is a course in building Web Applications using Java Enterprise Edition (JEE). It is assumed that the student knows Java Standard Edition as the concepts and techniques build on that foundation. The student will install Web, Application and Database servers. The student will learn to build Web Applications using JEE technologies, such as Servlets, Java Server Pages and Enterprise JavaBeans. Contact hours: Class - 2, Lab - 5. Credit hours: 4. (F, Sp)

CIST 2381 Mobile Application Development  
(Prerequisite: CIST 1305) This course explores mobile guidelines, standards, and techniques. This course includes design and development techniques for multiple mobile devices, platforms, and operating systems. Students will develop mobile applications using state of practice development tools, languages and devices. Contact hours: Class - 2, Lab – 4. Credit hours: 4. (E)

CIST 2411 Microsoft Client  
(Corequisite: CIST 1401) Provides the ability to implement, administrator, and troubleshoot Windows Professional Client as a desktop operating system in any network environment. Contact hours: Class - 2, Lab – 4. Credit hours: 4. (E)

CIST 2412 Microsoft Server Directory Services  
(Prerequisite: CIST 2411) Provides students with knowledge and skills necessary to install, configure, manage, support and administer a Microsoft Directory Services. Contact hours: Class - 2, Lab - 4. Credit hours: 4. (E)

CIST 2413 Microsoft Server Infrastructure  
(Prerequisite: CIST 2412) Provides students with
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knowledge and skills necessary to install, configure, manage, support and administer a Microsoft Network Infrastructure. Contact hours: Class - 2, Lab - 4. Credit hours: 4. (E)

CIST 2414 Microsoft Server Administrator
(Prerequisite: CIST 2412) Provides students with advanced knowledge and skills necessary to install, configure, manage, support and administer Windows Server Services. Contact hours: Class - 2, Lab - 4. Credit hours: 4. (E)

CIST 2431 UNIX/Linux Introduction
(Corequisite: CIST 1401) This course introduces the UNIX/Linux operating system skills necessary to perform entry-level user functions. Topics include: history of UNIX/Linux, login and logout, the user environment, user password change, the file system, hierarchy tree, editors, file system commands as they relate to navigating the file system tree, UNIX/Linux manual help pages, using the UNIX/Linux graphical desktop, and command options. In addition, the student must be able to perform directory and file displaying, creation, deletion, redirection, copying, moving, linking files, wildcards, determining present working directory and changing directory locations. Contact hours: Class - 2, Lab - 4. Credit hours: 4. (E)

CIST 2432 UNIX/Linux Server
(Prerequisite: CIST 2431) This course covers UNIX/Linux operating system administration skills necessary to perform administrative functions. Topics include: installing UNIX/Linux, configuring and building a custom kernel, adding and removing software packages, managing run levels, managing users and groups, implementing security permissions, introduction to shell programming, managing and fixing the file system, managing memory and swap space, managing and scheduling jobs, managing system logs, understanding the boot process, system configuration files, file backup and restore, file compression, fault tolerance, and printing. Contact hours: Class - 2, Lab - 4. Credit hours: 4. (E)

CIST 2433 UNIX/Linux Advanced Server
(Prerequisite: CIST 2431) This course covers UNIX/Linux operating system advanced administration skills necessary to perform advanced administrative functions. Topics include: understanding UNIX/Linux networking, managing network printing, configuring and troubleshooting TCP/IP on UNIX/Linux, configuring DHCP, DNS, a Web server, an FTP server, an E-Mail server, and understanding NIS (yp) and NFS. Also, includes the following: understanding advanced security issues such as firewalls and NAT, using network commands, use of graphical system such as X Windows, sharing files and printers, and advanced shell programming. Contact hours: Class - 2, Lab - 4. Credit hours: 4. (E)

CIST 2434 UNIX/Linux Scripting
(Prerequisite: CIST 2431) Course covers UNIX/Linux shell programming techniques necessary for UNIX/Linux System Administrators to understand and create shell script programs in a UNIX/Linux environment. Topics include: shell variables, running shell script program, conditional processing, looping structures, arithmetic operators, logical operators such as AND, OR, and NOT, positional parameters and process variables, redirection, piping and standard error, use of backslash, quotes and back quotes. Contact hours: Class - 2, Lab - 4. Credit hours: 4. (E)

CIST 2451 Cisco Network Fundamentals
(Prerequisite: CIST 1401) This course provides students with classroom and laboratory experience in current and emerging network technology. Topics include basics of communication, converged networks, OSI and TCP/IP network models, Application layer protocols, services, and applications, Transport layer protocols and services, Network layer addressing and routing concepts, IPv4 and IPv6, calculating IPv4 subnets, Data Link layer and the encapsulation process, Physical layer components and data encoding, Ethernet and network protocol analysis, network cabling, and basic network configuration. Contact hours: Class - 2, Lab - 4. Credit hours: 4. (F, Sp)

CIST 2452 Cisco Routing Protocols and Concepts
(Prerequisite: CIST 2451) The goal is to develop an understanding of how a router learns about remote networks and determines the best path to those networks. Topics include basics of routing, static routing, dynamic routing, distance vector routing, distance vector routing protocols, VLSM and CIDR, routing table in-depth, link state routing, and link state routing protocols. This is a mini semester Term B course. Contact hours: Class - 2, Lab - 4. Credit hours: 4. (Sp, Su)

CIST 2453 Cisco LAN Switching and Wireless
(Prerequisite: CIST 2451) The goal is to develop an understanding of how switches are interconnected and configured to provide network access to LAN users. This course also teaches how to integrate wireless devices into a LAN. Topics include LAN design, basic switch concepts and configuration, VLAN concepts and configuration, VTP concepts and configuration, STP concepts and configuration, Inter-VLAN routing, and basic wireless concepts and configuration. This is a mini semester Term C course. Contact hours: Class - 2, Lab - 4. Credit hours: 4. (F, Sp)

CIST 2454 CISCO Accessing the WAN
(Prerequisite: CIST 2452, CIST 2453) Provides students with classroom and laboratory experience in current and emerging network technology. Topics include: introduction to WANs, WAN protocols, basic network security and ACLs, remote access, IP addressing services, and network troubleshooting. Contact hours: Class - 2, Lab - 4. Credit hours: 4. (F, Su)

CIST 2461 Data Center I
(Prerequisite: CIST 1001, Corequisite: CIST 1122) This course provides an overview of data center concepts. Topics include data center functions and terminology, site layout, power
distribution, cabling, virtualization, cloud computing
security and environmental concepts. Contact hours:
Class – 3, Lab – 0. Credit hours: 3. (F, Sp)

CIST 2463 Data Center II (Prerequisite: CIST 2461,
Corequisite: CIS 1401) This course provides an in-
depth overview of data center functions, installation/ removal procedures, preventive maintenance, security and troubleshooting techniques. Contact hours: Class - 2,
Lab - 4. Credit hours: 4. (Sp)

CIST 2510 Web Technologies (Prerequisite: CIST 1001, CIST 1510) In Web Technologies, students will investigate one or more software packages that help automate Web content creation. Students will explore and utilize various features of software packages such as CSS, multimedia incorporation, scripting technologies, form creation, search functionality, advanced image techniques and database connectivity. Contact hours: Class - 2, Lab - 2. Credit hours: 3. (E)

CIST 2531 Web Graphics II (Prerequisite: CIST 1530) Students will further explore how to use and industry standard or open source graphics software program to create Web ready images and Web pages. Topics include advanced image correction techniques and adjustments, typography and interpolation as well as conditional scripting statements and arrays. Contact hours: Class - 2, Lab - 2. Credit hours: 3. (E)

CIST 2550 Web Development II (Prerequisite: CIST 1220, CIST 1510, CIST 1520, CIST 2351) Web Development II teaches students how to manipulate data in a database using the Open Database Connectivity (ODBC) model. Students will learn to retrieve, update, and display database information with a web application. Database access may be accomplished using a web programming language (such as PHP, Microsoft VB, Microsoft C#, or Sun Java). Topics include manipulating data in a database, working with a relational database via Open Database Connectivity (ODBC), working with different database systems, developing forms and applications to interact with a database server(s), modifying data in a database, and controls and validation. Contact hours: Class - 2, Lab - 2. Credit hours: 3. (E)

CIST 2601 Implementing Operating Systems Security (Prerequisite: CIST 1601 and CIST 1401 or CIST 2451 or CIST 2431) This course will provide knowledge and the practical experience necessary to configure the most common server platforms. Lab exercises will provide students with experience of establishing operating systems security for the network environment. Contact hours: Class - 2, Lab - 4. Credit hours: 4. (E)

CIST 2602 Network Security (Prerequisite: CIST 1601 and CIST 1401 or CIST 2451 or CIST 2431) This course provides knowledge and the practical experience necessary to evaluate, implement and manage secure information transferred over computer networks. Topics include network security, intrusion detection, types of attacks, methods of attacks, security devices, basics of cryptography and organizational security elements. Contact hours: Class - 2, Lab - 4. Credit hours: 4. (E)

CIST 2611 Implementing Internet/Intranet Firewalls (Prerequisite: CIST 1601 and CIST 1401 or CIST 2451 or CIST 2431) Students will learn how to plan, design, install and configure firewalls that will allow key services while maintaining security. This will include protecting the Internal IP services, configuring a firewall for remote access and managing a firewall. Contact hours: Class - 2, Lab - 4. Credit hours: 4. (E)

CIST 2612 Computer Forensics (Prerequisite: CIST 1122, CIST 1601) This course examines the use of computers in the commission of crimes, collection, analysis and production of digital evidence. Students will use computer resources to explore basic computer forensic investigation techniques. Contact hours: Class - 2, Lab - 4. Credit hours: 4. (E)

CIST 2613 Ethical Hacking and Penetration Testing (Prerequisite: CIST 1601, CIST 2602) This course teaches students the skills needed to obtain entry-level security specialist jobs. It provides a hands-on introduction to ethical hacking, and penetration testing. It is for individuals who want to enhance their information security skill set and help meet the growing demand for security professionals. Topics include network and computer attacks, footprinting and social engineering, port scanning, enumeration, OS vulnerabilities, hacking web servers, hacking wireless networks, cryptography and network protection systems. Contact hours: -2, Lab – 4. Credit hours: 4. (E)

CIST 2740 Introduction to Game Development (Prerequisite: CIST 1001, CIST 1305) Introduction to video games genres, gaming evolution, gaming attributes, market environment, competition analysis, design document development, asset pipeline (development of game components), game mechanics (rules), technology architecture, platforms, story composition, interactive dialogue, statistical game balancing, project planning and prioritization for development schedules, creation of non-electronic rapid prototypes with emphasis on the student's first exposure to game creation and mechanics. Contact hours: Class - 2, Lab - 3. Credit hours: 4. (E)

CIST 2741 Advanced Game Development (Prerequisite: CIST 2740) Advanced Game Design incorporates all of the basic game design elements into a continuing production process, taking an idea from inception through completion in a timely and cost effective fashion. Each student will be expected to fulfill the duties of each member of a game design team, learning every aspect of the process in order to be able to substitute wherever and whenever necessary. It is suggested that the quality and completeness of a single, class-wide project have some universal impact on the grades of each student, further enforcing the notion that every team member not only participates in the project, but that the project itself affects in the
success of each team member. Lab will use industry tools to rapidly prototype ideas into practical game mechanics and provide the foundation for future game projects. Contact hours: Class - 1, Lab - 6. Credit hours: 3. (E)

CIST 2742 Beginning Python Programming (Prerequisite: CIST 1001, CIST 1305) Provides a study of the Python programming language to solve applications. Topics include: basic coding rules, input/output operations, arithmetic operations, debugging techniques, lists and arrays, sorting, editing input, basic search techniques, game simulations, game design and object-oriented programming (OOP). Contact hours: Class - 2, Lab - 4. Credit hours: 4. (E)

CIST 2743 Introduction to Game Physics (Prerequisite: CIST 2740, MATH 1111 or MATH 1113) Students will learn how to design, implement, and troubleshoot three-dimensional space in the mathematical sense, interpret and translate real world physics, and calculate the interaction between various objects with each other and their environment. Contact hours: Class - 1, Lab - 4. Credit hours: 3. (E)

CIST 2744 Advanced Game Physics (Prerequisite: CIST 2743, CIST 2362) Advanced Game Physics builds on the foundation of Basic Game Physics but brings it into the realm of multiplayer and massive multiplayer games. Calculating and tracking the physics required to host thousands of individual players, their effects on the environment, and the environments effects on them is the primary focus. This course demonstrates application of the theories of game development by taking an idea from the conceptual stage to completion. Lecture and labs allow students creative freedom with their implementations and design. Contact hours: Class - 1, Lab - 4. Credit hours: 3. (E)

CIST 2745 Introduction to Artificial Intelligence (Prerequisite: CIST 2741) Study in Basic Artificial Intelligence will teach students how to design, create, arrange, and maintain various models of Artificial Intelligence, from simulated thought and group mentalities to more complicated systems such as weather and broad relationship databases. Students can expect to learn how to develop individual intelligences by outlining their basic design, purpose, and interaction with others through both scripted dialogue and template/variable-based exchanges. Students will focus on high-level game programming concepts. Contact hours: Class - 2, Lab - 4. Credit hours: 4. (E)

CIST 2746 Advanced Artificial Intelligence for Gaming (Prerequisite: CIST 2745) A capstone course providing a realistic experience for students working in a team to develop a complete game systems project. Students will learn to weave relationship databases into complex tapestries of Artificial Intelligence interaction in hopes of achieving a state at which developer input is almost unnecessary to its perpetuation. Contact hours: Class - 1, Lab - 4. Credit hours: 3. (E)

CIST 2921 IT Analysis, Design, and Project Management (Prerequisite: Diploma level proficiency in English, reading and math) IT Analysis, Design, and Project Management will provide a review and application of systems life cycle development methodologies and project management. Topics include: Systems planning, systems analysis, systems design, systems implementation, evaluation, and project management. Contact hours: Class - 2, Lab - 5. Credit hours: 4. (E)

CIST 2931 Advanced Systems Project (Prerequisite: CIST 2362 and CIST 2372 and CIST 2921) A capstone course providing a realistic business experience for students working in a team to develop a complete systems project in a ten week period. Topics include: Project Management, Systems Design and Development, Software Development Methodologies, User Interface Design, File Maintenance Programming, Program Design, Systems Documentation, User Documentation, Presentation, and Demonstration. Contact hours: Class - 2, Lab - 5. Credit hours: 4. (F, Sp)

CIST 2950 Web Systems Project (Prerequisite: CIST 1520, CIST 2351; Prerequisite/Corequisite: CIST 2550) A capstone course providing a realistic experience for students working in a team to develop a complete web systems project. Contact hours: Class - 1, Lab - 4. Credit hours: 3. (E)

CIST 2991 CIST Internship I (Prerequisite: Program Director approval) Provides the instructor and student an opportunity to develop special learning environments. Instruction is delivered through occupational work experiences, practicums, advanced projects, industry sponsored workshops, seminars, or specialized and/or innovative learning arrangements. Students interested in registering for this class must attend the CIS Internship Orientation and obtain prior approval from their Program Directors. Contact hours: Class - 0, Lab - 9. Credit hours: 3. (Sp)

CMTT 2010 Residential Estimating Review (Prerequisite: Program Admission) This course introduces the complete estimating process from excavation to completed residence. Topics include the sequencing of construction, materials calculation, blueprint interpretation methods of construction, working with subcontractors, and final estimate assembly. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (F)

CMTT 2020 Construction Drafting I (Prerequisites: Program Admission) This course provides instruction in producing residential floor plans and elevations using computer-aided drafting and design software. Topics include system setup and system management, software menus and basic functions, prototype drawings, and two and three dimensional drafting and dimensioning. Contact hours: Class -1, Lab - 4. Credit hours: 3. (F)
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CMTT 2050 Residential Code Review (Prerequisite: Program Admission) This course covers building codes as they apply to typical residential applications. Topics include international residential codes, working with building inspectors, permits and inspections, and site visits. Contact hours: Class - 2, Lab - 2. Credit hours: 3. (Sp)

CMTT 2130 Computerized Construction Scheduling (Prerequisite: Program Admission) This course provides instruction in the use of application software for scheduling construction work. The use of contemporary construction scheduling and management software is emphasized. Topics include software overview, scheduling methods and requirements, and computerized scheduling of a simulated construction job. Contact hours: Class - 2, Lab - 2. Credit hours: 3. (Sp)

CMTT 2170 Construction Contracting (Prerequisite: Program Admission) This course provides an in depth study of the contractual relationship between the parties involved in building construction contracting. Topics include bonds, insurance, bidding, awarding, and subcontracting types and conditions. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (Sp)

COSM 1030 Haircutting (Prerequisite/Corequisite: COSM 1000; Program Admission; Diploma level proficiency in English, reading and math) Introduces the theory, and their treatments and the fundamental theory and practices of the cosmetology profession. Emphasis will be placed on professional practices and safety. Topics include: state rules, and regulations; state regulatory agency, image; bacteriology; decontamination and infection control, chemistry fundamentals, safety, Hazardous Duty Standards Act compliance, and anatomy and physiology. Contact hours: Class - 1, Lab – 4. Credit hours: 3. (E)

COSM 1010 Chemical Texture Services (Prerequisite: Program Admission; Diploma level proficiency in English, reading and math) Provides instruction in the chemistry and chemical reactions of permanent wave solutions and relaxers, application of permanent waves and relaxers. Precautions and special problems involved in applying permanent waves and relaxers will be emphasized. Topics include: permanent wave techniques, chemical relaxer techniques, chemistry, physical and chemical change, safety procedures, permanent wave and chemical relaxer application procedures, hair analysis, scalp analysis, permanent wave procedures (in an acceptable time frame), relaxer application (in an acceptable time frame), and Hazardous Duty Standards Act Compliance. Contact hours: Class - 1, Lab – 5. Credit hours: 3. (F,Sp)

COSM 1020 Hair Care and Treatment (Prerequisite: Program Admission; Diploma level proficiency in English, reading and math) Introduces the theory, procedures and products used in the care and treatment of the scalp and hair, disease and disorders and their treatments and the fundamental theory and skills required to shampoo, condition, and recondition the hair and scalp. Contact hours: Class - 1, Lab - 4. Credit hours: 3. (F, Sp)

COSM 1030 Haircutting (Prerequisite/Corequisite: COSM 1000; Program Admission; Diploma level proficiency in English, reading and math) This course covers the history of the communication discipline from ancient rhetorical roots through modern social sciences. The course emphasizes selected methods and practices in dyadic, small group, and oral presentational settings. Course content also covers communication models, as well as a survey of a variety of human communication modes and methods, including verbal, nonverbal, small group, interpersonal, mass, organizational, public, and intercultural communication. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (E)
proficiency in English, reading and math) Introduces the theory and skills necessary to apply haircutting techniques, advanced hairstyling techniques, proper safety and decontamination precautions, hair design elements, cutting implements, head, hair and body analysis, and client consultation. Contact hours: Class - 1, Lab - 6. Credit hours: 3. (T)

**COSM 1040 Styling** (Prerequisite/Corequisite: COSM 1000; Program Admission; Diploma level proficiency in English, reading and math) Introduces the fundamental theory and skills required to create shapings, pin curls, fingerwaves, roller placement, blow dry styling, thermal curling, thermal pressing, thermal waving, artificial hair and augmentation, and comb-outs. Laboratory training includes styling training on manikin. Topics include: braiding/intertwining hair, styling principles, pin curls, roller placement, fingerwaves, step waves, ridge curls, blow dry styling, thermal curling, thermal pressing, thermal waving, artificial hair and augmentation, comb-outs, and safety precautions. Contact hours: Class - 1, Lab - 5. Credit hours: 3. (T)

**COSM 1050 Hair Color** (Prerequisite/Corequisite: COSM 1000; Program Admission; Diploma level proficiency in English, reading and math) Introduces the theory and application of temporary, semipermanent, demipermanent-deposit only, and permanent hair coloring, hair lightening, and color removal products and application. Topics include: principles of color theory, hair structure, color, tone, classifications of color, hair lightening, color removal, application procedures, safety precautions, client consultation, product knowledge, haircolor challenges, corrective solutions, and special effects. Contact hours: Class - 1, Lab - 5. Credit hours: 3. (T)

**COSM 1060 Fundamentals of Skin Care** (Prerequisite/Corequisite: COSM 1000; Program Admission; Diploma level proficiency in English, reading and math) This course provides a comprehensive study in care of the skin for theory and practical application. Emphasis will be placed on client consultation, safety precautions, skin conditions, product knowledge, basic facials, facial massage, corrective facial treatments, hair removal, and make-up application. Other topics in this course include advanced skin treatments in electrotherapy, light therapy, galvanic current, high frequency, and microdermabrasion. Contact hours: Class - 1, Lab - 6. Credit hours: 3. (T)

**COSM 1070 Nail Care and Advanced Techniques** (Prerequisite/Corequisite: COSM 1000; Program Admission; Diploma level proficiency in English, reading and math) Provides training in manicuring, pedicure techniques, nail product, foot anatomy and physiology, diseases and disorders, mani-pedi techniques, nail protocol, nail product chemistry, safety precautions, and practices, and advanced nail techniques (wraps/tips/acrylics). Contact hours: Class - 1, Lab - 6. Credit hours: 3. (T)

**COSM 1080 Physical Hair Services Practicum** (Prerequisite: COSM 1000, COSM 1020, COSM 1030, COSM 1040; Corequisite: COSM 1050, COSM 1060, COSM 1070, COSM 1120) Provides laboratory experiences necessary for the development of skill levels required to be a competent cosmetologist. The allocation of time to the various phases of cosmetology is required by the Georgia State Board of Cosmetology. This course includes a portion of the required hours for licensure. Topics include: scalp and hair treatments; hairstyling; styling; dispensary; reception; safety precautions/decontamination; and Hazardous Duty Standards Act compliance. Contact hours: Class - 1, Lab - 6. Credit hours: 3. (T)

**COSM 1090 Hair Services Practicum I** (Prerequisite: COSM 1000, COSM 1010, COSM 1020, COSM 1030, COSM 1040, COSM 1050) This course provides laboratory experiences necessary for the development of skill levels required to be a competent cosmetologist. The allocation of time to the various phases of cosmetology is prescribed by the Georgia State Board of Cosmetology. This course includes a portion of the hours required for licensure. Topics include: permanent waving and relaxers; hair color, foil, lightening, hair and scalp treatments; hairstyling; clipper design, precision cutting, styling; dispensary; reception; safety precautions/decontamination; Hazardous Duty Standards Act compliance; product knowledge, customer service skills, client retention, State Board Rules and Regulations guidelines, and State Board foundation prep. Contact hours: Class - 1, Lab - 6. Credit hours: 3. (T)

**COSM 1100 Hair Services Practicum II** (Prerequisite: COSM 1000, COSM 1010, COSM 1020, COSM 1030, COSM 1040, COSM 1050). Provides experience necessary for professional development and completion of requirements for state licensure. Emphasis will be placed on the display of professional conduct and positive attitudes. The appropriate number of applications for completion of state board service credit requirements for this course may be met in a laboratory setting. Topics include: texture services; permanent waving and relaxers; haircolor and lightening; hair and scalp treatment; hairstyling; dispensary; reception; safety precautions/decontamination; and Hazardous Duty Standards Act compliance. Contact hours: Class - 1, Lab - 6. Credit hours: 3. (T)

**COSM 1110 Hair Services Practicum III** (Prerequisite: COSM 1000, COSM 1010, COSM 1020, COSM 1030, COSM 1040, COSM 1050, COSM 1060, COSM 1070). This course provides experience necessary for professional development and completion of requirements for state licensure. Emphasis will be placed on the display of professional conduct and positive attitudes. The requirements for this course may be met in a laboratory setting. Topics include: permanent waving and relaxers; hair color and lightening; hair and scalp treatments; hairstyling;
dispensary; styling; reception; safety precautions/decontamination; Hazardous Duty Standards Act compliance; and state licensure preparation. Contact hours: Class - 1, Lab - 6. Credit hours: 3. (T)

**COSM 1115 Hair Services Practicum IV** (Prerequisite: COSM 1000, COSM 1010, COSM 1020, COSM 1030, COSM 1040, COSM 1050, COSM 1060, COSM 1070). This course provides experience necessary for professional development and completion of requirements for state licensure. Emphasis will be placed on the display of professional conduct and positive attitudes. The requirements for this course may be met in a laboratory setting. Topics include: permanent waving and relaxers; hair color and lightening; hair and scalp treatments; haircuttering; dispensary; styling; reception; safety precautions/decontamination; Hazardous Duty Standards Act compliance; and state licensure preparation. Contact hours: Class - 0, Lab - 6. Credit hours: 3. (T)

**COSM 1120 Salon Management** (Prerequisite: COSM 1000) Emphasizes the steps involved in opening and operating a privately owned salon. Topics include: law requirements regarding employment, tax payer education / federal and state responsibilities, law requirements for owning and operating a salon business, business management practices, and public relations and career development. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (T)

**COSM 1125 Skin and Nail Care Practicum** (Prerequisite: COSM 1000; Corequisites: COSM 1060, COSM 1070) This course provides experience necessary for professional development and completion of requirements for state licensure. Emphasis will be placed on the display of professional conduct and positive attitudes. The appropriate number of applications for completion of state board service credit requirements for this course may be met in a laboratory setting. Topics include: skin treatment; dispensary; manicure/pedicure/advanced nail techniques; reception; safety precautions/decontamination; and Hazardous Duty Standards Act compliance. Contact hours: Class - 0, Lab - 6. Credit hours: 3. (T)

**CRJU 1010 Introduction to Criminal Justice** (Prerequisite: Diploma level proficiency in English and reading) Introduces the development and organization of the criminal justice system in the United States. Topics include: the American criminal justice system; constitutional limitations; organization of enforcement, adjudication, and corrections; and career opportunities and requirements. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (E)

**CRJU 1021 Private Security** (Prerequisite: Program Admission, Diploma level proficiency in English and reading) Provides an orientation to the development, philosophy, responsibility, and function of the private security industry. A historical and philosophical perspective of private security will help students better understand the present stage of private security, its principles, its legal authority and its effect on society in general. Topics include: private security: an overview; basic security goals and responsibilities; when prevention fails; and security systems at work: putting it all together. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (T)

**CRJU 1030 Corrections** (Prerequisite: Diploma level proficiency in English and reading) Provides an analysis of all phases of the American correctional system and practices, including its history, procedures, and objectives. Topics include: history and evolution of correctional facilities; legal and administrative problems; institutional facilities and procedures; probation, parole, and prerelease programs; alternative sentencing; rehabilitation; community involvement; and staffing. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (F, Sp)

**CRJU 1040 Principles of Law Enforcement** (Prerequisite: Diploma level proficiency in English and reading) This course examines the principles of the organization, administration, and duties of federal, state and local law enforcement agencies. Topics include: history and philosophy of law enforcement, evaluation of administrative practices, problems in American law enforcement agencies, emerging concepts, professionalism, and community crime prevention programs. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (F, Sp)

**CRJU 1043 Probation and Parole** (Prerequisite: Diploma level proficiency in English and reading) This course will cover the history of both juvenile and adult probation as well as the history of parole. The probation and parole systems will be covered generally with a special emphasis on the Georgia systems and related laws. Topics include: history and philosophy of probation and parole; function of the probation and parole systems; Georgia law related to probation and parole; characteristics and roles of probation and parole officers; and special issues and programs of probation and parole. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (T)

**CRJU 1050 Police Patrol Operations** (Prerequisite: Diploma level proficiency in English and reading) This course presents the knowledge and skills associated with police patrol operations. Emphasis is placed on patrol techniques, crimes in progress, crisis intervention, domestic disputes, Georgia Crime Information Center procedures, electronics communications and police reports. Topics include: foundations, policing skills and communication skills. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (T)

**CRJU 1052 Criminal Justice Administration** (Prerequisite: Diploma level proficiency in English and reading) This course explores the managerial aspects of effective and efficient criminal justice administration. Emphasis is directed towards increasing organizational skills and overcoming interdepartmental and inter-agency non-communication. Topics include:
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environmental management, human resources, and organizational concerns. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (T)

CRJU 1054 Police Officer Survival (Prerequisite: Diploma level proficiency in English and reading) This course examines the critical issues involved in the survival of a police officer in all aspects including their physical, mental, and psychological wellbeing. Emphasis is placed on personal protection skills, defensive tactics, handcuffing techniques, patrol tactics, vehicle stops, building searches and use of force. Contact hours: Class - 2, Lab - 2. Credit hours: 3. (T)

CRJU 1056 Police Traffic Control and Investigation (Prerequisite: Diploma level proficiency in English and reading) This course examines enforcement of traffic laws and procedures for traffic accident investigation. Emphasis is placed on Georgia traffic laws, traffic law enforcement, recognition of impaired driving, and traffic accident investigation. Topics include: regulations, impaired driving, and traffic accident investigation. Contact hours: Class - 2, Lab - 2. Credit hours: 3. (T)

CRJU 1062 Methods of Criminal Investigation (Prerequisite: Diploma level proficiency in English and reading) This course presents the fundamentals of criminal investigation. The duties and responsibilities of the investigator both in field and in the courtroom are highlighted. Emphasis is placed on techniques commonly utilized by investigative personnel as well as the procedures used for investigating various crimes. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (T)

CRJU 1063 Crime Scene Processing (Prerequisite: Diploma level proficiency in English and reading) This course presents students with practical exercises dealing with investigating crime scenes and gathering various forms of physical evidence. Emphasis is placed on crime scene assessment, search, fingerprinting, and evidence collection. Topics include: crime scene management, evidence characteristics, identification, documentation and collection as well as techniques for developing and lifting latent fingerprints. Contact hours: Class - 1, Lab - 4. Credit hours: 3. (T)

CRJU 1065 Community-Oriented Policing (Prerequisite: Diploma level proficiency in English and reading) Presents the fundamentals for the community-oriented policing philosophy, including the comparison of traditional and community policing philosophies; law enforcement and community relationships; importance of political and public support and involvement; attitudinal changes involving the roles of police management, supervisors and line personnel; creation of partnerships with community organizations, businesses, private security, other governmental agencies, and special interest groups; and police problem-solving methodologies. Topics include: foundations of community-oriented policing, partnerships and problem-solving in community-oriented policing, and community-oriented policing projects and programs. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (T)

CRJU 1068 Criminal Law for Criminal Justice (Prerequisite: Diploma level proficiency in English and reading; Prerequisite/Corequisite: CRJU 1010) This course introduces criminal law in the United States, but emphasizes the current specific status of Georgia criminal law. The course will focus on the most current statutory contents of the Official Code of Georgia Annotated (O.C.G.A.) with primary emphasis on the criminal and traffic codes. Topics include: historic development of criminal law in the United States; statutory law, Georgia Code (O.C.G.A.) Title 16 - Crimes and Offenses; statutory law, Georgia Code (O.C.G.A.) Title 40 - Motor Vehicle and Traffic Offenses; and Supreme Court rulings that apply to criminal law. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (F, Sp)

CRJU 1072 Introduction to Forensic Science (Prerequisite: Diploma level proficiency in English and reading) The origin, history and role of forensic science in the investigative process. Philosophical, rational and practical framework that supports a case investigation will be outlined. The unifying principles of forensic science, the rooting of forensic science in the pure sciences, and the unique ways in which a forensic scientist must think will also be discussed. The special areas of forensic science will be explored. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (T)

CRJU 1074 Applications in Introductory Forensics (Prerequisite: Diploma level proficiency in English and reading) This course complements CRJU 1072: Introduction to Forensics, focusing particularly on the practical application of forensic science in law enforcement including the following: crime scene investigation; interview and interrogation techniques; as well as case preparation and courtroom testimony. Contact hours: Class - 1, Lab - 4. Credit hours: 3. (T)

CRJU 1075 Report Writing (Prerequisite: Diploma level proficiency in English and reading) Explains and demonstrates the effectiveness of the entire criminal investigation process by the quality of notes reports, and accurate documentation. An examination of what goes into the preparation, content, elements, mechanics, and format of documenting the criminal investigation process. Topics include: Field notes, initial information, observations, evidence, victims, witnesses, property, neighborhood canvass, crime scene, laboratory analysis and results, investigative follow-up, suspect statements, and the characteristics essential to quality report writing. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (T)

CRJU 1400 Ethics and Cultural Perspectives for Criminal Justice (Prerequisite: Diploma level proficiency in English and reading) This course provides an exploration ethics and cultural perspectives in criminal justice. In presenting ethics, both the individual perspective and the organizational standpoint
will be examined. Four areas of ethical decision making opportunities are studied including: law enforcement ethics; correctional ethics; legal profession ethics; and policymaking ethics. The presentation of cultural perspectives is designed to aid law enforcement officers to better understand and communicate with members of other cultures with whom they come in contact in the line of duty. Topics include: defining and applying terms related to intercultural attitudes, role-play activities related to intercultural understanding, developing interpersonal/intercultural communication competence, and development of personal intercultural growth plan. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (F, Sp)

CRJU 2020 Constitutional Law for Criminal Justice (Prerequisite: Diploma level proficiency in English and reading; Prerequisite/Corequisite: CRJU 1010) This course emphasizes those provisions of the Bill of Rights which pertain to criminal justice. Topics include: characteristics and powers of the three branches of government; principles governing the operation of the U.S. Constitution, the Bill of Rights and the Fourteenth Amendment. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (F, Sp)

CRJU 2050 Criminal Procedure (Prerequisite: Diploma level proficiency in English and reading; Prerequisite/Corequisite: CRJU 1010) Introduces the procedural law of the criminal justice system which governs the series of proceedings through which government enforces substantive criminal law. The course offers an emphasis on the laws of arrest and search and seizure; the rules of evidence, right to counsel, and the rights and duties of both citizens and officers. The course covers in depth appropriate Case Law and court rulings that dictate criminal procedure on the State and Federal Level. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (F, Sp)

CRJU 2060 Criminology (Prerequisite: Diploma level proficiency in English and reading; CRJU 1010) Introduces the nature, extent, and factors related to criminal behavior, and the etiology of criminal offenses and offenders. Topics include: sociological, psychological, and biological causes of crime; effectiveness of theories in explaining crime; theory integration; and application of theory to selected issues. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (T)

CRJU 2070 Juvenile Justice (Prerequisite: Diploma level proficiency in English and reading; Prerequisite/Corequisite: CRJU 1010) Analyzes the nature, extent, and causes of juvenile delinquency, and examines processes in the field of juvenile justice. Topics include: survey of juvenile law, comparative analysis of adult and juvenile justice systems, and prevention and treatment of juvenile delinquency. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (E)

CRJU 2090 Criminal Justice Practicum (Prerequisite: Program Admission, Diploma level proficiency in English and reading, Program Director approval) Provides experiences necessary for further professional development and exposure to related agencies in the criminal justice field. The student will pursue a professional research project supervised by the instructor. Topics include: criminal justice theory applications. Contact hours: Class - 0, Lab - 9. Credit hours: 3. (E)

CRJU 2100 Criminal Justice Externship (Prerequisite: Program Admission, Diploma level proficiency in English and reading, Program Director approval) Provides experiences necessary for further professional development and exposure to related agencies in the criminal justice field. The student will pursue an externship in a related agency supervised by the instructor. Topics include: criminal justice theory applications. Contact hours: Class - 0, Lab - 9. Credit hours: 3. (E)

CRJU 2110 Homeland Security (Prerequisite: Diploma level proficiency in English and reading) The course provides an introduction to the principles of homeland security, roles and responsibilities of constituencies and implications for criminal justice fields. Topics include: intelligence and warning, border transportation security, domestic counterterrorism, protecting critical infrastructure, defending against catastrophic threats, and emergency preparedness and response. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (T)

CRJU 2150 Cybercrime Investigations (Prerequisite: CRJU 1010, CRJU 2050) This course is designed to develop a working knowledge if the investigative steps to be followed in a cybercrime investigation, beginning with initial crime scene security and concluding with proper testimony and presentation of evidence in court. The course includes study designed to reinforce important investigative and forensic evidence collection skills. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (T)

CRJU 2201 Criminal Courts (Prerequisite: Diploma level proficiency in English and reading) This course examines the historical context on the development, functions, and controversies in the courts system. Topics include: introduction to the courts; participants of a trial; courtroom processes; and the post-conviction process. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (T)

CRJU 2510 Introduction to Firearms Training (Prerequisite: Program Admission; Diploma level proficiency in English and Reading) This course provides the student with an understanding of terminology, legal requirements, liability, safety considerations, tactics, procedures, firearms nomenclature, fundamentals of marksmanship,
fundamental simulation in the use of deadly force and the opportunity to demonstrate proficiency in marksmanship. This course is not intended to replace firearms training required in a GA POST certified academy, nor is it a substitution for the required firearms training conducted in GA POST certified academies. Contact hours: Class - 1, Lab - 4. Credit hours: 3. (T)

**CSSP Central Sterile Supply Processing Technician**

(Prerequisite: Program Admission) This course provides an overview of the Central Sterile Processing and Distribution profession and develops the fundamental concepts and principles necessary to successfully participate as an entry level Central Sterile Processing Technician. Emphasis will be placed on the profession of Central Sterile Processing, basic sciences and related subjects, infection control, aseptic technique, equipment management, sterilization, instrumentation and supplies, legal issues, inventory management, safety, quality assurance, professional development and healthcare trends. Students completing this course will be eligible to apply to take the International Association of Healthcare Central Service Materiel Management (IAHCSMM) certification exam. Contact hours: Class – 3, Lab – 4. Credit hours: 5 (E)

**CSSP Central Sterile Supply Processing Technician Practicum I**

(Prerequisite: Program Admission) This course complements CSSP 1010 Central Sterile Supply Processing Technician, and together with CSSP 1022 Central Sterile Processing Supply Practicum II, providing the practical hours necessary to meet the International Association of Healthcare Central Service Materiel Management (IAHCSMM) requirements to sit for the certification examination. Contact hours: Class – 0, Lab – 15. Credit hours: 6 (E)

**CSSP Central Sterile Supply Processing Technician Practicum II**

(Prerequisite: Program Admission) This course complements CSSP 1010 Central Sterile Supply Processing Technician, and together with CSSP 1022 Central Sterile Processing Supply Practicum II, providing the practical hours necessary to meet the International Association of Healthcare Central Service Materiel Management (IAHCSMM) requirements to sit for the certification examination. Contact hours: Class – 0, Lab – 15. Credit hours: 5 (E)

**CUUL 1100 Fundamentals of Culinary Arts**

(Prerequisite: Provisional Admission, Prerequisite/ Corequisite: If diploma MATH 1012 or degree level math) Provides an overview of the professionalism in culinary arts, culinary career opportunities, Chef history, pride, and espirit d corps. Introduces principles and practices necessary to food, supply, and equipment selection, procurement, receiving, storage, and distribution. Topics include: cuisine, food service organizations, career opportunities, food service styles, basic culinary management techniques, professionalism, culinary work ethics, quality factors, food tests, pricing procedures, cost determination and control, selection, procurement, receiving, storage, and distribution. Laboratory demonstration and student experimentation parallel class work. Contact hours: Class - 3, Lab - 2. Credit hours: 4. (F, Sp)

**CUUL 1110 Culinary Safety and Sanitation**

(Prerequisite: Provisional Admission) Emphasizes fundamental kitchen and dining room safety, sanitation, maintenance, and operation procedures. Topics include: cleaning standards, O.S.H.A. M.S.D.S. guidelines, sanitary procedures following SERV-SAFE guidelines, HACCP, safety practices, basic kitchen first aid, operation of equipment, cleaning and maintenance of equipment, dishwashing, and pot and pan cleaning. Laboratory practice parallels class work. Contact hours: Class - 1, Lab - 3. Credit hours: 2. (F, Sp)

**CUUL 1120 Principles of Cooking**

(Prerequisite/ Corequisite: CUUL 1110, students must be 18 years old) This course introduces fundamental food preparation terms, concepts, and methods. Course content reflects American Culinary Federation Educational Institute apprenticeship training objectives. Topics include: weights and measures, conversions, basic cooking principles, methods of food preparation, recipe utilization, and nutrition. Laboratory demonstrations and student experimentation parallel class work. Contact hours: Class - 2, Lab - 10. Credit hours: 6. (F, Sp)

**CUUL 1129 Fundamentals of Restaurant Operations**

(Prerequisite: CUUL 1120, students must be 18 years old) Introduces the fundamentals of dining and beverage service and experience in preparation of a wide variety of quantity foods. Course content reflects American Culinary Federation Education Institute apprenticeship training objectives. Topics include: dining service/guest service, dining service positions and functions, international dining services, restaurant business laws, preparation and setup, table side service, and beverage service and setup, kitchen operational procedures, equipment use, banquet planning, recipe conversion, food decorating, safety and sanitation, and production of quantity food. Laboratory practice parallels class work. Contact hours: Class - 2, Lab - 5. Credit hours: 4. (F, Sp)

**CUUL 1220 Baking Principles**

(Prerequisite: CUUL 1120, CUUL 1110, students must be 18 years old) Baking Principles presents the fundamental terms, concepts, and methods involved in preparation of yeast and quick breads and baked products. Emphasis is placed on conformance of sanitation and hygienic work habits with health laws. Course content reflects American Culinary Federation Educational Institute cook and pastry apprenticeship training objectives, along with Retail Bakery Association training program. Topics include: baking principles; Science and use of baking ingredients for breads, desserts, cakes, pastries; weights, measures, and conversions; preparation of baked goods, baking sanitation and hygiene, baking supplies and equipment. Laboratory demonstrations and student experimentation parallel class work. Contact hours: Class - 2, Lab - 7. Credit hours: 5. (F, Sp)
CUUL 1320 Garde Manger (Prerequisites: CUUL 1120, CUUL 1110, students must be 18 years old) Introduces basic pantry manger principles, utilization, preparation, and integration into other kitchen operations. Course content reflects American Culinary Federation Educational Institute apprenticeship pantry, garnishing, and presentation training objectives. Topics include: pantry functions; garnishes, carving, and decorating; buffet presentation; cold preparations; hot/cold sandwiches; salads, dressings and relishes; breakfast preparation; hot/cold hors d’oeuvres; chaudfroids, gelee, and molds; and pats and terrines. Laboratory practice parallels class work. Contact hours: Class - 1, Lab -- 8. Credit hours: 4. (F, Sp)

CUUL 1370 Culinary Nutrition and Menu Development (Prerequisite: CUUL 1120) This course emphasizes menu planning for all types of facilities, services, and special diets. Topics include: menu selection, menu development and pricing, nutrition, special diets, cooking nutritional foods, and organics. Laboratory demonstrations and student management and supervision parallel class work. Contact hours: Class – 1, Lab – 5. Credit hours: 3. (E)

CUUL 2130 Culinary Practicum (Prerequisites: CUUL 1220 & CUUL 1320) This course familiarizes the student with the principles and methods of sound leadership and decision making in the hospitality industry and provides the student with the opportunity to gain management/supervision experience in an actual job setting. Students will be placed in an appropriate restaurant, catering, or other food service business for four days per week throughout the quarter. On-the-job training topics include: restaurant management/on-off premise catering/food service business, supervisory training, and management training, on-off premise catering, hotel kitchen organization, kitchen management, restaurant kitchen systems, institutional food systems, kitchen departmental responsibilities, and kitchen productivity. Topics include: basic leadership principles and how to use them to solicit cooperation, use of leadership to develop the best possible senior-subordinate relationships, the various decision making processes, the ability to make sound and timely decisions, leadership within the framework of the major functions of management, and delegation of authority and responsibility in the hospitality industry. Contact hours: Class - 2, Lab - 10. Credit hours: 6. (T)

DENA 1030 Preventive Dentistry (Prerequisite/Corequisite: DENA 1080, DENA 1340) Introduce students to the area of preventive and public health dentistry. Topics include: etiology of dental disease; patient education techniques; plaque control techniques; types and use of fluoride; diet analysis for caries control; and dietary considerations for the dental patient. Contact hours: Class - 1, Lab - 2. Credit hours: 2. (F)

DENA 1050 Microbiology and Infection Control (Prerequisites: Program Admission) Introduces fundamental microbiology and infection control techniques. Topics include: classification, structure, and behavior of pathogenic microbes; mode of disease transmission; body’s defense and immunity; infectious diseases; and infection control procedures in accordance with CDC recommendations and OSHA guidelines. Contact hours: Class – 2, Lab - 2. Credit hours: 3. (Su)

DENA 1070 Oral Pathology and Therapeutics (Prerequisite: ALHS 1011; Prerequisite/Corequisite: DENA 1080) Focuses on the diseases affecting the oral cavity and pharmacology as it relates to dentistry. Topics include: identification and disease process; signs/symptoms of oral diseases and systemic diseases with oral manifestations; developmental
abnormalities of oral tissues; basic principle of pharmacology; drugs prescribed by the dental profession; drugs that may contraindicate treatment; and applied pharmacology regulations, dosage, and applications. Contact hours: Class - 2, Lab - 0. Credit hours: 2. (Su)

**DENA 1080 Dental Anatomy** (Prerequisite: Program Admission) Focuses on normal head and neck anatomy and the development and functions of oral anatomy. Topics include: dental anatomy; oral histology; oral embryology; osteology of the skull; muscles of mastication and facial expression; temporomandibular joint; blood lymphatic nerve supply of the head; and salivary glands and related structures. Contact hours: Class -5, Lab - 0. Credit hours: 5. (Su)

**DENA 1090 Dental Assisting National Board Examination Preparation** (Prerequisite: Program Director Approval) Reviews information concerning all didactic areas tested by the Dental Assisting National Board (DANB). Topics include: collecting and recording clinical data; dental radiography; chairside dental procedures; prevention of disease transmission; patient education and oral health management; office management procedures; and test taking skills. Contact hours: Class - 2, Lab - 0. Credit hours: 1. (Sp)

**DENA 1340 Dental Assisting I: General Chairside** (Prerequisite: Program Admission; Prerequisite/Corequisite: DENA 1050; DENA 1080) Introduces student to ethics and jurisprudence for the dental assistant and to chairside assisting with diagnostic and operative procedures. Topics include: ethics and jurisprudence in the dental office; medically compromised patients and management of dental office emergencies; four-handed dentistry techniques; clinical data collection techniques; introduction to operative dentistry; and dental material basics. Contact hours: Class - 3, Lab - 6. Credit hours: 6. (F)

**DENA 1350 Dental Assisting II: Dental Specialties and EFDA Skills** (Prerequisite: DENA 1340) Focuses on chairside assisting with dental specialty procedures. Topics include: prosthodontic procedures (fixed and removable); orthodontics; pediatric dentistry; periodontic procedures; oral and maxillofacial surgery procedures; endodontics procedures; and expanded functions approved by law for performance by dental assistants in the state of Georgia. Student will pass a comprehensive examination and successfully perform all required clinical skills to receive EFDA certification. Contact hours: Class - 4, Lab - 6. Credit hours: 7. (Sp)

**DENA 1390 Dental Radiology** (Prerequisites: DENA 1080) After completion of the course the student will be able to provide radiation safety for patient and self, expose x-rays, process x-rays, and prepare dental images for the dental office. Topics include: fundamentals of radiology and radiation safety; radiographic anatomy and interpretation; intraoral and extraoral radiographic techniques; and quality assurance techniques. Contact hours: Class - 3, Lab - 2. Credit hours: 4. (F)

**DENA 1400 Dental Practice Management** (Prerequisite: DENA 1340) Emphasizes procedures for office management in dental practices. Topics include: oral and written communication; records management; appointment control; dental insurance form preparation; accounting procedures; supply and inventory control; employability skills and basic computer skills. A computer lab provides basic skills in computer use and utilization of these skills to perform office procedures on a microcomputer. Contact hours: Class - 2, Lab - 2. Credit hours: 2. (Sp)

**DENA 1460 Dental Practicum I** (Prerequisite/Corequisite: DENA 1050, DENA 1340, DENA 1390) Practicum focuses on infection control in the dental office and assisting with diagnostic and simple operative procedures. Topics include: infection control procedures, clinical diagnostic procedures and general dentistry procedures. Contact hours: Class - 0, Lab - 3. Credit hours: 1. (F)

**DENA 1470 Dental Practicum II** (Prerequisite/Corequisite: DENA 1460) Practicum focuses on advanced general dentistry procedures and chairside in dental specialties with special emphasis on nonsurgical specialties. Topics include: advanced general dentistry and specialties. Contact hours: Class - 0, Lab - 3. Credit hours: 1. (Sp)

**DENA 1480 Dental Practicum III** (Prerequisite/Corequisite: DENA 1460; DENA 1470) Practicum continues to focus on assisting chairside with advanced general dentistry procedures with emphasis on dental office management, preventive dentistry, and expanded functions. Topics include: advanced general dentistry procedures; preventive dentistry; dental office management; expanded functions; chairside in specialties; and management of dental office emergencies. Contact hours: Class - 0, Lab - 15. Credit hours: 5. (Sp)

**DFTG 1101 CAD Fundamentals** (Prerequisite: Program Admission; Diploma level proficiency English, reading and Math) Establishes safety practices as they relate to a drafting environment. Introduces basic CAD functions while presenting essential principles and practices for line relationships, scale, and geometric construction. Contact hours: Class - 2, Lab - 4. Credit hours: 4. (F)

**DFTG 1103 Multiview/Basic Dimensioning** (Prerequisite: Program Admission; Prerequisite/Corequisite: DFTG 1101) Technical Drawing I provides multiview and pictorial sketching, orthographic drawing and fundamental dimensioning methods necessary to develop 2D and 3D views that completely describe machine parts for manufacture using intermediate CAD software techniques. Contact hours: Class - 2, Lab - 4. Credit hours: 4. (F)

**DFTG 1105 3D Mechanical Modeling** (Prerequisite: Program Admission; Prerequisite/Corequisite: DFTG 1101, DFTG 1103) In the 3D Mechanical Modeling course, the student becomes acquainted with concepts
of the software related to Parametric modeling for mechanical drafting. The student will develop the skills necessary to create 3D models and presentation/working drawings. Contact hours: Class - 2, Lab - 4. Credit hours: 4. (F)

DFTG 1107 Advanced Dimensioning/Sectional Views (Prerequisite: Program Admission; DFTG 1103, Corequisite: DFTG 1105 or DFTG 1127) Advanced Dimensioning/Sectional Views continues dimensioning skill development and introduces tools for precision measurement and sectional views. Contact hours: Class – 2, Lab – 4. Credit hours: 4. (F)

DFTG 1109 Auxiliary Views/Surface Development (Prerequisite: Program Admission; DFTG 1105) Introduces techniques necessary for auxiliary view drawings, surface development, and developing sheet metal parts. Topics include: primary auxiliary views, secondary auxiliary views, surface development, and developing sheet metal parts. Contact hours: Class - 2, Lab - 4. Credit hours: 4. (F)

DFTG 1111 Fasteners (Prerequisite: Program Admission; DFTG 1105) This course covers the basics of identifying fastening techniques, interpreting technical data, and create working drawings. Topics include utilization of technical data, identifying thread types, graphic representation of threaded fasteners, utilization of other fastening techniques, welding symbol identification, and welding symbol usage in working drawings. Contact hours: Class - 2, Lab - 4. Credit hours: 4. (F)

DFTG 1113 Assembly Drawings (Prerequisite: Program Admission; Corequisite: DFTG 1111 and MATH 1013 or MATH 1111) Technical Drawing V provides knowledge and skills necessary to create working drawings for the manufacture of machine parts. Topics include: detail drawings, orthographic assembly drawings, pictorial assembly drawings, and utilization of technical reference source. Contact hours: Class - 2, Lab - 4. Credit hours: 4. (F)

DFTG 1125 Architectural Fundamentals (Prerequisite: Program Admission; Diploma level proficiency in English, reading and math; Corequisite: DFTG 1103) Introduces architectural fundamental principles and practices associated with architectural styles and drawing. Fundamentals residential and commercial practices will be covered. Topics include: specifications and materials; architectural styles, construction drawing practices and procedures, dimensioning and scales. Contact hours: Class - 2, Lab - 4. Credit hours: 4. (F)

DFTG 1127 Architectural 3D Modeling (Prerequisite: Program Admission; Prerequisite/Corequisite: DFTG 1103) In the Architectural 3D Modeling course, the student becomes acquainted with concepts of the software related to Parametric modeling for Architectural drafting. The student will develop the skills necessary to create 3D models and presentation/constructing drawings. Contact hours: Class - 2, Lab - 4. Credit hours: 4. (F)

DFTG 1129 Residential Drawing I (Prerequisite: Program Admission; DFTG 1127; Corequisite: DFTG 1125) Introduces the essential skills necessary for assessing the expected materials, labor requirements and costs for given structures or products also students will be introduce to architectural drafting skills necessary to produce a basic set of construction drawings given floor plan information. Topics include: material take-offs; footing and foundation; floor plans; exterior elevations; site plans; and construction drawing techniques/practices. Contact hours: Class - 2, Lab - 4. Credit hours: 4. (F)

DFTG 1131 Residential Drawing II (Prerequisite: Program Admission; DFTG 1129; Corequisite: DFTG 1127, MATH 1013 or MATH 1111) Continues in-depth architectural drawing practice and develops architectural design skills. Plans are designed to meet applicable codes. Topics include: material take-offs; footing and foundation; floor plans; exterior elevations; site plans; and construction drawing techniques/practices. Contact hours: Class - 2, Lab - 4. Credit hours: 4. (F)

DFTG 1133 Commercial Drawing I (Prerequisite: Program Admission, DFTG 1125; Corequisite: DFTG 1127, DFTG 1131, MATH 1013 or MATH 1111) Introduces commercial drafting skills necessary to produce construction drawings given floor plan information. Topics include: structural steel detailing, reflected ceiling plans, rebar detailing, and commercial construction drawings. Contact hours: Class - 2, Lab - 4. Credit hours: 4. (F)

DFTG 2010 Engineering Graphics (Prerequisite: Program Admission) Covers the basics of computer terminology, input and output devices, file formatting, file management, for CAD software. Introduces students to the fundamentals of geometric construction, scale reading line relationship and basic history of the drafting concepts. Student will also be introduced to basic and intermediate CAD commands and procedures, and drafting concepts and principals. Contact hours: Class – 1.33, Lab - 5.33 Credit hours: 4. (Sp)

DFTG 2020 Visualization and Graphics (Prerequisite: Program Admission; DFTG 1105 & 1127) This course is an introduction to engineering graphics and component visualization. Sketching, line drawing, computer assisted drafting solid modeling including parametric modeling are practiced. Development of working drawings and requirements for drawing in a manufacturing and rapid pro-type environment are emphasized. Contact hours: Class – 1.07, Lab – 5.80. Credit hours: 3. (F)

DFTG 2030 Advanced 3D Modeling Architectural (Prerequisite/Corequisite: Program Admission; DFTG 1127) In this course students become acquainted with concepts of the software related to Presentations for Architectural Renderings and Architectural Animations. Students will demonstrate skills in texture applications,
camera angles for presentations, lighting and shadow techniques for architectural renderings, and animation techniques for architectural presentations. Contact hours: Class - 1, Lab – 6. Credit hours: 4. (F)

DFTG 2040 Advanced 3D Modeling Mechanical (Prerequisite: Program Admission; Corequisite: DFTG 1105) In this course the student becomes acquainted with concepts of the software related to Sheet Metal modeling for mechanical drafting, multi-body parts assemblies, and basic animation techniques for mechanical assembly presentations. Contact hours: Class - 1, Lab – 6. Credit hours: 4. (F)

DFTG 2110 Print Reading I (Prerequisite: Program Admission) Introduces the fundamental principles and practices associated with interpreting technical drawings. Topics include: interpretation of blueprints and sketching. Contact hours: Class - .67, Lab – 2.67. Credit hours: 3. (F)

DFTG 2120 Print Reading for Architecture (Prerequisite: Program Admission) This course emphasizes skills in reading, producing and interpreting construction drawings. Topics include reading and measuring plans, identifying and understanding lines, symbols, dimensions, materials, schedules, and specifications. Contact hours: Class - 1, Lab - 4. Credit hours: 3. (F)

DFTG 2300 Drafting Technology Practicum/Internship 3 (Prerequisite: DFTG 1105 or DFTG 1127; Program Admission) Provides an approved industry-like setting where the student develops and sharpens skills. Emphasis is placed on production standards achievement and quality control. Contact hours: Class - 0, Lab - 9. Credit hours: 3. (F)

DFTG 2400 Drafting Technology Practicum/Internship 4 (Prerequisite: DFTG 1105 or DFTG 1127) Provides an approved industry-like setting where the student develops and sharpens skills. Emphasis is placed on production standards achievement and quality control. Contact hours: Class - 0, Lab - 12. Credit hours: 4. (F)

DFTG 2500 Drafting Technology Exit Review (Prerequisite: DFTG 1105 or DFTG 1127) Emphasis is placed on students’ production of portfolio-quality pieces. Focuses on the preparation for entry into the job market. Contact hours: Class - 0, Lab - 9. Credit hours: 3. (F)

DFTG 2600 Drafting Technology Practicum/Internship 6 (Prerequisite: DFTG 1105 or DFTG 1127) Provides an approved industry-like setting where the student develops and sharpens skills. Emphasis is placed on production standards achievement and quality control. Contact hours: Class - 0, Lab - 18. Credit hours: 6. (F)

DIET 1000 Introduction to Diesel Technology, Tools and Safety (Prerequisite: Provisional Admission) This course introduces basic knowledge and skills the student must have to succeed in the Diesel Equipment Technology field. Topics include an overview of diesel powered vehicles, diesel technology safety skills, basic tools and equipment, reference materials, measuring instruments, shop operation, mechanical fasteners, welding safety, and basic welding skills. Classroom and lab experiences on safety, precision measuring, and basic shop practices are highly emphasized. Contact hours: Class – 2.21, Lab – 8.99. Credit hours: 6. (T)
DIET 2011 Off Road Drivelines (Prerequisite: DIET 1000, DIET 1010) This course introduces power trains used on heavy equipment such as bulldozers, excavators, wheel loaders, back-hoe loaders and skidders. Classroom and lab instruction on components and systems with use and interpreting testing and diagnosing equipment are highly emphasized. Topics include: power train theory and principles, clutches, manual transmissions, drive shafts, differentials, final drives, special drives, final drive failure analysis, torque converters, hydraulically shifted transmissions, electronic transmissions, hydrostatic transmissions, and transmission failure analysis. Contact hours: Class – 2.76, Lab – 8.13. Credit hours: 6. (Sp)

DIST 1001 Directed Independent Study (Prerequisite: Program Director Approval) This course allows students to complete program projects or engage in other student led lab practice required to complete course competencies in their selected program of study. Contact hours: Class – 0, Lab – 3. Credit hours: 1.

DIST 1002 Directed Independent Study (Prerequisite: Program Director Approval) This course allows students to complete program projects or engage in other student led lab practice required to complete course competencies in their selected program of study. Contact hours: Class – 0, Lab – 6. Credit hours: 2.

DIST 1003 Directed Independent Study (Prerequisite: Program Director Approval) This course allows students to complete program projects or engage in other student led lab practice required to complete course competencies in their selected program of study. Contact hours: Class – 0, Lab – 9. Credit hours: 3.

DIST 1004 Directed Independent Study (Prerequisite: Program Director Approval) This course allows students to complete program projects or engage in other student led lab practice required to complete course competencies in their selected program of study. Contact hours: Class – 0, Lab – 12. Credit hours: 4.

DMSO 1010 Foundations of Sonography (Prerequisite: Program Admission) Using classroom didactic instruction and laboratory experiences, this foundations course prepares students for the role of a sonographer. The course provides a base of knowledge and experiences from which complementary and subsequent courses build on. Topics include diagnostic medical sonography history; medical ethics and law; patient privacy and confidentiality; body mechanics, lifts and transfers; patient assessment and administration of care; transducer care; response to medical emergencies; professionalism; medical and sonographic terminology; cultural competence; ergonomics; work related musculoskeletal disorders; basic sonographic physical principles and system operation; Maslow’s Hierarchy of Needs, and sonographic scanning techniques. Student laboratory scanning hours are included in this course. Contact hours: Class - 1, Lab - 4. Credit hours: 3. (F)

DMSO 1020 Sectional Anatomy and Normal Sonographic Appearance (Prerequisite: Program Admission) This course combines the didactic education of sectional anatomy with active student participation in classroom laboratory experience. Information is weighted toward normal structures which are sonographically visible. Structures are described according to relative location and proportionality. Topics include: normal sectional anatomy of the neck, liver, biliary system, pancreas, genitourinary tract, spleen, peritoneal cavity, retroperitoneum, gastrointestinal tract, and vascular system structures within the upper and lower extremity; anatomic planes related to sonographic images; sonographic appearance and sonographic patterns of structures in the female and male pelvis, neck, liver, biliary system, pancreas, peritoneum and retroperitoneum, gastrointestinal tract, non-cardiac chest, and upper and lower extremities; and related imaging, laboratory testing procedures and functional testing procedures. Student laboratory scanning hours are included in this course. Class - 1, Lab - 4. Credit hours: 3. (F)

DMSO 1040 Sonographic Physics and Instrumentation (Prerequisite: Program Admission) Sonographers apply principles of ultrasound in the operation of medical sonographic equipment to produce a sonogram. Knowledge of the interaction of ultrasound with tissue is important for image optimization, acquisition and interpretation of sonographic images, and critical to the accurate diagnosis of disease. Introduces concepts for the factors involved with diagnostic ultrasound principles and instruments. Emphasis will be placed on ultrasound physics, transducer construction, operation and characteristics, artifacts and adjustable physics parameters. Topics include: basic principles and wave analysis; propagation of acoustic waves through tissues; principles of pulse echo imaging; sonographic transducers and sound beams; hemodynamic and Doppler imaging; sonographic instrumentation; artifacts; quality assurance/quality control of sonographic instruments; bioeffects and safety. Student laboratory scanning hours are included in this course. Contact hours: Class - 2, Lab - 2. Credit hours: 3. (F)

DMSO 1050 Abdominal Sonography I (Prerequisite: DMSO 1010, DMSO 1020) This course combines the didactic education of normal and abnormal abdominal organs and structures with active student participation in classroom laboratory experience. Introduces advanced abdominal anatomy, sonographic appearance and procedures, pathology and pathophysiology for diagnostic medical sonography. Topics include: embryology; anatomy; protocols for all organs and organ systems of the abdomen and non-cardiac chest; variants of normal and congenital anomalies; function of organ and organ systems;
DMSO 1060 Clinical Sonography I (Prerequisite: Program Admission) Provides students with a more detailed introduction into the hospital, clinic or other patient care setting work experience. This course covers the control of the physical parameters of the sonography unit and application of sonographic physics as it relates to image quality. Sonographic examinations are conducted under direct and indirect supervision. Topics include: oral and written communication; provide basic patient care; equipment manipulation for optimum image resolution; ergonomically correct scanning techniques; perform basic sonographic examinations of normal and abnormal abdominal anatomy, superficial structures, pelvic structures and First trimester obstetrics; related imaging procedures and relevant laboratory findings; students must demonstrate progression of knowledge and scanning skills during this clinical rotation. Contact hours: Class - 0, Lab - 12. Credit hours: 4. (F)

DMSO 1070 Pelvic Sonography and First Trimester Obstetrics (Prerequisite: DMSO 1010, DMSO 1020) This course introduces gynecology physiology, pathology, and pathophysiology along with normal and abnormal embryonic and fetal development during the first trimester using diagnostic medical sonography. Topics include: the role of the sonographer in obstetric imaging; antepartum obstetric sonography evaluation; Doppler imaging for the obstetric patient; significant laboratory values in early pregnancy; anatomy, physiology, pathology and pathophysiology of the female pelvis; gynecologic patient care and imaging techniques; clinical assessment of obstetrical patient; normal first trimester; uterine and extraterine assessment during the first trimester; first trimester complications; prudent use; and performance standards and documentation. Student laboratory scanning hours are included in this course. Contact hours: Class - 1, Lab - 2. Credit hours: 2. (Sp)

DMSO 1080 Sonographic Physics and Instrumentation Registry Review (Prerequisite: DMSO 1040) Provides a review of knowledge from previous courses and helps the student prepare for national certification examinations for sonography. Information concerning test taking skills will also be reviewed. Topics include: patient care, safety and communication; physics principles, ultrasound transducers, pulse-echo instrumentation, Doppler instrumentation; and quality assurance/quality control of equipment. Contact hours: 0, Lab - 2. Credit hours: 1. (Sp)

DMSO 1090 Introduction to Vascular Sonography (Prerequisite: Program Admission) This course is designed as an introduction into the field of vascular sonography. The general practitioner will be required to perform venous examinations of the lower extremity, arterial studies of the neck, and some Doppler studies within the abdomen. Emphasis is on the functional workings and settings associated with Doppler signals and waveforms. Topics include: machine/image settings for Doppler imaging; venous imaging of the lower extremities; arterial imaging of the neck; and vascular imaging of the abdomen, including aorta and its primary branches, vena cava, portal and hepatic veins, and renal arteries and veins. Student laboratory scanning hours are included in this course. Contact hours: Class - 0, Lab - 2. Credit hours: 1. (Su)

DMSO 1101 Clinical Sonography II - Part A (Prerequisite: DMSO 1060) This course provides students with continued work experience in a hospital, clinic or other patient care setting. Students conduct sonographic examinations under direct and indirect supervision while continuing to improve their communication, professionalism and critical thinking skills. Topics include: patient care issues; advanced scanning techniques; normal anatomy and pathologic conditions of the abdomen; normal and abnormal sonographic imaging of the male pelvis; normal and abnormal anatomy and pathology of the female pelvis; normal and abnormal uterine and fetal development through the first trimester. Contact hours: Class - 0, Lab - 15. Credit hours: 5. (Sp)

DMSO 1102 Clinical Sonography II - Part B (Prerequisite: DMSO 1060, DMSO 1101) This course provides students with continued work experience in a hospital, clinic or other patient care setting. Students conduct sonographic examinations under direct and indirect supervision while continuing to improve their communication, professionalism and critical thinking skills. Topics include: patient care issues; advanced scanning techniques; normal anatomy and pathologic conditions of the abdomen; normal and abnormal sonographic imaging of the male pelvis; normal and abnormal anatomy and pathology of the female pelvis; normal and abnormal uterine and fetal development through the first trimester; and introduction to vascular sonography. Contact hours: Class - 0, Lab - 3. Credit hours: 1. (Su)

DMSO 2010 OB Second and Third Trimesters (Prerequisite: DMSO 1020, DMSO 1070) Using classroom instruction and laboratory experiences this course introduces the knowledge of fetal anatomy, pathology, pathophysiology and procedures for diagnostic medical sonography. Instruction emphasizes normal fetal growth, fetal anomalies and maternal complications throughout all the second and third trimesters. Topics include: fetal assessment in the normal second and third trimesters; extra-fetal assessment of the second and third trimesters; assess abnormal fetal growth; high risk obstetrics; fetal structural abnormalities; genetic abnormalities and syndromes; interventional procedures; post-partum complications; prudent use; and performance...
standards and documentation. Student laboratory scanning hours are included in this course. Contact hours: Class - 2, Lab - 2. Credit hours: 3. (F)

**DMSO 2020 Specialized Sonographic Procedures**  
(Prerequisite: Program Admission) This course provides students with three independent areas of concentration. They are High Resolution Sonography, Interventional Sonography and Pediatric Sonography. I. High Resolution Sonography introduces superficial structure anatomy, pathology and procedures for diagnostic medical sonography. II. Interventional Sonography provides instruction in sonographic procedures which are considered invasive and/or require sterile procedures. III. Pediatric Sonography provides the sonography student with specialized imaging procedures for the pediatric patient. Topics include: Intervention Sonography: use of sonography in interventional procedures, transducer care, infection control, response to medical emergencies, contrast media, and organ transplant; High Resolution Sonography: contrast media, and organ transplant; High Resolution Imaging of anatomy and normal variants, function and physiology, indications for examination, sonographic imaging, pathology and pathophysiology, correlative and prior imaging, pertinent lab values; Pediatric Sonography: embryology, anatomy and normal variants, function and physiology, indications for examination, sonographic imaging, and pathology and pathophysiology. Student laboratory scanning hours are included in this course. Contact hours: Class - 1, Lab - 2. Credit hours: 2. (F)

**DMSO 2030 Clinical Sonography III**  
(Prerequisite: DMSO 1102) This course provides students with continued work experience in a hospital, clinic or other patient care setting. Students improve skills in performing sonographic procedures previously introduced. Topics include: normal uterine and fetal development through the three trimesters including placental grading; equipment manipulation for optimum resolution; manipulation of equipment to minimize biological effects; normal anatomy and pathologic conditions of the abdomen and female pelvis; fetal biometry including gestational sac size, crown-rump length, bi-parietal diameter and head circumference; ectopic pregnancies; normal anatomy of the venous and arterial systems of the body; abnormal conditions of the human vasculature system; high resolution sonography including small parts and musculoskeletal imaging; pediatric anatomy and sonographic techniques; interventional sonography including invasive procedures and biopsies; patient care issues; and demonstration of significant progression of knowledge and scanning skills. Contact hours: Class - 0, Lab - 24. Credit hours: 8. (F)

**DMSO 2040 Comprehensive ABD and OB/GYN Registry Review**  
(Prerequisite: DMSO 1050, DMSO 1070, DMSO 2010) Provides a review of knowledge from previous courses and helps the student prepare for ARDMS national certification examinations for sonography. Information concerning test taking skills is also reviewed. Topics include: patient care, preparation and technique; instrumentation, normal pelvic anatomy; abnormal pelvic anatomy; extra-pelvic pathology associated with gynecology; pediatric sonography; post menopause; infertility and endocrinology; first trimester; placenta, amniotic fluid, umbilical cord; second and third trimester; congenital fetal anomalies; complications during pregnancy; fetal demise; coexisting disorders; HIPPA and patient care techniques utilizing a professional sonographer; anatomy and physiology of abdominal structures, small parts, and superficial structures; patient preparation and protocols for sonographic examination of abdominal structure; clinical indications, pertinent related diagnostic imaging procedures and laboratory tests; sonographic technique and appearance of normal anatomic abdominal structures, small parts, characteristic sonographic features and/or patterns of pathology in the abdomen, and small parts. Contact hours: Class - 0, Lab - 2. Credit hours: 2. (Sp)

**DMSO 2050 Clinical Sonography IV**  
(Prerequisite: DMSO 2030) Provides a culminating work experience in the hospital, clinic or other patient care setting for students to improve skills in performing procedures introduced during prior clinical and didactic courses to the level of an entry-level sonographer. Topics include: refinement of equipment manipulation techniques, performance of sonographic examinations as an entry-level sonographer, role of the sonographer in performing interventional/invasive procedures, and completion of necessary competency requirements for graduation. Contact hours: Class - 0, Lab - 30. Credit hours: 10. (Sp)

**ECCE 1101 Intro to Early Childhood Care & Education**  
(Prerequisite: Diploma level proficiency in English, reading and math; Prerequisite/Corequisite: MATH 0097) Introduces concepts relating the responsibilities and procedures involved in a variety of early childhood care situations. Topics include historical perspectives; professionalism; guidance; developmentally appropriate practices; learning environment (including all children); cultural diversity; and licensing, accreditation, and credentialing. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (E)

**ECCE 1103 Child Growth and Development**  
(Prerequisite: Diploma level proficiency in English, reading and math; Prerequisite/Corequisite: MATH 0097) Introduces the student to the physical, social, emotional, and cognitive development of the young child (prenatal through 12 years of age). The course provides for competency development in observing, recording, and interpreting growth and development stages in the young child; advancing physical and intellectual competence; supporting social and emotional development; and examining relationships between child development and positive guidance. Topics include developmental characteristics, prenatal through age 12, developmental guidance applications, observing and
recording techniques, ages and stages of development, and introduction to children with special needs. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (E)

**ECCE 1105 Health, Safety and Nutrition**  
(Prerequisite: Diploma level proficiency in English, reading and math; Prerequisite/Corequisite: MATH 0097) Introduces the theory, practices, and requirements for establishing and maintaining a safe, healthy learning environment. Topics include CPR and first aid, health issues, safety issues, child abuse and neglect, and nutritional needs of children. Contact hours: Class - 2, Lab - 2. Credit hours: 3. (E)

**ECCE 1112 Curriculum and Assessment**  
(Prerequisite/Corequisite: ECCE 1101, ECCE 1103) Provides student with an understanding of developmentally effective approaches to teaching, learning, observing, documenting and assessment strategies that promote positive development for young children. The course will enable the student to establish a learning environment appropriate for young children and to identify the goals, benefits, and uses of assessment in the development of curriculum for young children. Topics include observing, documenting, and assessing; learning environments; development of curriculum plans and materials; curriculum approaches; and instructional media. Contact hours: Class - 2, Lab - 2. Credit hours: 3. (E)

**ECCE 1113 Creative Activities for Children**  
(Prerequisite/Corequisite: ECCE 1112) Introduces the concepts related to creativity in art, music, movement and creative drama, and facilitating children's creative expression across the curriculum. Topics include concepts of creativity and expression; theories of young children's creative development; facilitation of children's creative expression, media, methods and materials across the curriculum; appreciation of children's art processes and products; appreciation of children's creativity in movement, music, dance, and drama; and art and music appreciation. Contact hours: Class - 2, Lab - 2. Credit hours: 3. (E)

**ECCE 1121 Early Childhood Care & Ed Practicum**  
(Prerequisite/Corequisite: ECCE 1112, ECCE 1105, Requires program director approval before registration. A satisfactory DECAL criminal background fingerprint check is required.) Provides the student with the opportunity to gain additional supervised experience in an actual or simulated work setting allowing demonstration of techniques obtained from course work. Practicum training topics include: promoting child development and learning; building family and community relationships; observing, documenting, and assessing to support young children and families; teaching and learning; becoming a professional; and guidance techniques and classroom management. Contact hours: Class - 1, Lab - 6. Credit hours: 3. (E)

**ECCE 2115 Language and Literacy**  
(Prerequisite/Corequisite: ECCE 1112) Develops knowledge, skills, and abilities in supporting young children's literacy acquisition and development, birth through age twelve. Topics include developmental continuum of reading and writing, literacy acquisition birth to five years of age, literacy acquisition in kindergarten, literacy acquisition in early grades, and literacy acquisition in children who are culturally and linguistically diverse. Contact hours: Class - 2, Lab - 2. Credit hours: 3. (E)

**ECCE 2116 Math and Science**  
(Prerequisite/Corequisite: ECCE 1112) Presents the process of introducing math and science concepts to young children. Includes planning and implementation of developmentally appropriate activities and development of math and science materials, media and methods. Topics include inquiry approach to learning; cognitive stages and developmental processes in developing math and science concepts with children birth to five; cognitive stages and developmental processes in developing math and science concepts with children in kindergarten and primary grades; planning math and science activities; and development of math and science materials, media and methods. Contact hours: Class - 2, Lab - 2. Credit hours: 3. (E)

**ECCE 2201 Exceptionalities**  
(Prerequisite: ECCE 1103) Provides for the development of knowledge and skills that will enable the student to understand individuals with special needs and appropriately guide their development. Special emphasis is placed on acquainting the student with programs and community resources that serve families with children with special needs. Topics include inclusion/least restrictive environment (LRE), physical and motor impairments, gifted/talented, intellectual and cognitive disabilities, emotional and behavioral disorders, communication disorders in speech and language, autism spectrum disorders, visual impairments, deaf and hard of hearing, health impairments, multiple disabilities, and community resources. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (T)

**ECCE 2202 Social Issues & Family Involvement**  
(Prerequisite: Diploma level proficiency in English, reading and math) Enables the student to value the complex characteristics of children's families and communities and to develop culturally responsive practices which will support family partnerships. Students use their understanding to build reciprocal relationships which promote children's development and learning. Students are introduced to local programs and agencies that offer services to children and families within the community. Topics include professional responsibilities, family/social issues, community resources, family education and support, teacher-family communication, community partnerships, social diversity and anti-bias concerns, successful transitions, and school-family activities. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (T)

**ECCE 2203 Guidance and Classroom Management**  
(Prerequisite: ECCE 1103) Examines effective guidance practices in group settings based upon the application of theoretical models of child development
and of developmentally appropriate practices. Focus will be given to individual, family, and cultural diversity.

Topics will include developmentally appropriate child guidance (birth through 12); effective classroom management, including preventive and intervention techniques; understanding challenging behaviors; and implementing guidance plans. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (T)

ECCE 2240 Early Childhood Care and Education Internship (Prerequisite: ECCE 1121; Must be within 18 semester hours of completing program; Requires program director approval before registration.) Provides the student with the opportunity to gain a supervised experience in an actual or simulated work site allowing demonstration of techniques obtained from course work. Practicum topics include promoting child development and learning; building family and community relationships; observing, documenting, and assessing to support young children and families; teaching and learning; becoming a professional; and guidance techniques and classroom management. Contact hours: Class - 0, Lab - 36. Credit hours: 12. (F, Sp)

ECCE 2310 Paraprofessional Methods and Materials (Prerequisite: ECCE 1103; Pick any two: ECCE 1113, ECCE 2115, ECCE 2116) Develops the instructional skills to enable the student to work as a paraprofessional in a program for kindergarten through elementary age children. Topics include assessment and curriculum, instructional techniques, and methods for instruction in a learning environment. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (F)

ECCE 2312 Paraprofessional Roles and Practices (Prerequisite: ECCE 1103; Pick any two: ECCE 1113, ECCE 2115, ECCE 2116) Develops skills to enable the student to work as a paraprofessional in a program for kindergarten through elementary aged children. Topics include professional qualifications, professional and ethical conduct, professionalism and employment, and paraprofessional roles and responsibilities. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (Sp)

ECCE 2320 Program Administration and Facility Management (Prerequisite: Diploma level proficiency in English, reading and math) Provides training in early childhood personnel management. Topics include staff records; communication; personnel policies; managing payroll; recruitment, interviewing, selection, hiring, motivating, and firing; staff retention; staff scheduling; staff development; staff supervision; conflict resolution; staff evaluations; ethical responsibilities to employees; and time and stress management. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (Sp)

ECCE 2360 Classroom Strategies for Exceptional Children (Prerequisite: ECCE 2201; Corequisite: ECCE 2362) Prepares child care providers and paraprofessionals with knowledge and skills in the areas of working effectively with children with a disability; working with families as partners; examining the laws and regulations; exploring resources, service providers, and agencies that may assist the child and his/her family; examining the adaptations and modifications to facilities and environments; reviewing the referral process; implementing inclusion; modifying instruction to accommodate the child with special needs; and investigating ways to document and chart observations. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (F)

ECCE 2362 Exploring Your Role in the Exceptional Environment (Prerequisite: ECCE 2201; Corequisite: ECCE 2360) Prepares child care providers and paraprofessionals with knowledge and skills for screening and assessing purposes; and explores resources, service providers, and agencies that may assist the child and families in educational or natural settings. Examines adaptations, accommodations, and modifications to environments; reviews the referral process; implements inclusion and modifies instruction to accommodate the child with special needs. Contact hours: Class - 2, Lab - 3. Credit hours: 3. (F)

ECET 1101 Circuit Analysis (Corequisite: ENGT 1000) Emphasizes the knowledge and ability to analyze basic DC circuits and introductory concepts of AC circuits. Topics include: international units, basic electrical laws, series and parallel circuits, network analysis concepts, network theorems concepts, D.C. instruments, grounding techniques, magnetism, inductance/capacitance, transient analysis, and introduction to dependent sources and 2-port parameters. Laboratory work parallels class work. Contact hours: Class - 3, Lab - 3. Credit hours: 4. (E)

ECET 1110 Digital Systems I (Prerequisite: ENGT 1000) Study of digital circuit fundamentals with an emphasis on digital electronics and techniques, simplification of logic circuits, sequential and combinational logic circuits, programmable logic devices, flip-flops and registers, binary number system, and arithmetic and logic operations. Laboratory work parallels class work using trainers, DesignWorks, PSPICE and/or Altera simulation software and system. Contact hours: Class - 3, Lab - 3. Credit hours: 4. (T)

ECET 2101 Circuit Analysis II (Prerequisite: ENGT 1000, ECET 1101, MATH 1111) Continues study of AC circuit analysis, which emphasizes complex networks.
COURSE DESCRIPTIONS

Topics include: analysis of complex networks, networks with multiple sources, AC network theorems, resonance, transformers, three-phase systems, filters and bode plots, non-sinusoidal waveforms, and pulse response of RLC circuits. Laboratory work parallels class work. Contact hours: Class - 3, Lab - 3. Credit hours: 4. (F)

ECET 2120 Electronic Circuits I (Prerequisite: ENGT 1000) Introduces the conduction process in semiconductor materials and devices. Topics include semiconductor physics; diodes; basic diode circuits and applications; biasing, stability and graphical analysis of bipolar junction transistors and field effect transistors; introduction to silicon controlled rectifiers; device curve characteristics; and related devices with selected applications. Laboratory work includes circuit construction, use of appropriate instruments, troubleshooting and circuit simulation using P-SPICE. Contact hours: Class - 3, Lab - 3. Credit hours: 4. (T)

ECHO 1100 Echocardiography Fundamentals (Prerequisite: Program Admission) This course introduces the basic principles and applications of the physical assessment and echocardiographic procedures. Discussion of medical law and ethics as it relates to the professional scope of practice. Topics include: basic echocardiographic imaging principles, patient skills and equipment instrumentation, basic Doppler and color principles, medical law and ethics and common terminology and abbreviations. Contact hours: Class - 2, Lab - 2. Credit hours: 3. (T)

ECHO 1310 Echocardiography I (Prerequisite: ECHO 1100) This course utilizes cardiac sonography fundamentals to evaluate cardiac anatomy, function and hemodynamics in diagnosing coronary artery heart disease. Incorporates all forms of noninvasive cardiovascular evaluation with emphasis on performance and interpretation of M-mode, 2-dimensional, and Doppler echocardiography. Emphasis will be placed on obtaining quality echocardiograms, and laboratory experience will demonstrate the application of theoretical principles and concepts. Topics include: ventricular function, coronary artery disease, Stress Echocardiography, Transesophageal Echocardiography (TEE), 3-D/4-D Echocardiography, Contrast Echocardiography and advanced techniques/procedures. Contact hours: Class - 0, Lab -6. Credit hours: 3. (T)

ECHO 1320 Echocardiography II (Prerequisite: ECHO 1310; Prerequisite/Corequisite: ECHO 1370 or ECHO 1371 or ECHO 1372) This course utilizes fundamentals to evaluate cardiac function and acquired disease states. Incorporates all forms of noninvasive cardiovascular evaluation with emphasis on performance and interpretation of M-mode, 2-dimensional, and Doppler echocardiography. Emphasis will be placed on obtaining quality echocardiograms, and laboratory experience will demonstrate the application of theoretical principles and concepts. Topics include: valvular heart disease, cardiomyopathies, systemic and pulmonary hypertensive heart disease, pericardial diseases, systemic disease, cardiac transplantation, cardiac tumors/masses, diseases of the aorta, pericardial diseases, and miscellaneous topics. Contact hours: Class - 0, Lab - 6. Credit hours: 3. (T)

ECHO 1370 Echocardiography Clinical I (Prerequisite: Program Admission) Provides hands-on experience in performing noninvasive cardiovascular procedures with emphasis on instrumentation and development of clinical techniques. Topics include: policies and procedures, echocardiographic instrumentation, recording patient information, patient preparation, and performing echocardiographic examinations. Contact hours: Class - 0, Lab - 21. Credit hours: 7. (T)

ECHO 2360 Echocardiography Clinical II (Prerequisite: ECHO 1370) Provides hands-on experience in the clinical setting with an emphasis placed on the development of clinical techniques employed to obtain meaningful data. Continued participation by the student will progressively lead to the student performing diagnostic procedures with less assistance but under the supervision of an appropriately credentialed sonographer. Topics include: echocardiographic instrumentation, logging and reporting information, preparation for echocardiographic examinations, medical ethics, and performing echocardiographic procedures. Students may do a brief rotation through an invasive cardiology lab, pediatric lab and/or vascular lab. Contact hours: Class - 0, Lab - 21. Credit hours: 7. (T)

ECHO 2370 Echocardiography Clinical III (Prerequisite: ECHO 2360; Prerequisite/Corequisites: ECHO 2400) This course builds on the knowledge and skills learned in Clinical Echo 3. By the end of this rotation, the student will perform all echocardiography procedures independently with the supervision of an appropriately credentialed sonographer. This course provides a culminating clinical setting experience which allows students to synthesize information and procedural instruction provided throughout the program. Emphasis is placed on skill level improvements and final completion of all required clinical competencies presented in previous courses and practiced in previous clinical vascular courses. Topics include: scanning, documentation of pathologies, patient and equipment skills, current literature, professionalism, and ethical behavior. Contact hours: Class - 0, Lab - 30. Credit hours: 10. (T)

ECHO 2400 Comprehensive Registry Review (Prerequisite: ECHO 2310; Prerequisite/Corequisites: ECHO 2370) This course will be an overall review of Echocardiography to include demonstration of normal and abnormal cardiac anatomy, cardiac physiology, pathophysiology and hemodynamics/physics in the different types of cardiac disease/dysfunctions. Also included will be a review of clinical non-invasive cardiac diagnostic procedures, laboratory values,
pharmacology and test validation and measurements. Emphasis is placed on reviewing information so that the student will successfully pass the ARMDS and/or CCI certification examinations. Topics include: normal and abnormal cardiac anatomy, techniques, pathology, physics/hemodynamics, test validation and measurements, and laboratory values. Contact hours: Class - 0, Lab - 2. Credit hours: 1. (T)

ECON 1101 Principles of Economics (Prerequisite: Degree Level proficiency in Math, English and reading) Provides a description and analysis of economic operations in contemporary society. Emphasis is placed on developing an understanding of economic concepts and policies as they apply to everyday life. Topics include basic economic principles; economic forces and indicators; capital and labor; price, competition, and monopoly; money and banking; government expenditures, federal and local; fluctuations in production, employment, and income; and United States economy in perspective (Associate degree level course) Contact hours: Class - 3, Lab - 0. Credit hours: 3. (E)

ECON 2105 Principles of Macroeconomics (Prerequisite: Degree Level proficiency in Math, English and reading) Provides a description and analysis of macroeconomic principles and policies. Topics include basic economic principles, macroeconomic concepts, equilibrium in the goods and money markets, macroeconomic equilibrium and the impact of fiscal and monetary policies. (Associate degree level course) Contact hours: Class - 3, Lab - 0. Credit hours: 3. (E)

ECON 2106 Principles of Microeconomics (Prerequisite: Degree Level proficiency in Math, English and reading) Provides an analysis of the ways in which consumers and business firms interact in a market economy. Topics include basic economic principles, consumer choice, behavior of profit maximizing firms, modeling of perfect competition, monopoly, oligopoly and monopolistic competition. (Associate degree level course) Contact hours: Class - 3, Lab - 0. Credit hours: 3. (E)

ELTR 1020 Electrical Systems Basics I (Prerequisite/ Corequisite: Provisional Admission) Introduces the theory and application of varying sine wave voltages and current. Topics include: magnetism, AC wave generation, AC test equipment, inductance, capacitance, and basic transformers. Contact hours: Class - 2, Lab - 2. Credit hours: 3. (T)

ELTR 1060 Electrical Prints, Schematics & Symbols (Prerequisite: Provisional Admission) Introduces electrical symbols and their use in construction blueprints, electrical schematics, and diagrams. Topics include: electrical symbols, component identification, print reading and scales and measurement. Contact hours: Class – 1, Lab – 2. Credit hours: 2. (T)

ELTR 1080 Commercial Wiring I (Prerequisite: Provisional Admission) This course introduces commercial wiring practices and procedures. Topics include: industrial safety procedures, the National Electrical Code, commercial load calculations, three-phase power systems, and fundamentals of AC motor control. Contact hours: Class – 4, Lab – 2. Credit hours: 5. (T)

ELTR 1205 Residential Wiring I (Corequisite: ELTR 1210) Introduces residential wiring practices and procedures. Topics include: print reading, National Electrical Code, wiring materials and methods, and control of luminaries and receptacle installation. Contact hours: Class – 2, Lab – 2. Credit hours: 3. (T)

ELTR 1525 Photovoltaic Systems (Prerequisite: Provisional Admission) This class introduces techniques and method on how to install residential and commercial photovoltaic systems. Solar systems include grid- connected, Stand-alone, and Hybrid. Contact hours: Class - 3, Lab 4. Credit hours: 5. (T)

EMPL 1000 Interpersonal Relations and Professional Development (Prerequisite: Diploma level proficiency in English and reading) Emphasizes human relations and professional development in today's rapidly changing world that prepares students for living and working in a complex society. Topics include human relations skills, job acquisition skills and communication, job retention skills, job advancement skills, and professional image skills. (Diploma level course) Contact hours: Class - 2, Lab - 0. Credit hours: 2. (E)

EMSP 1010 Emergency Medical Responder (Prerequisite: Program Admission) The Emergency Medical Responder (EMR) course prepares the student to provide initial stabilizing care to the sick or injured prior to the arrival of Emergency Medical Services Professionals (EMS), and to assist EMS personnel in transporting patients for definitive care at an appropriate hospital/facility. Major areas of instruction include Introductory Medical Terminology and Anatomy & Physiology; Responder Safety; Incident Command; Bloodborne Pathogen Training; Basic Physical Assessment; and Treatment of Trauma and Medical Emergencies; Cardiopulmonary Resuscitation and the use of Automatic External Defibrillators. The course is a blend of lecture, hands on lab/learning, and practical scenario based learning/testing. The course will include Healthcare Provider CPR/AED Certification from a Nationally Recognized Body (American Heart Association, Red Cross, etc). If this course is also approved by the Georgia State Office of Emergency Medical Services and Trauma (SOEMST), successful completion will allow the student to be eligible to take the National Registry of Emergency Medical Technicians (NREMT) Emergency Medical Responder (EMR) certification. Topics include: Preparatory; Anatomy and Physiology; Medical Terminology; Pathophysiology; Life Span Development; Public Health; Pharmacology; Airway; Management; Respiration and Artificial Ventilation; Assessment; Medicine; Shock and Resuscitation; Trauma; Special Patient Populations; EMS Operations; and Integration of Patient Assessment and Management. Contact hours: Class - 3, Lab -3. Credit hours: 4. (F, Sp)
EMSP 1110 Introduction to the EMT Profession
(Prerequisite: Program Admission; ALHS 1011 and ALHS 1090 or BIOL 2113 and BIOL 2113L and BIOL 2114 and BIOL 2114L, ENGL 1010 or ENGL 1101, MATH 1012 or MATH 1111 or MATH 1103, and PSYC 1010 or PSYC 1101) This course serves as the introductory course to the Emergency Medical Services (EMS) profession. It orient the student to the prehospital care environment, issues related to the provision of patient care in both in-hospital and out-of-hospital circumstances. It further provides foundational information upon which subsequent curriculum content is based so that successful completion of this content increases the potential for success in subsequent courses and should allow students to apply the fundamental knowledge, skills, and attitudes gained in order to effectively communicate and function safely, ethically and professionally within the emergency medical services environment. Topics include: Anatomy and Physiology, Medical Terminology, Pathophysiology, CPR for HCP, EMS Systems, Research, Workforce Safety and Wellness, Documentation, EMS System Communication, Therapeutic Communication, Medical/Legal and Ethics, Public Health, Principles of Safely Operating a Ground Ambulance, Incident Management, Multiple Casualty Incidents, Air Medical, Vehicle Extrication, HazMat, MCI due to Terrorism/Disaster, and Life Span Development. Contact hours: Class - 2, Lab -2. Credit hours: 3. (F, Sp, Su)

EMSP 1120 EMT Assessment/Airway Management and Pharmacology
(Prerequisite: Program Admission) This course prepares students for initial scene management and assessment of patients as well as management of the airway. Introduction to pharmacology is also covered. Includes application of scene information and patient assessment findings (scene size up, primary and secondary assessment, patient history, and reassessment) to guide emergency management. Topics include: Scene Size-Up; Primary Assessment; History Taking; Secondary Assessment; Monitoring Devices; Reassessment; Airway Management; Respiration; Artificial Ventilation; Principles of Pharmacology; Medication Administration; and Emergency Medications. Contact hours: Class - 2, Lab -2. Credit hours: 3. (F, Sp, Su)

EMSP 1130 Medical Emergencies for the EMT
(Prerequisite: Program Admission) This course integrates pathophysiological principles and assessment findings to formulate a field impression and implement the treatment plan of cases involving non-traumatic medical emergencies. Topics include: Medical Overview; Neurology; Abdominal and Gastrointestinal Disorders; Immunology; Infectious Disease; Endocrine Disorders; Psychiatric; Cardiovascular; Toxicology; Respiratory; Hematology; Genitourinary/Renal; Non-Traumatic Musculoskeletal Disorders; Diseases of the Eyes, Ears, Nose, and Throat; and Medical Assessments. Contact hours: Class - 2, Lab -2. Credit hours: 3. (F, Sp)

EMSP 1140 Special Patient Populations
(Prerequisite: Program Admission) This course provides a fundamental knowledge of growth, development, and aging and assessment findings to provide basic emergency care and transportation for a patient with special needs. Topics include: Obstetrics, Gynecology, Neonatal Care, Pediatrics, Geriatrics, Patients with Special Challenges, and Special Patient Populations - Assessments. Contact hours: Class - 2, Lab -2. Credit hours: 3. (F, Sp)

EMSP 1150 Shock and Trauma for the EMT
(Prerequisite: Program Admission) This course is designed to prepare the EMT student to applyprehospital emergency care to patients who have sustained injuries resulting from various mechanisms of injury including: Abdominal and Genitourinary trauma; Orthopedic trauma; Soft Tissue trauma; Head, Facial, Neck, and Spine Trauma and Nervous System trauma. Special considerations in trauma related injuries will be presented including the physiology of shock as well as multi-system trauma and environmental emergencies. Topics include: Shock and Resuscitation; Trauma Overview; Bleeding; Chest Trauma; Abdominal and Genitourinary Trauma; Orthopedic Trauma; Soft Tissue Trauma; Head, Facial, Neck, and Spine Trauma; Nervous System Trauma; Special Considerations in Trauma; Environmental Emergencies; and Multi-System Trauma. Contact hours: Class - 2, Lab -2. Credit hours: 3. (F, Sp)

EMSP 1160 Clinical and Practical Applications for the EMT
(Prerequisite: Program Admission) This course provides supervised clinical experience in various clinical settings as well as opportunities to demonstrate critical thinking skills and assessment based management techniques through competency based evaluations relevant to the practice of an EMT. Topics include: Clinicals and Assessment Based Management. Contact hours: Class - 0, Lab -3. Credit hours: 1. (F, Sp)

EMSP 1510 Advanced Concepts for the AEMT
(Prerequisite: Program Admission; ALHS 1011 and ALHS 1090 or BIOL 2113 and BIOL 2113L and BIOL 2114 and BIOL 2114L, ENGL 1010 or ENGL 1101, MATH 1012 or MATH 1111 or MATH 1103 and PSYC 1010 or PSYC 1101) Applicants for this program must submit documentation of current Georgia EMT License, OR National Registry of EMT’s certification as an EMT or EMT-Basic before open registration begins.) This course serves as the introductory course to the advanced level practice of the Advanced Emergency Medical Technician (AEMT). It expands on the information attained at the EMT level. Topics include: EMS Systems; Documentation; EMS System Communication; Therapeutic Communication; Principles of Pharmacology; Medication Administration; Emergency Medications; Airway Management; Respiration; Artificial Ventilation; Primary Assessment; and Secondary Assessment. Contact hours: Class - 2, Lab -2. Credit hours: 3. (F, Sp)

EMSP 1520 Advanced Patient Care for the AEMT
(Prerequisite: Program Admission) This course provides
opportunities to apply fundamental knowledge of basic and selected advanced emergency care and transportation based on assessment findings for the following: an acutely ill patient; a patient in shock, respiratory failure or arrest, cardiac failure or arrest, and post resuscitation management; and an acutely injured patient. In addition it provides a fundamental knowledge of growth, development, and aging and assessment findings to provide basic and selected advanced emergency care and transportation for a patient with special needs. Topics include: Geriatrics; Patients with Special Challenges; Medical Overview; Neurology; Immunology; Infectious Disease; Endocrine Disorders; Cardiovascular; Toxicology; Respiratory; Hematology; Genitourinary/Renal; Shock and Resuscitation; Chest Trauma; Abdominal and Genitourinary Trauma; Orthopedic Trauma; Head, Facial, Neck, and Spine Trauma: Nervous System Trauma; and Integration of Medical/Trauma Assessments. Contact hours: Class - 2, Lab -2. Credit hours: 3. (F, Sp)

**EMSP 1530 Clinical Applications for the AEMT**  
(Prerequisite: Program Admission) This course provides supervised clinical experience in various clinical settings. Topics include: Clinicals. Contact hours: Class - 0, Lab -2. Credit hours: 1. (F, Sp)

**EMSP 1540 Clinical and Practical Applications for the AEMT**  
(Prerequisite: Program Admission) This course provides supervised clinical experience in various clinical settings as well as opportunities to demonstrate critical thinking skills and assessment based management techniques through competency based evaluations relevant to the practice of an AEMT. Topics include: Clinicals and Assessment Based Management. Contact hours: Class - 0, Lab -6. Credit hours: 3. (F, Sp)

**EMSP 2110 Foundations of Paramedicine**  
(Prerequisite: Program Admission; ALHS 1011 or BIOL 2113 and BIOL 2113L and BIOL 2114 and BIOL 2114L, ENGL 1010 or ENGL 1101, MATH 1012 or MATH 1111 or MATH 1103) This course introduces the student to the role of the paramedic in today's healthcare system, with a focus on the prehospital setting. This course will also prepare the student to integrate scene and patient assessment findings with knowledge of epidemiology and pathophysiology to form a field impression. This includes developing a list of differential diagnoses through clinical reasoning to modify the assessment and formulate a treatment plan. Topics include: EMS Systems; Research; Workforce Safety and Wellness; Documentation; EMS System Communication; Therapeutic Communication; Medical/Legal and Ethics; Life Span Development; Public Health; Incident Management; Air Medical; Scene Size-Up; Primary Assessment; History Taking; Secondary Assessment; Monitoring Devices; and Reassessment. Contact hours: Class - 2, Lab -2. Credit hours: 3. (Sp)

**EMSP 2120 Applications of Pathophysiology for Paramedics**  
(Prerequisite: Program Admission; ALHS 1011 or BIOL 2113 and BIOL 2113L and BIOL 2114 and BIOL 2114L, ENGL 1010 or ENGL 1101, MATH 1012 or MATH 1111 or MATH 1103) This course expands the concepts of pathophysiology as it correlates to disease processes. This course will enable the student to apply the general concepts of pathophysiology to the assessment and management of patients in the emergency setting. Topics include: Pathophysiology. Contact hours: Class - 3, Lab -0. Credit hours: 3. (Sp)

**EMSP 2130 Advanced Resuscitative Skills for Paramedics**  
(Prerequisite: Program Admission; ALHS 1011 or BIOL 2113 and BIOL 2113L and BIOL 2114 and BIOL 2114L, ENGL 1010 or ENGL 1101, MATH 1012 or MATH 1111 or MATH 1103) This course will equip the paramedicine student with an expanded knowledge of pharmacology, as well as skills used to manage the respiratory system. Students will learn to use these advanced resuscitative skills to mitigate patient care emergencies, and to improve the overall health of the patient. Topics include: Principles of Pharmacology; Medication Administration; Emergency Medications; Airway Management; Respiration; and Artificial Ventilation. Contact hours: Class - 2, Lab - 2. Credit hours: 3. (Sp)

**EMSP 2140 Advanced Cardiovascular Concepts**  
(Prerequisite: Program Admission; ALHS 1011 or BIOL 2113 and BIOL 2113L and BIOL 2114 and BIOL 2114L, ENGL 1010 or ENGL 1101, MATH 1012 or MATH 1111 or MATH 1103) This course equips the paramedicine student with an expanded knowledge of the anatomy, physiology, and electrophysiology of the cardiovascular system. Students will also examine the epidemiology of cardiovascular disease, and will begin to integrate advanced assessment skills (including ECG interpretation) into the assessment of cardiac patients. Topics include: Anatomy, Physiology, and Electrophysiology of the Cardiovascular System; Epidemiology of Cardiovascular Disease; Assessment of the Cardiac Patient; Electrocardiographic (ECG) interpretation. Contact hours: Class - 3, Lab - 2. Credit hours: 4. (Sp)

**EMSP 2310 Therapeutic Modalities of Cardiovascular Care**  
(Prerequisite: Program Admission; Prerequisite/Corequisite: EMSP 2110, EMSP 2120, EMSP 2130 and EMSP 2140) This course will enable the student to integrate assessment findings with principles of
epidemiology and pathophysiology to formulate a field impression and implement a comprehensive treatment/disposition plan for a patient experiencing a medical emergency. Topics include: Medical Overview; Neurology; Abdominal and Gastrointestinal Disorders; Immunology; Infectious Disease; Endocrine Disorders; Psychiatric; Toxicology; Respiratory; Hematology; Genitourinary/Renal; Non-Traumatic Musculoskeletal Disorders; Diseases of the Eyes, Ears, Nose, and Throat; and Assessment of Medical Emergencies. Contact hours: Class - 4, Lab - 2. Credit hours: 5. (F)

**EMSP 2330 Therapeutic Modalities of Trauma Care**
(Prerequisite: Program Admission; Prerequisite/Corequisite: EMSP 2110, EMSP 2120, EMSP 2130 and EMSP 2140) This course will enable the student to integrate a comprehensive knowledge of causes and pathophysiology into the management of traumatic: cardiac arrest and peri-arrest states; shock, respiratory failure or arrest with an emphasis on early intervention to prevent arrest. This course will also include integrating assessment findings with principles of epidemiology and pathophysiology to formulate a field impression to implement a comprehensive treatment/disposition plan for an acutely injured patient. During this course, the student will complete a nationally recognized pre-hospital trauma course (i.e. PHTLS, ITLS, ATT, etc.). Topics include: Shock and Trauma Resuscitation; Trauma Overview; Bleeding; Chest Trauma; Abdominal and Genitourinary Trauma; Orthopedic Trauma; Soft Tissue Trauma; Head, Facial, Neck, and Spine Trauma; Nervous System Trauma; Special Considerations in Trauma; Environmental Emergencies; Multi-System Trauma; and Assessment of Trauma Emergencies. Contact hours: Class - 3, Lab - 2. Credit hours: 4. (Su)

**EMSP 2340 Therapeutic Modalities for Special Patient Populations**
(Prerequisite: Program Admission; Prerequisite/Corequisite: EMSP 2110, EMSP 2120, EMSP 2130 and EMSP 2140) This course will enable the student to 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 various special patient populations. During this course, the student will also complete a nationally recognized pediatric course (i.e. PHTLS, ITLS, ATT, etc.). Topics include: Obstetrics; Gynecology; Neonatal Care; Pediatrics; Geriatrics; and Patients with Special Challenges. Contact hours: Class - 3, Lab - 2. Credit hours: 4. (F)

**EMSP 2510 Clinical Applications for the Paramedic I**
(Prerequisite: Program Admission; Prerequisite/Corequisite: EMSP 2110, EMSP 2120, EMSP 2130 and EMSP 2140) This course provides the paramedicine student with supervised clinical experience in various clinical settings. EMSP 2510 Clinical Applications for the Paramedic - I is one in a series of courses that also includes: EMSP 2520, EMSP 2530, EMSP 2540, EMSP 2550, EMSP 2560 and EMSP 2570. The successful completion of all of these will result in meeting all clinical standards required by the State Office of Emergency Medical Services and Trauma (SOEMST). Topics include: Clinicals. Contact hours: Class - 0, Lab - 6. Credit hours: 2. (F)

**EMSP 2520 Clinical Applications for the Paramedic II**
(Prerequisite: Program Admission; Prerequisite/Corequisite: EMSP 2110, EMSP 2120, EMSP 2130 and EMSP 2140) This course provides the paramedicine student with supervised clinical experience in various clinical settings. EMSP 2520 Clinical Applications for the Paramedic - II is one in a series of courses that also includes: EMSP 2510, EMSP 2530, EMSP 2540, EMSP 2550, EMSP 2560 and EMSP 2570. The successful completion of all of these will result in meeting all clinical standards required by the State Office of Emergency Medical Services and Trauma (SOEMST). Topics include: Clinicals. Contact hours: Class - 0, Lab - 6. Credit hours: 2. (Sp)

**EMSP 2530 Clinical Applications for the Paramedic III**
(Prerequisite: Program Admission; Prerequisite/Corequisite: EMSP 2110, EMSP 2120, EMSP 2130 and EMSP 2140) This course provides the paramedicine student with supervised clinical experience in various clinical settings. EMSP 2530 Clinical Applications for the Paramedic - III is one in a series of courses that also includes: EMSP 2510, EMSP 2520, EMSP 2540, EMSP 2550, EMSP 2560 and EMSP 2570. The successful completion of all of these will result in meeting all clinical standards required by the State Office of Emergency Medical Services and Trauma (SOEMST). Topics include: Clinicals. Contact hours: Class - 0, Lab - 6. Credit hours: 2. (Sp)

**EMSP 2540 Clinical Applications for the Paramedic IV**
(Prerequisite: Program Admission; Prerequisite/Corequisite: EMSP 2110, EMSP 2120, EMSP 2130 and EMSP 2140) This course provides the paramedicine student with supervised clinical experience in various clinical settings. EMSP 2540 Clinical Applications for the Paramedic - IV is one in a series of courses that also includes: EMSP 2510, EMSP 2520, EMSP 2530, EMSP 2550, EMSP 2560 and EMSP 2570. The successful completion of all of these will result in meeting all clinical standards required by the State Office of Emergency Medical Services and Trauma (SOEMST). Topics include: Clinicals. Contact hours: Class - 0, Lab - 3. Credit hours: 1. (Su)

**EMSP 2550 Clinical Applications for the Paramedic V**
(Prerequisite: Program Admission; Prerequisite/Corequisite: EMSP 2110, EMSP 2120, EMSP 2130 and EMSP 2140) This course provides the paramedicine student with supervised clinical experience in various clinical settings. EMSP 2550 Clinical Applications for the Paramedic - V is one in a series of courses that also includes: EMSP 2510, EMSP 2520, EMSP 2530, EMSP 2540, EMSP 2560
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and EMSP 2570. The successful completion of all of these will result in meeting all clinical standards required by the State Office of Emergency Medical Services and Trauma (SOEMST). Topics include: Clinicals. Contact hours: Class - 0, Lab - 3. Credit hours: 1. (Su)

EMSP 2560 Clinical Applications for the Paramedic VI (Prerequisite: Program Admission; Prerequisite/Corequisite: EMSP 2110, EMSP 2120, EMSP 2130 and EMSP 2140) This course provides the paramedicine student with supervised clinical experience in various clinical settings. EMSP 2520 Clinical Applications for the Paramedic - VI is one in a series of courses that also includes: EMSP 2510, EMSP 2520, EMSP 2530, EMSP 2540, EMSP 2550 and EMSP 2570. The successful completion of all of these will result in meeting all clinical standards required by the State Office of Emergency Medical Services and Trauma (SOEMST). Topics include: Clinicals. Contact hours: Class - 0, Lab - 3. Credit hours: 1. (F)

EMSP 2570 Clinical Applications for the Paramedic VII (Prerequisite: Program Admission; Prerequisite/Corequisite: EMSP 2110, EMSP 2120, EMSP 2130 and EMSP 2140) This course provides the paramedicine student with supervised clinical experience in various clinical settings. EMSP 2520 Clinical Applications for the Paramedic - VII is one in a series of courses that also includes: EMSP 2510, EMSP 2520, EMSP 2530, EMSP 2540, EMSP 2550 and EMSP 2560. The successful completion of all of these will result in meeting all clinical standards required by the State Office of Emergency Medical Services and Trauma (SOEMST). Topics include: Clinicals. Contact hours: Class - 0, Lab - 3. Credit hours: 1. (F)

EMSP 2710 Field Internship for the Paramedic (Prerequisite: Program Admission; Prerequisite/Corequisite: EMSP EMSP 2310, EMSP 2320, EMSP 2330, EMSP 2340, EMSP 2510, EMSP 2520, EMSP 2530, EMSP 2540, EMSP 2550, EMSP 2560, EMSP 2570) Provides supervised field internship experience in the prehospital advanced life support setting. Topics include: Field Internship. Contact hours: Class - 0, Lab - 6. Credit hours: 2. (Sp)

EMSP 2720 Practical Applications for the Paramedic (Prerequisite: Program Admission; Prerequisite/Corequisite: EMSP EMSP 2310, EMSP 2320, EMSP 2330, EMSP 2340, EMSP 2510, EMSP 2520, EMSP 2530, EMSP 2540, EMSP 2550, EMSP 2560, EMSP 2570) Allows opportunities to demonstrate critical thinking skills and assessment based management techniques through competency based evaluations relevant to the practice of a Paramedic. Topics include: Assessment Based Management for Paramedics. Contact hours: Class - 2, Lab - 2. Credit hours: 3. (Sp)

ENGL 0096 English I (Prerequisite: Appropriate placement test scores in English and/or reading) Emphasizes standard English usage. Topics include vocabulary skills, capitalization, basic punctuation, subject and verb agreement, correct verb forms, spelling, and basic paragraph development. (Diploma level developmental course.) Contact hours: Class - 3, Lab - 0. Credit hours: 3. (E)

ENGL 0097 English II (Prerequisite: Appropriate placement test scores in English and/or reading; or ENGL 0096 and/or READ 0096) Emphasizes the rules of grammar, punctuation, capitalization, spelling, and writing in order to ensure a smooth transition into communicating orally and in writing. Topics include basic grammar, basic mechanics, spelling, and writing skills. (Diploma level developmental course.) Contact hours: Class - 3, Lab - 0. Credit hours: 3. (E)

ENGL 0988 Intermediate Reading & Writing (Prerequisite: Appropriate placement test scores in English and/or reading; or ENGL 0907 and/or READ 0907) This course integrates academic reading and writing skills to prepare students to be career and college ready. Topics include reading and writing processes, study strategies, critical thinking strategies, and research skills. Upon successful completion of this course, students will be able to apply these skills toward understanding and composing unified, coherent, and well-developed texts at a career and college-ready level. The course fulfills the requirements for the highest level of learning support reading and/or English and prepares students for ENGL 1101. (Associate degree level developmental course) Contact hours: Class - 2, Lab – 2. Credit hours: 3 (E)

ENGL 1010 Fundamentals of English I (Prerequisite: Diploma level proficiency in English and Reading; or ENGL 0097 and READ 0097) This course emphasizes the development and improvement of written and oral communication abilities. Topics in ENGL 1010 include analysis of writing, applied grammar and writing skills, editing and proofreading skills, research skills, and oral communication skills. (Diploma level course) Contact hours: Class - 3, Lab - 0. Credit hours: 3. (E)

ENGL 1101 Composition and Rhetoric (Prerequisite: Degree level proficiency in English and reading; or ENGL 0986) This course explores the analysis of literature and articles about issues in the humanities and in society. Students practice various modes of writing, ranging from exposition to argumentation and persuasion. ENGL 1101 includes a review of standard grammatical and stylistic usage in proofreading and editing. An introduction to library resources lays the foundation for research. Topics include writing analysis and practice, revision, and research. Students write a research paper using library resources and using a formatting and documentation style appropriate to the purpose and audience. (Associate degree level course) Contact hours: Class - 3, Lab - 0. Credit hours: 3. (E)

ENGL 1102 Literature and Composition (Prerequisite: ENGL 1101) This course develops
writing skills beyond the levels of proficiency required by ENGL 1101. ENGL 1102 emphasizes the student's ability to read literature analytically and meaningfully and to communicate clearly. Students analyze the form and content of literature in historical and philosophical contexts. Topics include reading and analysis of fiction/nonfiction, poetry, and drama; research; and writing about literature. (Associate degree level course) Contact hours: Class - 3, Lab - 0. Credit hours: 3. (E)

ENGL 1105 Technical Communications (Prerequisite: ENGL 1101) This course emphasizes practical knowledge of technical communications techniques, procedures, and reporting formats used in industry and business. The topics include reference use and research; device and process description; formal technical report writing; business correspondence; and technical report presentation. (Associate degree level course) Contact hours: Class – 3, Lab - 0. Credit hours: 3. (T)

ENGL 2110 World Literature (Prerequisite: ENGL 1101 and ENGL 1102) This course explores the history of the human experience through literature and writing across the cultures of the world. Surveys of important works across multiple genres of fiction and non-fiction as a reflection of cultural values. Explores themes from the ancient through modern era. (Associate degree level course) Contact hours: Class – 3, Lab - 0. Credit hours: 3. (E)

ENGL 2130 American Literature (Prerequisite: ENGL 1101 and ENGL 1102) This course emphasizes American literature as a reflection of culture and ideas. A survey of important works in American literature includes a variety of literary genres: short stories, poetry, drama, nonfiction, and novels. Topics include literature and culture, essential themes and ideas, literature and history, and research skills. (Associate degree level course) Contact hours: Class – 3, Lab - 0. Credit hours: 3. (E)

ENGT 1000 Introduction to Engineering Technology (Prerequisite: Math 099; Corequisite: ECET 1101) Provides a study of engineering technology as a career field and describes the knowledge and skills required for academic and occupational success. Topics include: engineering technology career, measurement and standards, mathematical operators, engineering tools, and engineering concepts. Labs reinforce mathematical, mechanical and electrical concepts through practical exercises, such as measurement and calculation of density of objects, relative humidity, use of digital multi-meter, building circuits, use of precision instruments, and team exercises. Contact hours: Class - 2, Lab - 3. Credit hours: 3. (E)

FYES 1000 First Year Experience (Prerequisite: ENGL 0096 and READ 0096) The first-year experience course is designed to connect and acclimate new students to Gwinnett Technical College. In addition, the course creates an awareness of various campus resources and the academic skills necessary to achieve educational and career success. Through the use of academic strategies, self-discovery, and technology, students will develop college-level learning and success skills necessary to be successful. Contact hours: Class – 2, Lab – 0. Credit hours: 2. (E)

GIFS 1101 Introduction to Geographic Information Systems (Prerequisite: Provisional Admission) An introduction to the principles and applications of Geographic Information Systems and basic use of a hand-held Global Positioning System (GPS) unit in the field. Examines applications of geographic information including data structure, spatial analysis, data management, data visualization, and data retrieval. Emphasis is placed on the interdisciplinary nature of GIS and its relevance to industry and society. Students will also acquire skills in introduction to terminology, hardware, and technology used in GPS. Contact hours: Class – 2, Lab – 4. Credit hours: 4. (F)

GIFS 1103 Intermediate GIS (Prerequisite: Provisional Admission; GIFS 1101) This GIS course prepares students for geographic analysis. The course introduces students to the use of software tools in geographic and database analysis and provides practical experience in the use of GIS software for spatial analysis. Contact hours: Class -2, Lab - 4. Credit hours: 4. (F)

GIFS 1109 Special Topics in GIS (Prerequisite: GIFS 1103) This course allows instructors to cover topics that are specifically related to their service area. Examples of projects are: precision agriculture, fire and crime, water usage, historical data, and utility layouts. Students will be assigned a project that will benefit them in employment for their current service area. Contact hours: Class – 2, Lab – 4. Credit hours: 4. (Sp)

GIFS 1122 GIS in Science, Business, and Government (Prerequisite: GIFS 1103) This course includes an in-depth survey of the various ways that GIS applications are being used in natural resources, government (city, county, state, and federal) and business. Topics will include data acquisition, accuracy, analysis, and presentation techniques necessary for various GIS applications. Contact hours: Class - 2, Lab - 4. Credit hours: 4. (Sp)

HIMT 1100 Introduction to Health Information Technology (Prerequisite: Program Admission) This course focuses on orienting the student to health information management. Topics include introducing students to the structure of healthcare in the United States and its providers, and the structure and function of the American Health Information Management Association (AHIMA). Contact hours: Class - 2, Lab - 2. Credit hours: 3. (T)

HIMT 1150 Computer Applications in Healthcare (Prerequisite: Program Admission) Designed to provide students with computer and software skills used in medical offices. Topics include hardware and software components of computers for medical record applications; database software and information management; specialized information management
systems in healthcare; methods of controlling confidentiality and patient rights; accuracy and security of health information data in computer systems as well as future directions of information technology in healthcare. Contact hours: Class - 1, Lab - 4. Credit hours: 3. (T)

HIMT 1200 Legal Aspects of Healthcare
(Prerequisite: Program Admission) This course focuses on the study of legal principles applicable to health information, patient care and health records. Topics include: working of the American Legal System, courts and legal procedures, principles of liability, patient record requirements, access to health information, confidentiality and informed consent, the judicial process of health information, specialized patient records, risk management and quality assurance, HIV information, and the electronic health record. Contact hours: Class - 2, Lab - 2. Credit hours: 3. (T)

HIMT 1250 Health Record Content and Structure
(Prerequisite: Program Admission) This course provides a study of content, storage, retrieval, control, retention, and maintenance of health information. Topics include: health data structure, content and standards, healthcare information requirements and standards. Contact hours: Class - 1, Lab - 2. Credit hours: 2. (T)

HIMT 1350 Pharmacotherapy
(Prerequisite: Program Admission; BUSN 2300 or ALHS 1090) Introduces drug therapy with emphasis on safety, classification of drugs, their action, side effects, and/or adverse reactions. Also introduces the basic concept used in the administration of drugs. Topics include: introduction to pharmacology, sources and forms of drugs, drug classification, and drug effects on the body systems. Contact hours: Class - 2, Lab - 0. Credit hours: 2. (T)

HIMT 1400 Coding and Classification I – ICD Basic
(Prerequisite: Program Admission, BIOL 2114 and BIOL 2114L and ALHS 1090 or BUSN 2300; Prerequisite/Corequisite: HIMT 1350) This course provides the student an introduction to Medical Coding & Classification of diseases, injuries, encounters, and procedures using standard applications of Medical Coding Guidelines to support reimbursement of healthcare services. Contact hours: Class - 2, Lab - 4. Credit hours: 4. (F)

HIMT 1410 Coding and Classification II – ICD Advanced
(Prerequisite/Corequisite: HIMT 1400) This course is a continuation of HIMT 1400 (Coding and Classification I). This course provides the student with case studies for in-depth review of inpatient and outpatient record formats as found in current healthcare settings. Advanced coding skills and use of industry applications to apply coding and billing standards will be the focus to develop auditing and compliance strategies in the work setting. Contact hours: Class - 2, Lab - 2. Credit hours: 3. (T)

HIMT 2150 Healthcare Statistics
(Prerequisite: MATH 1111; Corequisite: HIMT 2200) This course analyzes the study of methods and formulas used in computing and preparing statistical reports for health care services and vital records. It also focuses on the study of methods and techniques used in presenting statistical data. Contact hours: Class - 1, Lab - 4. Credit hours: 3. (T)

HIMT 2200 Performance Improvement
(Prerequisite: Program Admission; HIMT 1100) This course introduces the students to the peer review and the role health information plays in evaluating patient care. The course investigates the components of performance improvement programs in health care facilities, including quality assessment, utilization management, risk management, and critical clinical pathways. State and local standards are included as well as review of the federal government’s role in health care and accreditation requirements of various agencies. Contact hours: Class - 2, Lab - 2. Credit hours: 3. (T)

HIMT 2300 Healthcare Management
(Prerequisite: Program Admission; HIMT 1100, HIMT 1200) This course will engage in the functions of a manager, planning, organizing, decision making, staffing, leading or directing, communication and motivating. Further study will include principles of authority/ responsibility, delegation and effective communication, organization charts, job descriptions, policies and procedures, employee motivation, discipline and performance evaluation. Contact hours: Class - 2, Lab - 2. Credit hours: 3. (T)

HIMT 2400 Coding and Classification III – CPT/HCPCS
(Prerequisite: HIMT 1400) This course provides an introduction to, and application of, codes using CPT/HCPCS system. Codes will be applied to workbook exercises, case studies, and actual outpatient charts. Codes will be assigned manually as well as by an encoder. Contact hours: Class - 1, Lab - 4. Credit hours: 3. (T)

HIMT 2410 Revenue Cycle Management
(Prerequisite: HIMT 1400) This course focuses on how the revenue cycle is impacted by various departments within the facility such as patient access-registration, case management/quality review, health information management, and patient accounting. Subjects include insurance plans, medical necessity, claims processing, accounts receivable, chargemaster, DRGs, APCs, edits, auditing and review. ICD and CPT coding as they relate to the billing function will be reviewed. The importance of revenue cycle management for fiscal stability is emphasized. Contact hours: Class - 2, Lab - 2. Credit hours: 3. (T)

HIMT 2460 Health Information Technology Practicum
(Prerequisite: HIMT 1200, HIMT 1250; Prerequisite/Corequisite: HIMT 2400) This course will allow students to perform advanced functions of a health information management (HIM) department. Students will work in realistic work environments in either a traditional, non-traditional, or lab setting. Activities will include application of all HIMT coursework.
The student will also learn professional skills to prepare them for employment in the HIM career field. Contact hours: Class - 0, Lab - 9. Credit hours: 3. (T)

HIST 1111 World History I (Prerequisite: Degree level proficiency in English and reading; or ENGL 0098 and READ 0098 or ENGL 0988) Emphasizes the study of intellectual, cultural, scientific, political, and social contributions of the civilizations of the world and the evolution of these civilizations during the period from the prehistoric era to early modern times. Topics include: the Prehistoric Era, the Ancient Near East, Ancient India, Ancient China, Ancient Rome, Ancient Africa, Islam, the Americas, Japan, Ancient Greece, the Middle Ages, and the Renaissance. (Associate degree level course) Contact hours: Class - 3, Lab - 0. Credit hours: 3. (T)

HIST 1112 World History II (Prerequisite: Degree level proficiency in English and reading; or ENGL 0098 and READ 0098 or ENGL 0988) The course is a study of the intellectual, cultural, scientific, political, and social contributions of the civilizations of the world, and the evolution of these civilizations during the period from early modern times to the present. Topics include: transitions to the Modern World; scientific revolution and the Enlightenment; political modernization; economic modernization; imperialism; and the Twentieth Century. (Associate degree level course) Contact hours: Class - 3, Lab - 0. Credit hours: 3. (F)

HIST 2111 U. S. History I (Prerequisite: Degree level proficiency in English and reading; or ENGL 0098 and READ 0098 or ENGL 0988) Emphasizes the study of U. S. History to 1877 to include the post-Civil War period. The course focuses on the period from the Age of Discovery through the Civil War to include geographical, intellectual, political, economic and cultural development of the American people. It includes the history of Georgia and its constitutional development. Topics include colonization and expansion; the Revolutionary Era; the New Nation; nationalism, sectionalism, and reform; the Era of Expansion; and crisis, Civil War, and reconstruction. (Associate degree level course) Contact hours: Class - 3, Lab - 0. Credit hours: 3. (Sp)

HIST 2112 U. S. History II (Prerequisite: Degree level proficiency in English and reading; or ENGL 0098 and READ 0098 or ENGL 0988) Emphasizes the study of U. S. History from 1865 to the beginning of the twenty-first century and will equip the student to better understand the problems and challenges of the contemporary world in relation to events and trends in modern American history. The course also provides an overview of the history of Georgia and the development of its constitution. Topics include the Reconstruction Period; the great West, the new South, and the rise of the debtor; the Gilded Age; the progressive movement; the emergence of the U. S. in world affairs; the Roaring Twenties; the Great Depression; World War II; the Cold War and the 1950's; the 1960's and 1970's; and America since 1980.. (Associate degree level course) Contact hours: Class - 3, Lab - 0. Credit hours: 3. (Su)

HITC 1005 Health Management Information Systems (Prerequisite: Program Admission; Diploma level proficiency in English, reading and math; Corequisites: HITC 1050, 1055, 1075) The field of Health Information Technology (HIT) focuses on information technology processes needed to accurately store and retrieve patient data within the guidelines of federal and often state regulations. This survey course introduces students to health information technology (HIT) and to the complex United States (U.S.) healthcare environment within which it operates. Specific topics include the history of health IT standards, health-related data structures, software applications such as computerized order entry, clinical decision support and enterprise architecture for health care and public health organizations. Finally, it presents students with a look at factors shaping the future of HIT, including population health, data security, "big data" analytics, interoperability, Internet of Things technologies (IoT) and augmented reality (AR). Contact hours: Class - 3, Lab - 0. Credit hours: 3. (E)

HITC 1020 Introduction to Information and Computer Science (Prerequisite: Program Admission; Diploma level proficiency in English, reading and math; Corequisite: HITC 1005) This course is designed for students without an IT background. It provides a basic overview of computer architecture; data organization, representation and structure; structure of programming languages; networking and data communication. It also includes basic terminology of computing and a critical overview of security. Contact hours: Class - 2, Lab - 0. Credit hours: 2. (E)

HITC 1040 Fund. Of Health Workflow Process Analysis & Redesign (Prerequisite: Diploma level proficiency in English, reading and math; HITC 1075) The fundamentals of health workflow process analysis and redesign are critical components of complete practice automation. This course is an introduction to analysis and redesign. It includes topics such as process analysis, mapping theory, acquiring clinical process knowledge, process validation, and change management. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (E)

HITC 1045 Quality Improvement (Prerequisite: Diploma level proficiency in English, reading and math; HITC 1075) Introduces the concepts of health IT and practice workflow redesign as instruments of quality improvement. Addresses establishing a culture that supports increased quality and safety. Discusses approaches to assessing patient safety issues and implementing quality management and reporting through electronic systems. Contact hours: Class - 2, Lab - 0. Credit hours: 2. (E)

HITC 1050 Usability & Human Factors (Prerequisite: Program Admission; Diploma level proficiency in English, reading and math; Corequisites: HITC 1005,
HITC 1055, HITC 1075) The course is an introduction to the basic aspects of usability and human factors. Topics include rapid prototyping, user-centered design and evaluation, as well as usability. Students will learn to understand the effects of new technology and workflow on downstream processes. Course includes facilitation of a unit-wide focus group or simulation. Contact hours: Class - 2, Lab - 0. Credit hours: 2. (E)

HITC 1055 Networking & Health Information Exchange (Prerequisite: Program Admission; Diploma level proficiency in English, reading and math; Corequisites: HITC 1005, HITC 1050, HITC 1075) This course examines current technologies used to share health information and the regulatory environment governing both the technologies and patient data. It presents the hardware infrastructure integral to HIT and Health Information Exchange (HIE) systems including wires, wireless, and devices supporting them, the ISO stack, standards, Internet protocols, federations, and HIT grids. It also scrutinizes the need for software certification and regulation as well as data privacy and security regulation and legislation. To that end, this course analyzes the Nationwide Health Information Network (NHN) and other sets of data and interoperability standards, services, and policies that enable secure health information exchange. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (E)

HORT 1010 Woody Ornamental Plant Identification I (Prerequisite: Provisional Admission) Provides the students with experiential learning to help them become “team players” on project team assignments. Students learn the various project roles, the importance of communication, and the dynamics of group cohesion. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (E)

HITC 1075 Networking & Health Information Exchange (Prerequisite: Program Admission; Diploma level proficiency in English, reading and math; Corequisites: HITC 1005, HITC 1050, HITC 1075) This course examines current technologies used to share health information and the regulatory environment governing both the technologies and patient data. It presents the hardware infrastructure integral to HIT and Health Information Exchange (HIE) systems including wires, wireless, and devices supporting them, the ISO stack, standards, Internet protocols, federations, and HIT grids. It also scrutinizes the need for software certification and regulation as well as data privacy and security regulation and legislation. To that end, this course analyzes the Nationwide Health Information Network (NHN) and other sets of data and interoperability standards, services, and policies that enable secure health information exchange. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (E)

HITC 1070 Introduction to Project Management: Planning and Managing HIT Projects (Prerequisite: Diploma level proficiency in English, reading and math; HITC 1075) This is a lecture survey course centered around a of project management. This course provides students with experiential learning to help them become “team players” on project team assignments. Students learn the various project roles, the importance of communication, and of group cohesion. This course also surveys the fundamentals of project management, from selection to implementation, closure, and transition. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (E)

HITC 1055 Networking & Health Information Exchange (Prerequisite: Program Admission; Diploma level proficiency in English, reading and math; Corequisites: HITC 1005, HITC 1050, HITC 1075) This course examines current technologies used to share health information and the regulatory environment governing both the technologies and patient data. It presents the hardware infrastructure integral to HIT and Health Information Exchange (HIE) systems including wires, wireless, and devices supporting them, the ISO stack, standards, Internet protocols, federations, and HIT grids. It also scrutinizes the need for software certification and regulation as well as data privacy and security regulation and legislation. To that end, this course analyzes the Nationwide Health Information Network (NHN) and other sets of data and interoperability standards, services, and policies that enable secure health information exchange. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (E)

HITC 1075 Working in Health IT Systems (Prerequisite: Program Admission; Diploma level proficiency in English, reading and math; Corequisites: HITC 1005, HITC 1050, HITC 1075) This course provides hands-on experience in health information technology (HIT) systems and environments. It gives students an opportunity to troubleshoot network and other technical errors in a realistic environment and underscores the need for standards and regulations. Students also study the culture of healthcare and the roles they may play on an IT team in this environment. Students with field internships may replace course exercises and assignments per prior agreement between the student and the instructor. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (E)

HITC 1080 Public Health Information Technology (Prerequisite: Diploma level proficiency in English, reading and math; HITC 1075) This class describes health IT specific requirements and applications that are typical to public health agencies. The unit will provide an overview of specialized public health applications such as registries, epidemiological databases, bio-surveillance, and situational awareness and emergency response. The course also includes information exchange issues specific to public health. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (E)

HITC 1085 Installation & Maintenance of Health IT Systems (Prerequisite: Diploma level proficiency in English, reading and math; HITC 1075) This applied course gives instruction in installation and maintenance of health IT systems. Coverage includes pre-implementation testing as well as an introduction to the underlying principles of system configuration. Hands-on experiences in computer labs and on-site in health organizations, with differing experiences each offering, as community partners are available. Contact hours: Class - 1, Lab - 1. Credit hours: 2. (E)

HITC 1090 Configuring Electronic Health Records (EHRs) (Prerequisite: Diploma level proficiency in English, reading and math; HITC 1075) This course provides a practical experience with a laboratory component (utilizing the VistA for Education program). The course addresses basic approaches to assessing, selecting, and configuring EHRs to meet the specific needs of customers and end-users. Other practical experiences may be introduced at the discretion of the instructor. Contact hours: Class - 1, Lab - 1. Credit hours: 2. (E)

HITC 1095 Special Topics Course on Vendor-Specific Systems (Prerequisite: Diploma level proficiency in English, reading and math; HITC 1075) This course provides a lecture-guided overview of the most frequently adopted vendor systems. The course highlights, compares, and contrasts the features of each system as they relate to practical deployments. Contact hours: Class - 2, Lab - 2. Credit hours: 3. (E)

HORT 1000 Horticulture Science (Prerequisite: Provisional Admission) Introduces the fundamentals of plant science and horticulture as a career field. Emphasis will be placed on an industry overview; plant morphology; plant physiology; environmental factors affecting horticulture practices; soil physical and chemical properties; fertilizer elements and analysis; and basic propagation techniques. Contact hours: Class - 2, Lab - 2. Credit hours: 3. (E)

HORT 1010 Woody Ornamental Plant Identification I (Prerequisite: Provisional Admission) Provides the
basis for a fundamental understanding of the taxonomy, identification, and culture requirements of woody plants. Topics include: introduction to woody plants, classification of woody plants, and woody plant identification and culture requirements. Contact hours: Class - 1, Lab - 4. Credit hours: 3. (F, Sp)

HORT 1020 Herbage Plant Identification (Prerequisite: Provisional Admission) Emphasizes the identification, selection, and cultural requirements of herbaceous plants. Topics include: introduction to herbaceous plants, plant classification and nomenclature of herbaceous plants, herbaceous plant identification and culture requirements and seasonal color management. Contact hours: Class - 2, Lab - 2. Credit hours: 3. (F, Sp)

HORT 1030 Greenhouse Management (Prerequisite: Provisional Admission) This course helps to prepare students for a career in the management of commercial greenhouses, conservatories and institutional greenhouses. Emphasis is placed on greenhouse construction; operation and management; regulating and controlling the environment; applying cultural practices as they affect plant physiological processes and influence plant growth and development; and management of a greenhouse business. Contact hours: Class – 2.5, Lab – 3.5. Credit hours: 4. (Sp)

HORT 1041 Landscape Construction (Prerequisite: Provisional Admission) This course develops fundamental skills in landscape construction with an emphasis on landscape grading, drainage, retaining walls, and pavements. Topics include workplace safety, site preparation, project layout, construction methods, sequencing, and managerial functions. Contact hours: Class – 2.5, Lab – 3.5. Credit hours: 4. (F)

HORT 1050 Nursery Production and Management (Prerequisite: Provisional Admission) Develops skills necessary to propagate and produce both container and field grown nursery stock. Topics include: industry overview, facility design, propagation techniques and environment, field grown and container production, and managerial functions for nursery production. Contact hours: Class – 2.5, Lab – 3.5. Credit hours: 4. (F)

HORT 1060 Landscape Design (Prerequisite: Provisional Admission) Introduces design principles, drawing skills, and plant selection techniques required to produce landscape plans for residential/commercial clients. Topics include: landscape design principles, sketching and drawing skills, site analysis, plant and material selection, and landscape design process. Contact hours: Class – 2.5, Lab – 3.5. Credit hours: 4. (Sp)

HORT 1070 Landscape Installation (Prerequisite: Provisional Admission) This course develops skills needed for the proper selection, installation, and establishment of landscape trees, shrubs, groundcovers, turf, and flowers. Topics include workplace safety, interpreting a landscape plan, soil preparation, planting methods, post care and establishment, and managerial functions for landscape installers. Contact hours: Class – 2.5, Lab – 3.5. Credit hours: 4. (Sp)

HORT 1080 Pest Management (Prerequisite: Provisional Admission) This course provides an introduction to the principles and mechanisms of integrated pest management across a diverse array of pests including insects, weeds, plant pathogens, nematodes and vertebrates. Specifically, the course will provide students with a fundamental and practical understanding of integrated pest management in a landscape setting with emphasis on pest identification and control; pesticide application safety; and legal requirements for state licensure. Contact hours: Class - 2, Lab - 2. Credit hours: 3. (F, Sp)

HORT 1100 Introduction to Sustainable Agriculture (Prerequisite: Provisional Admission) Introduces the fundamentals of small scale agriculture with a sustainable approach. Emphasis will be placed on an industry overview, history and foundation of sustainable practices, management and fertility of soils, pest management, and economic and marketing theory and practices. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (F)

HORT 1110 Small Scale Food Production (Prerequisite: Provisional Admission) Continues hands-on experience in food-crop production to be sold direct to the consumer, at farmers markets or CSA (Community Sponsored Agriculture). Topics include farm safety, farm design and development, propagation, production, harvesting, packaging, and marketing. Contact hours: Class – 2.5, Lab – 3.5. Credit hours: 4. (Sp)

HORT 1120 Landscape Management (Prerequisite: Provisional Admission) This course introduces cultural techniques required for proper landscape management with emphasis on practical application and managerial techniques. Topics include: landscape management, safe operation and maintenance of landscape equipment, and administrative functions for landscape managers. Contact hours: Class – 2.5, Lab – 3.5. Credit hours: 4. (Sp)

HORT 1140 Horticulture Business Management (Prerequisite: Provisional Admission) This course presents managerial techniques required for business success in a chosen horticultural field. All aspects of establishing and managing a small business will be addressed. Emphasis will be placed on strategic planning; financial management; marketing strategies; human resource management; and operations and administration. Contact hours: Class - 2, Lab - 2. Credit hours: 3. (F)

HORT 1150 Environmental Horticulture Internship (Prerequisite: Provisional Admission) Provides the student with practical experience in an actual job setting. This internship allows the student to become involved in on-the-job environmental horticulture applications that require practice and follow through. Topics include: work ethics, skills, and attitudes;
demands of the horticulture industry; horticultural business management; and labor supervision. Contact hours: Class - 0, Lab - 9. Credit hours: 3. (Sp)

HORT 1160 Landscape Contracting (Prerequisite: Provisional Admission) Provides essential knowledge and skills in landscape contracting with emphasis on landscape business practices and principles, landscape bidding and estimating and managerial skills for the landscape business environment. Topics include: overview of landscape industry, landscape business principles and practices, landscape bidding and estimating and managerial skills for the landscape business environment. Contact hours: Class - 2, Lab - 2. Credit hours: 3. (F)

HORT 1200 Arboriculture Science (Prerequisite: Provisional Admission) Introduces the fundamentals of tree management, establishment and assessment as a career field in the urban forestry environment. Topics include: tree structure and function, tree identification and selection, installation and establishment, tree management, trees and construction and tree worker safety. Contact hours: Class – 2.5, Lab – 3.5. Credit hours: 4. (Sp)

HORT 1250 Plant Production and Propagation (Prerequisite: Provisional Admission) This course provides instruction and hands-on experience in crop production with emphasis on the production of seasonal crops for the local areas and managerial skills involved with crop production. The technical principles of plant propagation focusing on hands-on application are introduced. Topics include cultural controls for propagation and production, insects and diseases, production and scheduling, methods of propagation (seed germination, rooting cuttings, layering, grafting, and budding, tissue culture), and propagation facilities construction. Contact hours: Class – 2.5, Lab – 3.5. Credit hours: 4. (Su)

HORT 1310 Irrigation and Water Management (Prerequisite: Provisional Admission) Provides students with exposure to the basic principles of hydraulics and fluidics. Special attention is given to watering plant materials in various soil and climatic conditions through the use of irrigation. Topics include: industry overview; fluidics and hydraulics; system design and installation. Contact hours: Class – 2.5, Lab – 3.5. Credit hours: 4. (Sp)

HORT 1330 Turfgrass Management (Prerequisite: Provisional Admission) A study of turfgrass used in the southern United States. Topics include: industry overview, soil and soil modification; soil fertility; turf installation; turf maintenance, turf diseases, insects and weeds; and estimating costs on management practices. Contact hours: Class – 2.5, Lab – 3.5. Credit hours: 4. (Su)

HORT 1410 Soils (Prerequisite: Provisional Admission) This course introduces students to the basic fundamentals of soil science including: soil formation and classification; physical, chemical and biological characteristics; soil fertility and productivity; and soil management and conservation practices. Contact hours: Class - 2, Lab - 2. Credit hours: 3. (Sp)

HORT 1420 Golf Course Design Construction and Management (Prerequisite: Provisional Admission) Introduces basic golf course design principles as well as construction and renovation activities and basic golf course maintenance practices. Topics include: introduction and history, golf course design principles, golf course construction and golf course maintenance. Contact hours: Class - 2, Lab - 2. Credit hours: 3. (Sp)

HORT 1430 Advanced Landscape Design (Prerequisite: HORT 1060) This course familiarizes students with approaches to garden and small outdoor space design. Students will examine various approaches to color and design theory relevant to designing gardens and outdoor spaces. Topics include history of design, landscape design principles and elements, sketching and drawing skills, design analysis, garden design styles, plant material selection and the development of a garden planting plan. Contact hours: Class – 2.5, Lab – 3.5. Credit hours: 4. (F)

HORT 1440 Landscape Grading and Drainage (Prerequisite: Provisional Admission) Allows students to become familiar with basic site grading procedures that promote proper site drainage. This course emphasizes a hands-on approach to grading using hand and machine-driven equipment. Topics include: overview of grading and drainage, topographic map reading and evaluation, basic surveying procedures and equipment usage, site analysis and drainage design and installation, grading equipment operation and safety and grading landscape areas. Contact hours: Class - 3, Lab - 3. Credit hours: 4. (F)

HORT 1500 Small Gas Engine Repair and Maintenance (Prerequisite: Provisional Admission) Provides instruction in basic small engine maintenance. Topics include: engine types; ignition systems; fuel systems; lubrication, filtration, and maintenance; and engine repair. Contact hours: Class – 2.5, Lab – 3.5. Credit hours: 4. (F)

HORT 1560 Computer-Aided Landscape Design (Prerequisite: HORT 1060) Introduces computer aided landscape design techniques and used in landscape design projects. Emphasis is placed on practical application of landscape design processes through use of computer applications. Topics include: software commands; scale and layers operations; and drawing and design. Contact hours: Class – 2.5, Lab – 3.5. Credit hours: 4. (Sp)

HORT 1680 Woody Plant Identification II (Prerequisite: Provisional Admission) Students will develop a systematic approach to proper classification, nomenclature, identification, culture and use of many different woody plant species suitable for the region. Topics include: principles of plant classification and nomenclature, identification traits of woody plants and identification, culture and use of woody landscape plant species. Contact hours: Class - 2, Lab - 2. Credit hours: 3. (Su)
HORT 1690 Horticulture Spanish (Prerequisite: Provisional Admission) An introduction to the Spanish language and Latino culture as applied to green industry managers. Topics include: introductory conversational Spanish with an emphasis on green industry vocabulary in the areas of Spanish verbs, nouns and grammar and understanding and appreciating aspects of Latino culture for more effective management. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (Sp)

HORT 1700 Large Equipment Operation (Prerequisite: Provisional Admission) This course will allow students to gain significant experience in the safe operation of horticulture equipment. Students will gain experience in the operation of tractors and attachments, skid-steer equipment, trenchers, landscape maintenance equipment and any other equipment relevant to the landscape industry. The course will combine lectures, demonstrations and lab activities on equipment use, operation and safety in the field. Contact hours: Class - 1, Lab - 4. Credit hours: 3. (Su)

HORT 1720 Introductory Floral Design (Prerequisite: Provisional Admission) This course introduces the basic concepts and practices of floral design. Topics include: introduction to floral design; principles and elements of design used in floral compositions; identification of commonly used floral materials; conditioning and storing cut flowers; mechanics and supplies of flower arranging; construction of basic geometric designs; and corsage construction. (Lab fee required) Contact hours: Class – 2.5, Lab – 3.5. Credit hours: 4. (F)

HORT 1730 Advanced Floral Design (Prerequisite: HORT 1720) Advanced floral design theory; techniques and skills which enhances students' ability to design with cut and dried floral materials with emphasis on party, wedding, sympathy and high-style floral designs. Contact hours: Class – 2.5, Lab – 3.5. Credit hours: 4. (Sp)

HORT 1750 Interiorscaping (Prerequisite: Provisional Admission) Develops the skills in designing, installing, and maintaining interior plantings. Topics include: industry overview, environmental requirements, nutrient requirements, maintenance practices, plant disorders, design, and installation. Contact hours: Class – 2.5, Lab – 3.5. Credit hours: 4. (Su)

HORT 1800 Urban Landscape Issues (Prerequisite: Provisional Admission) This course introduces the concepts and principles of sustainable urban landscapes. By using these concepts the student will be able to create outdoor spaces that are not only functional and maintainable, but environmentally sound, cost effective and aesthetically pleasing. The design process is the first consideration, followed by implementation and maintenance, each with sustainability as a major consideration. The course will cover such topics as green roofs, water wise principles, rain gardens, pervious paving, LEED, erosion and sedimentation control and others. Contact hours: Class – 2. Lab - 2. Credit hours: 3. (F)

HORT 2249 Flower Shop Management (Prerequisite: HORT 1720) Introduces the student to the development and operational procedures of a floral business. Emphasis will be on both traditional and high style design as a business. Topics include: overview of the floral industry and starting a floral business. Contact hours: Class - 2, Lab - 2. Credit hours: 3. (Su)

HORT 2500 Specialty Landscape Construction (Prerequisite: Provisional Admission) This course is designed to introduce construction methods, materials, and safety procedures related to the design and installation of specialty landscape features such as water features, lighting, and garden structures. Contact hours: Class – 2.5, Lab – 3.5. Credit hours: 4. (Su)

HRTM 1100 Introduction to Hotel, Restaurant, and Tourism Management (Prerequisite: Provisional Admission) Provides the student with an overview of occupations in the hospitality industry. Emphasizes the various segments of each occupation and the interrelated responsibilities for customer service which exist across the hospitality industry. Topics include: development of the hospitality industry, food and beverage services, hotel services, meeting and convention services, management's role in the hospitality industry, and hospitality industry trends. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (F, W, Sp)

HRTM 1110 Travel Industry and Travel Geography (Prerequisite: Provisional Admission) Introduces students to the importance of the travel agent in the hospitality industry and provides an understanding of international, national, state, major cities and their points of interest to the travel customer. Emphasis is placed on career options, industry trends, travel documents, identifying why people travel and how geography is linked to their needs. Topics include: terminology, agency operations, travel reference guides, airline industry, other transportation modes, hotels and resorts, individual travel needs, travel and tourism careers, miscellaneous services, geographical and physical aspects of the Americas and Greenland, Europe, Middle East and Africa, Far East, Australia, New Zealand and Pacific Islands, and travel regulations and documents needed to travel internationally. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (F)

HRTM 1120 Tour and Cruise Management (Prerequisite: Provisional Admission) Provides students with an orientation to the duties and responsibilities of the tour operator and an overview of the cruise industry. The course also gives students an opportunity to gain the technical knowledge and skills needed to utilize computerized reservation and information systems. Emphasis is placed on the operator's role in planning and conducting tours and cruises as well as accessing data bases and identifying options which satisfy customer's needs. Topics include: planning individual tours, planning group tours, transportation arrangements,
accommodation options, entertainment options, foreign country tours, and manager's on-tour responsibilities the ship, living quarters, amenities, shipboard activities, and marketing, selling of cruises, agency computer hardware, computer reservation systems, automated travel information, back-room accounting, and trends in automated travel data systems. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (F)

HRTM 1130 Business Etiquette and Communication (Prerequisite: Provisional Admission) This course focuses on professionalism in a variety of business settings. Topics include professional image and conduct at work, telephone etiquette, table manners, oral and written communication skills, and diversity in the hospitality industry. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (F)

HRTM 1140 Hotel Operations Management (Prerequisite: Provisional Admission) This course focuses on the organization and management of lodging operations. It covers day-to-day operations of each department in a hotel and helps students to understand what seasoned managers do. Emphasis is placed on the rooms division. Topics include corporate structures, departmental responsibilities, hotel services and staff, decision making, and industry trends. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (F)

HRTM 1150 Event Planning (Prerequisite: Provisional Admission) This course introduces students to event planning requirements. Topics include fundamentals of event planning; selecting event dates and venues; developing agendas, time lines, budgets, and contracts; marketing events, and facilitating events. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (F)

HRTM 1160 Food and Beverage Management (Prerequisite: Provisional Admission) Provides students with a study of food and beverage operations and management. Emphasis is placed on the successful operation of a food and beverage establishment. Topics include restaurants, owners, locations, and concepts; business plans, financing, and legal and tax matters; menus, kitchens, and purchasing; restaurant operations and management. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (F)

HRTM 1201 Hospitality Marketing (Prerequisite: Provisional Admission) Introduces students to marketing techniques associated with hotel/restaurant/tourism fields with emphasis on identifying and satisfying needs of customers. Topics include: marketing introduction, research and analysis, marketing strategies, marketing plans, social media marketing, branding, positioning, sales and advertising. Because of the constant change in marketing strategies in the hospitality industry, this course will also focus on new marketing techniques that are being used in the hospitality industry. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (T)

HRTM 1210 Hospitality Law (Prerequisite: Provisional Admission) Introduces the student to local, state, federal, and international laws which govern the hospitality industry. Emphasis is placed on creating a workplace where compliance with the law, adherence to ethical standards, and stressing security and loss prevention are the basis for every decision. Topics include civil law, the structure of hospitality enterprises, government agencies that impact the hospitality industry, preventative legal management, contracts, employee selection and management, duties and obligations to employees and guests, and crisis management. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (T)

HRTM 1220 Supervision and Leadership in the Hospitality Industry (Prerequisite: Provisional Admission) This courses focuses on the principles of good supervision and leadership as they apply to day-to-day hospitality operations. Topics include recruiting, selection, orientation, compensation and benefits, motivation, teamwork, coaching, employee training and development, performance standards, discipline, employee assistance programs, health and safety, conflict management, communicating and delegating, and decision making and control. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (T)

HRTM 1230 Internship (Prerequisite: HRTM 1100) Introduces students to the application and reinforcement of hotel/restaurant/travel operational principles, in an actual job placement or practicum experience. Students are acquainted with occupational responsibilities through realistic work situations and are provided with insights into management applications on the job. Topics include: problem solving, adaptability to the job setting, use of proper interpersonal skills, application of hotel/restaurant/travel management techniques, and professional development. The occupation-based instruction is implemented through the use of a practicum or internship and all of the following: written individualized training plans, written performance evaluation, and a required weekly seminar. Contact hours: Class - 0, Lab - 9. Credit hours: 3. (E)

HUMN 1101 Introduction to Humanities (Prerequisite: ENGL 1101) Explores the philosophic and artistic heritage of humanity expressed through a historical perspective on visual arts, music, and literature. The humanities provide insight into people and society. Topics include historical and cultural developments, contributions of the humanities, and research. Students experience on site art and artistic performances that go beyond the classroom. (Associate degree level course) Contact hours: Class - 3, Lab - 0. Credit hours: 3. (E)

IDFC 1007 Industrial Safety Procedures (Prerequisite: Provisional Admission) Provides an in-depth study of the health and safety practices required for maintenance of industrial, commercial, and home electrically operated equipment. Topics include: introduction to OSHA regulations; safety tools, equipment, and procedures; and first aid and cardiopulmonary resuscitation. Contact hours: Class - 1, Lab - 2. Credit hours: 2. (E)
IDFC 1011 Direct Current I (Corequisite: MATH 1012 or MATH 1013 or MATH 1111) Introduces direct current (DC) concepts and applications. Topics include: electrical principles and laws; batteries; DC test equipment; series, parallel, and simple combination circuits; and laboratory procedures and safety practices. Contact hours: Class - 2, Lab - 2. Credit hours: 3. (F)

IDSY 1100 Basic Circuit Analysis (Prerequisite: none) This course introduces direct current concepts and applications, alternating current theory and application of varying sine wave voltages and current, and the physical characteristics and applications of solid state devices. Topics include, but are not limited to, electrical laws and principles, magnetism, series, parallel, and simple combination circuits, inductance and capacitance, diodes and amplifiers, and semiconductor fundamentals. Contact hours: Class - 3, Lab - 6. Credit hours: 5. (T)

IDSY 1110 Industrial Motor Controls I (Prerequisite: none) This course introduces the fundamental concepts, principles, and devices involved in industrial motor controls, theories and applications of single and three-phase motors, wiring motor control circuits, and magnetic starters and braking. Topics include, but are not limited to, motor theory and operating principles, control devices, symbols and schematic diagrams, NEMA standards, Article 430 NEC and preventative maintenance and troubleshooting. Contact hours: Class - 2, Lab - 5. Credit hours: 4. (T)

INDS 1100 Interior Design Fundamentals (Prerequisite: Diploma level proficiency in English and reading) Emphasizes the fundamentals of design. Topics include: The Design Process, Interior Space Planning Concepts, the Principles and Elements of Design, Furniture Arrangements and Traffic Patterns, Special Needs, Introduction to Green Design and Career Exploration. Contact hours: Class - 3, Lab - 2. Credit hours: 4. (F)

INDS 1105 Faux & Decorative Painting I (Prerequisite: Diploma level proficiency in English and reading or ENGL 0097 and READ 0097) This course focuses on introductory techniques used to produce fantasy finishes on furniture and interior walls. Topics include: History of faux finishes, color mixing, technology of paint, materials usage and specific issues related to wall glazing, ragging, sponging, strie, wood graining, textured granite, stones and many other current and ancient techniques. Contact hours: Class - 1, Lab - 7. Credit hours: 4. (F)

INDS 1110 Faux & Decorative Painting II (Prerequisite: INDs 1105) This course focuses on techniques used to produce faux and fantasy finishes on furniture and walls. Topics include: business practices of the professional faux artist, color, designing with painted finishes, and advanced finish techniques. Contact hours: Class - 1, Lab - 7. Credit hours: 4. (Sp)

INDS 1115 Technical Drawing for Interior Designers (Prerequisite/Corequisite: INDs 1100) Emphasizes familiarity and skills in reading, production methods and interpreting construction drawings and graphic standards and introduces the application of drawing techniques used in interior design. Topics include: The role of working drawings, dimensioning practices, drawing representation methods, print reading, schedules and specifications, alphabet of lines, architectural style, geometric shapes, floor plan layouts, interior elevations, and interior pictorials. Contact hours: Class - 1, Lab - 9. Credit hours: 4. (Sp, Su)

INDS 1120 Codes and Building Systems for Interiors (Prerequisite/Corequisite: FYES 1000) Emphasizes familiarity with interior construction and service systems for interiors. Topics include: interior and exterior construction systems, building materials, construction documents, codes, sustainable building techniques and coordination with generalists and installers. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (F)

INDS 1125 Lighting Technologies for Interiors (Corequisite: INDs 1115) Provides basic knowledge of vision as affected by light, color, texture, and form. Introduces the basic principles of lighting design including criteria, calculations, planning, and layout. Topics include: lighting technology, lighting analysis, residential and contract lighting, lighting design, and lighting applications. Contact hours: Class - 1, Lab - 2. Credit hours: 2. (F)

INDS 1130 Materials and Resources (Prerequisite: Diploma level proficiency in English and reading, Corequisite: INDs 1100) Emphasizes the background knowledge necessary for selection of interior finishes for walls, floors (textile and non-textile), ceilings and other non-textile components needed in interior environments. Topics include: selection criteria and resourcing for interiors, documentation, specification and code compliance for finish applications. Contact hours: Class - 4, Lab - 0. Credit hours: 4. (F, Sp)

INDS 1135 Textiles for Interiors (Prerequisite: INDs 1100; Corequisite: FYES 1000) Emphasizes the background knowledge necessary for the selection of natural and man-made textile finishes and materials needed in interior environments. Topics include: selection and resourcing for interiors, documentation and specification for selected textiles in design applications. Contact hours: Class - 2, Lab - 2. Credit hours: 3. (Sp)

INDS 1145 CAD Fundamentals for Interior Design (Prerequisite: FYES 1000, INDs 1115; Corequisite: MATH 1012 or MATH 1103 or MATH 1111) Introduces basic computer language and application of computers to the field of interior design. Topics include: introduction to CAD commands and applications, techniques of setting up a drawing, use of layering, execution of commands. Contact hours: Class - 0, Lab - 7. Credit hours: 3. (Su)

INDS 1150 History of Interiors and Architecture (Corequisite: FYES 1000) Emphasizes on historical
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foundations of furniture and architecture from the Ancient through the Renaissance. Topics include: historical architectural and furniture concepts, classical orders, furniture and architectural terminology, furniture and architectural construction and materials, and historic design development. Contact hours: Class - 4, Lab - 0. Credit hours: 4. (Sp, Su)

INDS 1155 History of Interiors and Architecture II
(Prerequisite: IND 1150) Emphasis is on historical foundations of furniture and architecture from the Baroque to the present. Topics include: historical architectural and furniture concepts, furniture and architectural terminology, furniture and architectural construction and materials and historic design development. Contact hours: Class - 4, Lab - 0. Credit hours: 4. (Su)

INDS 1160 Interiors Seminar
(Corequisite: IND 1100) Emphasizes professional development through career resources and artistic exploration. Topics include: Informational Interviewing, networking, cultural development, and artistic exploration. Contact hours: Class - 1, Lab - 4. Credit hours: 3. (F)

INDS 1170 Interiors Internship
(Prerequisite: IND 1100, IND 1115; Corequisites: IND 1130, 1145, 1150) Provides students with in-depth application and reinforcement of interiors and employability principles in an actual job setting. This internship allows the student to become involved in intensive on-the-job interiors applications that require full-time concentration, practice, and follow through. The interiors internship is implemented through the use of written individualized training plans, written performance evaluations, required seminars, a required student project, and lab activities. Topics include: application of interiors principles; problem solving; adaptability to job setting; use of proper interpersonal skills; development of constructive work habits and appropriate work ethic, with consideration of factors such as confidentiality; and concentrated development of productivity and quality job performance through practice. Contact hours: Class - 0, Lab - 9. Credit hours: 3. (Su)

INDS 1175 Kitchen and Bath Internship
(Prerequisite: IND 1115, IND 1130; Prerequisite/Corequisite: IND 2505) This course provides students with in-depth application and reinforcement of kitchen and bath employability principles through working in an industry position approved by the instructor. This internship allows students to become involved in intensive kitchen and/or bath industry experience that requires full-time concentration, practice, and follow through. The kitchen and bath internship is implemented through the use of orientation held online, written performance evaluations, and mentor/sponsor site activities. Contact hours: Class - 0, Lab - 12. Credit hours: 4. (Su)

INDS 2210 Design Studio I
(Prerequisite: IND 1125, IND 1130, IND 1135; Corequisite: IND 1145, MATH 1012 or MATH 1103 or MATH 1111) Introduces current generation technology for use in design presentations. Topics include: Technological communications used within the design profession. Contact hours: Class - 0, Lab - 6. Credit hours: 3. (F)

INDS 2215 Design Studio II
(Prerequisite: IND 1125, IND 1130, IND 1135 and IND 1145; Corequisite: IND 1150, IND 2210) Provides students with long and short term projects which address real-life design situations and requires competence in solving design problems with an emphasis on residential design. Topics include: application of the principles and elements of design, space planning, materials selections, graphic presentation, project documentation and delivery, client presentation techniques. Contact hours: Class - 1, Lab - 5. Credit hours: 3. (F)

INDS 2230 Design Studio III
(Prerequisite: IND 2210; Corequisite: IND 1155) Provides students with long and short term projects which address real-life design situations and begins to develop competence in solving residential and commercial design problems. This course continues the studio experiences of IND 2215. Design Studio II. Topics include: Application of the principles and elements of design, space planning, materials selection, graphic presentation, project documentation and implementation, client presentation techniques. Contact hours: Class - 1, Lab - 6. Credit hours: 3. (Su)

INDS 2240 Business Practices for Design Professionals
(Prerequisite: Program Director Approval, IND 1115, IND 1120 and IND 1130) Capstone class utilizing all skills, knowledge, and techniques required for successful business practices in the design industry. Topics include: Professional Skill Development, Business Development Strategies, Establishing Successful Client Relationships, Resources and Service Providers, and a Portfolio Exhibit. Contact hours: Class - 3, Lab - 5. Credit hours: 5. (Sp)

INDS 2500 Basic Residential Kitchen & Bath Design
(Prerequisite: Diploma level proficiency in English and reading or ENGL 0097 and READ 0097; Prerequisite/Corequisite: FYES 1000) This course provides the student with the opportunity to learn the special considerations necessary to design and plan kitchens and baths. Topics include the study of the basic principles of kitchen/bath design and planning, proper function and layout, universal design, accurate measuring techniques, appliance, plumbing, and cabinet principles. Contact hours: Class - 3, Lab - 2. Credit hours: 4. (F)

INDS 2505 Advanced Kitchen & Bath Design
(Prerequisite: IND 1120, IND 2500; Prerequisite/Corequisite: IND 1115) This course provides the student with advanced knowledge in the design of kitchens and baths. The study and application of the National Kitchen and Bath Association's Guidelines of Planning Standards and Safety Criteria for residential kitchens and bathrooms including Universal Design concepts will be covered. Topics include the use of building codes, safety criteria, universal and accessibility criteria, theme and historical design, and
ergonomics. Contact hours: Class - 3, Lab - 2. Credit hours: 4. (F)

INDS 2510 Kitchen and Bath Solutions Thru Technology (Prerequisite: INDS 1120, INDS 2500; Prerequisite/Corequisite: INDS 1115, INDS 2505) This course provides advanced skills necessary to design and present kitchen and bath solutions through the use of current industry software applications. Project designs will be done completely on computer. Contact hours: Class - 0, Lab - 10. Credit hours: 4. (Su)

INDS 2515 Kitchen and Bath Studio (Prerequisite: INDS 1115, INDS 1120, INDS 1130, INDS 2510; Prerequisite/Corequisite: INDS 2505, 2510) This course develops advanced skills necessary to design kitchen and bath solutions using the NKBA standards and guidelines where applicable. Projects will include the complete documentation, specification, and job estimates needed to implement the design. Contact hours: Class - 1, Lab - 9. Credit hours: 4. (Sp)

LOGI 1000 Business Logistics (Prerequisite: Program Admission) Provides a general knowledge of current management practices in logistics management. The focuses of the course will be on planning, organizing, and controlling of these activities, key elements for successful management in any organization. The course will also introduce student to Transport, Inventory, and Location strategies, Customer Service Goals and Organization and Control. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (F)

LOGI 1010 Purchasing (Prerequisite: Provisional Admission) Provides a general knowledge of purchasing for today's Supply Chains. The student will be introduced to Cross-functional teaming, Purchasing and Supply Performance, Supplier Integration into new Product Development, Supplier Development, Strategic Cost Management and Total Ownership Cost (TOC), and many other topics. This course along with other Supply Chain based courses will give the student the foundation needed to make a difference in obtaining low costs, quality products for their organizations. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (F)

LOGI 1020 Materials Management (Prerequisite: Provisional Admission) This course will introduce students to materials Management by learning the planning production process, master scheduling, material requirements, and forecasting material demands and inventory levels. This course is designed to build on the student's knowledge of supply chains and how effective material management improves supply chain performance. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (Sp)

LOGI 1030 Product Lifecycle Management (Prerequisite: Provisional Admission) The core of product lifecycle management is the creation, preservation and storage of data relating to an organizations products and activities to ensure its available for daily operations. Students will learn that effective product lifecycle management is an essential tool for coping with the demanding global competition and ever-shortening product and component life cycles. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (Sp)

MAST 1010 Legal and Ethical Concerns in the Medical Office (Prerequisite: Program Admission) Introduces the basic concept of medical assisting and its relationship to the other health fields. Emphasizes medical ethics, legal aspects of medicine, and the medical assistant's role as an agent of the physician. Provides the student with knowledge of medical jurisprudence and the essentials of professional behavior. Topics include: introduction to medical assisting; introduction to medical law; physician/patient/ assistant relationship; medical office in litigation; as well as ethics, bioethical issues and HIPAA. Contact hours: Class - 2, Lab - 0. Credit hours: 2. (T)

MAST 1030 Pharmacology in the Medical Office (Prerequisite: Program Admission; MATH 1012, MATH 1111 or higher level degree math; MAST 1120) Introduces medication therapy with emphasis on safety; classification of medications; their actions; side effects; medication and food interactions and adverse reactions. Also introduces basic methods of arithmetic used in the administration of medications. Topics include: introductory pharmacology; dosage calculation; sources and forms of medications; medication classification; and medication effects on the body systems. Contact hours: Class - 4, Lab - 0. Credit hours: 4. (T)

MAST 1060 Medical Office Procedures (Prerequisite: Program Admission) Emphasizes essential skills required for the medical practice. Topics include: office protocol, time management, appointment scheduling, medical office equipment, medical references, mail services, medical records, and professional communication. Contact hours: Class - 3, Lab - 2. Credit hours: 4. (T)

MAST 1080 Medical Assisting Skills I (Prerequisite: Program Admission; ALHS 1011, ALHS 1080) Introduces the skills necessary for assisting the physician with a complete history and physical in all types of medical practices. The course includes skills necessary for sterilizing instruments and equipment and setting up sterile trays. The student also explores the theory and practice of electrocardiography. Topics include: infection control and related OSHA guidelines; prepare patients/assist physician with age and gender-specific examinations and diagnostic procedures; vital signs/mensuration; medical office surgical procedures and electrocardiography. Contact hours: Class - 1, Lab - 8. Credit hours: 4. (T)

MAST 1090 Medical Assisting Skills II (Prerequisite: Program Admission; ALHS 1011, ALHS 1090, MAST 1080) Further student knowledge of the more complex activities in a physician's office. Topics include: collection/examination of specimens and CLIA regulations/risk management; urinalysis; venipuncture; hematology and chemistry evaluations; advanced
reagent testing (Strep Test, HCG etc); administration of medications; medical office emergency procedures and emergency preparedness; respiratory evaluations; principles of IV administration; rehabilitative therapy procedures; principles of radiology safety and maintenance of medication and immunization records. Contact hours: Class - 1, Lab - 8. Credit hours: 4. (T)

MAST 1100 Medical Insurance Management
(Prerequisite: Program Admission; ALHS 1011, ALHS 1090, FYES 1000, ENGL 1010) Emphasizes essential skills required for the medical practice. Topics include: managed care, reimbursement, and coding. Contact hours: Class - 1, Lab - 3. Credit hours: 2. (T)

MAST 1110 Administrative Practice Management
(Prerequisite: Program Admission; ALHS 1011, ALHS 1090, FYES 1000, ENGL 1010) Emphasizes essential skills required for the medical practice. Topics include: electronic health records, application of computer skills, integration of medical terminology, accounting practices and application of software. Contact hours: Class - 1, Lab – 5. Credit hours: 3. (T)

MAST 1120 Human Diseases
(Prerequisite: ALHS 1090, ALHS 1011 or BIOL 2113/L and BIOL 2114/L) Provides fundamental information concerning common diseases and disorders of each body system. For each system, the disease or disorder is highlighted including: description, etiology, signs and symptoms, diagnostic procedures, treatment, management, prognosis, and prevention. Topics include: introduction to disease and diseases of body systems. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (T)

MAST 1170 Medical Assisting Externship
(Prerequisite: Program Admission) Provides students with an opportunity for in-depth application and reinforcement of principles and techniques in a medical office job setting. This clinical practicum allows the student to become involved in a work setting at a professional level of technical application and requires concentration, practice, and follow-through. Topics include: application of classroom knowledge and skills and functioning in the work environment. Contact hours: Class - 0, Lab - 18. Credit hours: 6. (T)

MAST 1180 Medical Assisting Seminar
(Prerequisite: Program Admission) Seminar focuses on job preparation and maintenance skills and review for the certification examination. Topics include: letters of application, resumes, completing a job application, job interviews, follow-up letter/call, letters of resignation and review of program competencies for employment and certification. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (T)

MATH 0097 Math II
(Prerequisite: Appropriate placement test scores and READ 0096) Emphasizes in-depth arithmetic skills needed for the study of mathematics and for the study of basic algebra. Topics include whole numbers, fractions, decimals, percents, ratio/proportion, measurement, geometry, and application problems. (Diploma level developmental course.) Contact hours: Class - 3, Lab - 0. Credit hours: 3. (E)

MATH 0098 Elementary Algebra
(Prerequisite: Appropriate placement test scores or MATH 0097 and READ 0097) Emphasizes basic algebra skills. Topics include introduction to real numbers and algebraic expressions, solving linear equations, graphs of linear equations, polynomial operations, and polynomial factoring. (Associate Degree level developmental course) Contact hours: Class - 3, Lab - 0. Credit hours: 3. (E)

MATH 0099 Intermediate Algebra
(Prerequisite: Appropriate placement test scores or MATH 0098, READ 0098 and ENGL 0098 or ENGL 0988) Emphasizes intermediate algebra skills. Topics include factoring, inequalities, rational expressions and equations, linear graphs, slope, and applications, systems of equations, radical expressions and equations, and quadratic equations. (Associate degree developmental course) Contact hours: Class - 3, Lab - 0. Credit hours: 3. (E)

MATH 1012 Foundations of Mathematics
(Prerequisite: Appropriate placement test scores or MATH 0097 and READ 0097) Emphasizes the application of basic mathematical skills used in the solution of occupational and technical problems. Topics include fractions, decimals, percents, ratios and proportions, measurement and conversion, formula manipulation, technical applications, and basic statistics. (Diploma level course) Contact hours: Class - 3, Lab - 0. Credit hours: 3. (E)

MATH 1013 Algebraic Concepts
(Prerequisite: Appropriate placement test scores or MATH 0098 and READ 0097) Introduces concepts and operations which can be applied to the study of algebra. Course content emphasizes: basic mathematical concepts; basic algebraic concepts; and intermediate algebraic concepts. Class includes lecture, applications, and homework to reinforce learning. (Diploma level course) Contact hours: Class - 3, Lab - 0. Credit hours: 3. (T)

MATH 1015 Geometry and Trigonometry
(Prerequisite: MATH 1013) Introduces and develops basic geometric and trigonometric concepts. Course content emphasizes: measurement using English and metric systems, angle measure, similar triangles, right triangles, two- and three-dimensional geometric formulas, right triangle trigonometry, oblique triangles, and laws of sine and cosine. (Diploma level course) Contact hours: Class - 3, Lab - 0. Credit hours: 3. (T)

MATH 1103 Quantitative Skills and Reasoning
(Prerequisite: Degree level proficiency or ENGL 0098, READ 0098 and MATH 0099) This course focuses on quantitative skills and reasoning in the context of experiences that students will be likely to encounter. The course emphasizes processing information in context from a variety of representations, understanding of both the information and the processing, and understanding which conclusions can be reasonably
determined. Students will use appropriate technology to enhance mathematical thinking and understanding. Topics covered in this course include: sets and set operations, logic, basic probability, data analysis, linear models, quadratic models, exponential and logarithmic models, geometry, and financial management. (Associate degree level course) Contact hours: Class - 3, Lab - 0. Credit hours: 3. (F, Sp)

MATH 1111 College Algebra (Prerequisite: Degree level proficiency in ENGL 0098, READ 0098 and MATH 0099). Emphasizes techniques of problem solving using algebraic concepts. Topics include fundamental concepts of algebra, equations and inequalities, functions and graphs, and systems of equations; optional topics include sequences, series, and probability or analytic geometry. (Associate degree level course) Contact hours: Class - 3, Lab - 0. Credit hours: 3. (E)

MATH 1112 College Trigonometry (Prerequisite: MATH 1111) Emphasizes techniques of problem solving using trigonometric concepts. Topics include trigonometric functions, properties of trigonometric functions, vectors and triangles, inverse of trigonometric functions and graphing of trigonometric functions, logarithmic and exponential functions, and complex numbers. This course is not currently taught at this college but transfer credit could be requested to meet program requirements. (Associate degree level course) Contact hours: Class - 3, Lab - 0. Credit hours: 3. (T)

MATH 1113 Precalculus (Prerequisite: MATH 1111) Prepares students for calculus. The topics discussed include an intensive study of polynomial, rational, exponential, logarithmic, and trigonometric functions and their graphs. Applications include simple maximum and minimum problems, exponential growth and decay. (Associate degree level course) Contact hours: Class - 3, Lab - 0. Credit hours: 3. (E)

MATH 1127 Introduction to Statistics (Prerequisite: Appropriate degree placement test score or ENGL 0098, READ 0098 and MATH 0099) Emphasizes the concepts and methods fundamental to utilizing and interpreting commonly used statistics. Topics include descriptive statistics, basic probability, discrete and continuous distributions, sampling distributions, hypothesis testing chi square tests, and linear regression. (Associate degree level course) Contact hours: Class - 3, Lab - 0. Credit hours: 3. (E)

MATH 1131 Calculus I (Prerequisite: MATH 1113) Topics include the study of limits and continuity, derivatives, and integrals of functions of one variable. Applications are incorporated from a variety of disciplines. Algebraic, trigonometric, exponential, and logarithmic functions are studied. (Associate degree level course) Contact hours: Class - 4, Lab - 0. Credit hours: 4. (F, Sp)

MATH 1132 Calculus II (Prerequisite: MATH 1131) This course includes the study of techniques of integration, application of the definite integral, an introduction to differential equations, polar graphs, and power series. (Associate degree level course) Contact hours: Class - 4, Lab - 0. Credit hours: 4. (F, Sp)

MGMT 1100 Principles of Management (Prerequisite: Diploma level proficiency in English and Reading) Develops skills and behaviors necessary for successful supervision of people and their job responsibilities. Emphasis will be placed on real life concepts, personal skill development, applied knowledge and managing human resources. Course content is intended to help managers and supervisors deal with a dramatically changing workplace being affected by technology changes, a more competitive and global market place, corporate restructuring and the changing nature of work and the workforce. Topics include: Understanding the Managers Job and Work Environment; Building an Effective Organizational Culture; Leading, Directing, and the Application of Authority; Planning, Decision-Making, and Problem-Solving; Human Resource Management, Administrative Management, Organizing, and Controlling. Contact hours: Class – 3, Lab - 0. Credit hours: 3. (E)

MGMT 1105 Organizational Behavior (Prerequisite: Diploma level proficiency in English and Reading) Provides a general knowledge of the human relations aspects of the senior-subordinate workplace environment. Topics include employee relations principles, problem solving and decision making, leadership techniques to develop employee morale, human values and attitudes, organizational communications, interpersonal communications, and employee conflict. Contact hours: Class – 3, Lab - 0. Credit hours: 3. (Sp, Su)

MGMT 1110 Employment Rules & Regulations (Prerequisite: Diploma level proficiency in English and Reading) Develops a working knowledge of the laws of employment necessary for managers. Topics include: Employment Law, the Courts, Alternative Dispute Resolution (ADR), Discrimination Law, Selecting Applicants Under the Law, OSHA and Safety, Affirmative Action, At-Will Doctrine, Right to Privacy, Fair Labor Standards Act (FLSA), Family Medical Leave Act (FMLA), Workers Compensation, Unemployment Compensation, and National Labor Relations Act. Contact hours: Class – 3, Lab - 0. Credit hours: 3. (Sp, Su)

MGMT 1115 Leadership (Prerequisite: Diploma level proficiency in English and Reading) This course familiarizes the student with the principles and techniques of sound leadership practices. Topics include: Characteristics of Effective Leadership Styles, History of Leadership, Leadership Models, The Relationship of Power and Leadership, Team Leadership, The Role of Leadership in Effecting Change. Contact hours: Class – 3, Lab - 0. Credit hours: 3. (E)

MGMT 1120 Introduction to Business (Prerequisite: Diploma level proficiency in English and Reading) This course is designed to provide the student with an
overview of the functions of business in the market system. The student will gain an understanding of the numerous decisions that must be made by managers and owners of businesses. Topics include: the market system, the role of supply and demand, financial management, legal issues in business, employee relations, ethics, and marketing. Contact hours: Class – 3, Lab - 0. Credit hours: 3. (E)

MGMT 1125 Business Ethics (Prerequisite: Diploma level proficiency in English and Reading) Provides students with an overview of business ethics and ethical management practices with emphasis on the process of ethical decision-making and working through contemporary ethical dilemmas faced by business organizations, managers and employees. The course is intended to demonstrate to the students how ethics can be integrated into strategic business decisions and can be applied to their own careers. The course uses a case study approach to encourage the student in developing analytical, problem-solving, critical thinking and decision-making skills. Topics include: An overview of business ethics; moral development and moral reasoning; personal values, rights, and responsibilities; frameworks for ethical decision-making in business; justice and economic distribution; corporations and social responsibility; corporate codes of ethics and effective ethics programs; business and society; consumers and the environment; ethical issues in the workplace; business ethics in a global and multicultural environment; business ethics in cyberspace; and business ethics and the rule of law. Contact hours: Class – 3, Lab - 0. Credit hours: 3. (F, Su)

MGMT 2115 Human Resource Management (Prerequisite: Diploma level proficiency in English and Reading) This course is designed as an overview of the Human Resource Management (HRM) function and of the manager and supervisors role in managing the career cycle from organizational entry to exit. It acquaints the student with the authority, responsibility, functions, and problems of the human resource manager, with an emphasis on developing familiarity with the real world applications required of employers and managers who increasingly are in partnership with HRM generalists and specialists in their organizations. Topics include: strategic human resource management, contemporary issues in HRM: ethics, diversity and globalization; the human resource/supervisor partnership; human resource planning and productivity; job description analysis, development, and design; recruiting, interviewing, and selecting employees; performance management and appraisal systems; employee training and development: disciplinary action and employee rights; employee compensation and benefits; labor relations and employment law; and technology applications in HRM. Contact hours: Class – 3, Lab - 0. Credit hours: 3. (Sp, Su)

MGMT 2120 Labor Management Relations (Prerequisite: Diploma level proficiency in English and Reading) Provides a student with an overview of the relationship of rank and file employees to management in business organizations. The nature of the workplace, the economic foundations of work organizations, and the history of the relationship between management and labor is examined. The course acquaints the student with the principles of developing positive relationships between management and labor within the context of the legal environment governing labor relations. Topics include: the nature of the American workplace; the economic history of business organizations, the historical roots of labor-management relations; adversarial and cooperative approaches to labor relations; the legal framework of labor relations; employee-employer rights; collective bargaining and union organizing processes; union and nonunion grievance procedures; international labor relations; and the future of labor-management relations in a changing economy. Case studies, readings, and role-plays are used to simulate workplace applications in labor relations. Contact hours: Class – 3, Lab - 0. Credit hours: 3. (F)

MGMT 2125 Performance Management (Prerequisite: Diploma level proficiency in English and Reading) Develops an understanding of how fostering employer/employee relationships in the work setting improves work performance. Develops legal counseling and disciplinary techniques to use in various workplace situations. Topics include: the definitions of coaching, counseling, and discipline; importance of the coaching relationship; implementation of an effective counseling strategy; techniques of effective discipline; and performance evaluation techniques. Contact hours: Class – 3, Lab - 0. Credit hours: 3. (F, Su)

MGMT 2130 Employee Training and Development (Prerequisite: Diploma level proficiency in English and Reading) Addresses the challenges of improving the performance and career potential of employees, while benefiting the student in their own preparation for success in the workplace. The focus is on both training and career and personal development. Shows the student how to recognize when training and development is needed and how to plan, design, and deliver an effective program of training for employees. Opportunities are provided for the student to develop their own career plans, assess their work-related skills, and practice a variety of skills desired by employers. Topics include: developing a philosophy of training; having systems approach to training and development; the context of training; conducting a needs analysis; critical success factors for employees: learning principles; designing and implementing training plans; conducting and evaluating training; human resource development and careers; personal career development planning; and applications in interpersonal relationships and communication. Contact hours: Class – 3, Lab - 0. Credit hours: 3. (F, Su)

MGMT 2135 Management Communication Techniques (Prerequisite: Diploma level proficiency
in English and Reading) Emphasizes developing the full range of communication strategies required to become a successful manager and prepares managers for the skills required to communicate effectively in business today. Topics include: Organizational/Strategic Communication, Interpersonal Communication, Presentation Techniques, Presentation Technology & Applications, Team/Group Communication, Intercultural Communication, External Stakeholder Communication and Using Spreadsheet Applications for Business Problem Solving. Contact hours: Class – 3, Lab - 0. Credit hours: 3. (T)

MGMT 2155 Quality Management Principles (Prerequisite: Diploma level proficiency in English and Reading) Familiarizes the student with the principles and methods of Quality Management (QM). Topics include: the history of quality control, quality control leaders, quality tools, QM implementation, team building for QM, and future quality trends. Contact hours: Class – 3, Lab - 0. Credit hours: 3. (F)

MGMT 2200 Production/Operations Management (Prerequisite: Diploma level proficiency in English and Reading) This course provides the student with an intensive study of the overall field of production/operations management. Topics include: role of production management/production managers, operational design, capacity planning, aggregate planning, inventory management, project management, and quality control/assurance. Contact hours: Class – 3, Lab - 0. Credit hours: 3. (F)

MGMT 2210 Project Management (Prerequisite: Diploma level proficiency in English and Reading) Provides a basic understanding of project management functions and processes. Topics include: team selection and management; project planning, definition and scheduling of tasks; resource negotiation, allocation, and leveling; project control, monitoring, and reporting; computer tools for project planning and scheduling; managing complex relationships between project team and other organizations; critical path methodology; and total quality management. Contact hours: Class – 3, Lab - 0. Credit hours: 3. (F, Sp)

MGMT 2215 Team Project (Prerequisite: Diploma level proficiency in English and Reading; MGMT 1100, MGMT 1120, and MGMT 1115, or MGMT 2210) This course utilizes team methodologies to study the field of management. It encourages students to discuss their perception of management practices which have been studied during the management program. Topics include: current issues and problems in management and supervision and state-of-the-art management and leadership techniques. Students will be put into teams, will work on team projects to demonstrate their understanding of the competencies of this course, and will do peer evaluation. Potential team projects could include authoring a management book covering the competencies, videos, web sites, bulletin boards, and slide presentations amongst others. Contact hours: Class – 3, Lab - 0. Credit hours: 3. (E)

MKTG 1100 Principles of Marketing (Prerequisite: Provisional Admission) This course emphasizes the trends and the dynamic forces that affect the marketing process and the coordination of the marketing functions. Topics include effective communication in a marketing environment, role of marketing, knowledge of marketing principles, marketing strategy, and marketing career paths. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (E)

MKTG 1130 Business Regulations and Compliance (Prerequisite: Provisional Admission) This course introduces the study of contracts and other legal issues and obligations for businesses. Topics include: creation and evolution of laws, court decision processes, legal business structures, sales contracts, commercial papers, Uniform Commercial Code, and risk-bearing devices. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (E)

MKTG 1160 Professional Selling (Prerequisite: Provisional Admission) This course introduces professional selling skills and processes. Topics include: professional selling, product/sales knowledge, customer analysis/relations, selling process, sales presentations, and ethics of selling. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (E)

MKTG 1190 Integrated Marketing Communications (Prerequisite: MKTG 1100) This course introduces the fundamental principles and practices associated with promotion and communication. Topics include: purposes of promotion and IMC, principles of promotion and Integrated Marketing Communication (IMC), budgeting, regulations and controls, media evaluation and target market selection, integrated marketing plans, trends in promotion, and promotion and communication career paths. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (E)

MKTG 1210 Services Marketing (Prerequisite: MKTG 1100) This course introduces the marketing skills required in a service business. Topics include: foundation of services marketing, managing service delivery/encounters, services marketing strategy, and aligning strategy service design, and standards. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (E)

MKTG 1270 Visual Merchandising (Prerequisite: MKTG 1100) This course focuses on the components of the visual merchandising of goods and services. Topics include: design and color principles, tools and materials of the trade, lighting and signs, installation of displays, store planning, safety, and related areas of visual merchandising and display. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (T)

MKTG 1280 Introduction to Sports and Recreation Management (Prerequisite: Provisional Admission) This course introduces the sociological, philosophical, economic, and historical aspects of the sports and recreation industry. Topics include: nature of sports and recreation management, sports management landscape, research and trends, programming in
sports and recreation management, employee training, evaluation and relations, fiscal topics in the business of sports and recreation, and careers in sports and recreation management. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (F)

MKTG 1370 Consumer Behavior (Prerequisite: Provisional Admission; MKTG 1100) This course analyzes consumer behavior and applicable marketing strategies. Topics include: the nature of consumer behavior, influences on consumer behavior, consumer decision-making process, role of research in understanding consumer behavior, and marketing strategies. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (T)

MKTG 2000 Global Marketing (Prerequisite: Provisional Admission; MKTG 1100) This course introduces opportunities and international strategies employed in the global marketplace. Topics include: the environment of international marketing, analyze international marketing opportunities, international market entries, design an international marketing strategy, and career paths in international marketing. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (E)

MKTG 2010 Small Business Management (Prerequisite: Provisional Admission; MKTG 1100) This course introduces competencies required in managing a small business. Topics include: nature of small business management, business management and organizational change, marketing strategies, employee relations, financial planning, and business assessment and growth. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (F, Sp)

MKTG 2030 Digital Publishing and Design (Prerequisite: Provisional Admission) This course covers the knowledge and skills required to use design and digital publishing software as well as design and create business publications, collaterals and digital presences. Course work will include course demonstrations, laboratory exercises and projects. Topics include: digital publishing concepts, basic graphic design, publication layout, web page design, and practical digital applications. Contact hours: Class - 1, Lab - 4. Credit hours: 3. (E)

MKTG 2060 Marketing Channels (Prerequisite: MKTG 1100) Emphasizes the design and management of marketing channels. Topics include: role of marketing channels, channel design and planning, supply chain management, logistics, and managing marketing channels. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (T)

MKTG 2070 Buying and Merchandising (Prerequisite: MKTG 1100) Develops buying and merchandising skills required in retail or e-business. Topics include: principles of merchandising, inventory control, merchandise plan, assortment planning, buying merchandise, and pricing strategies. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (T)

MKTG 2080 Regulations and Compliance in Sports (Prerequisite: Provisional Admission) This course introduces the legal principles involved in sports. Topics include: nature of sports law, sports law and change, sports law environment, court decision processes, and sports contracts. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (F)

MKTG 2090 Marketing Research (Prerequisite: MKTG 1100, MKTG 1130; MKTG 1160) This course conveys marketing research methodology. Topics include: role of marketing research, marketing research process, ethics in marketing research, research design, collection data analysis, reporting, application of marketing research, and marketing research career paths. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (F)

MKTG 2160 Advanced Selling (Prerequisite: MKTG 1100, MKTG 1130; MKTG 1160) This course emphasizes advanced sales presentation skills needed in professional selling. Topics include: managing effective customer relationships, self-management, sales force training, sales force development, and career paths in professional selling. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (Sp)

MKTG 2180 Principles of Sports Marketing (Prerequisite: Provisional Admission) This course applies the principles of marketing utilized in the sports industry. Topics include: nature of sports marketing, role of sports marketing, marketing principles specific to sports, marketing mix to achieve goals, and electronic landscape and media in sports. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (E)

MKTG 2210 Entrepreneurship (Prerequisite: none) This course provides an overview of the steps in establishing a business. A formal business will be created. Topics include planning, location analysis, financing, developing a business plan, and entrepreneurial ethics and social responsibility. Contact hours: Class - 6, Lab - 0. Credit hours: 6. (F, Sp)

MKTG 2280 Sports Management (Prerequisite: Provisional Admission) This course emphasizes leadership and management in the sports marketing industry. Topics include: leadership, budgeting, project management, event management, contract negotiation, and international sports marketing. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (Sp)

MKTG 2300 Marketing Management (Prerequisite: MKTG 1100, MKTG 1130; MKTG 1160) This course reiterates the program outcomes for marketing management through the development of a marketing plan. Topics include: the marketing framework, the marketing plan, and preparing a marketing plan for a new product. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (E)

MKTG 2500 Exploring Social Media (Prerequisite: Provisional Admission, FYES 1000, MKTG 1100, or HRTM 1201) This course explores the environment and current trends of social media as it relates to marketing
functions. Topics include: history of the internet and social media, social media dashboards, legal issues of social media, outsourcing vs. in-house administration, and the current social media ecosystem including applications in the following areas: Communication, collaboration/authority building, multimedia, review and opinions, and entertainment. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (T)

**MKTG 2550 Analyzing Social Media** (Provision Admission, MKTG 2500) This course analyzes the application of social media to an integrated marketing communication plan. Topics include technical writing for social media, social media auditing, Social Media ROI, trend analysis, social media analytics, and Customer Experience Management (CEM). Contact hours: Class - 3, Lab - 0. Credit hours: 3. (F)

**MRIM 2300 Orientation and Introduction to MRI** (Prerequisite: Program Admission; Corequisite: MRIM 2320, MRIM 2350) Provides knowledge of patient care and assessment, contrast agents, MRI safety, medical ethics and law, cultural diversity, and patient information management. Topics include: MRI history, anatomy, patient care and assessment, MRI safety, instrumentation, MRI fundamentals, and image parameters. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (T)

**MRIM 2320 MRI Procedures and Cross Sectional Anatomy** (Prerequisite: Program Admission; Corequisite: MRIM 2300, MRIM 2350) Provides knowledge of anatomy, pathology, scanning protocols, contrast administration, and contraindications for magnetic resonance imaging of the head and neck, spine, thorax, abdomen, pelvis, and musculoskeletal system. Topics include: anatomy, scanning protocols, MRI safety, image contrast, and image formation. Contact hours: Class - 2, Lab - 2. Credit hours: 3. (T)

**MRIM 2330 MRI Physics and Instrumentation** (Prerequisite: Program Admission; Corequisite: MRIM 2360, MRIM 2370) Introduces the concepts of basic physics and instrumentation for magnetic resonance imaging. Topics include imaging parameters, image quality, MRI fundamentals, imaging processing and display, and special procedures. Contact hours: Class - 2, Lab - 2. Credit hours: 3. (T)

**MRIM 2350 MRI Clinical Education I** (Prerequisite: Program Admission; Corequisite: MRIM 2320, MRIM 2300) Introduces students to the magnetic resonance imaging department and provides an opportunity for participation in and observation of MRI procedures. Topics include equipment utilization, contrast media, exam preparation, patient care and assessment, scanning protocol, image quality and progress toward completion of clinical competency evaluations. Contact hours: Class - 0, Lab - 18. Credit hours: 6. (T)

**MRIM 2360 MRI Clinical Education II** (Prerequisite: Program Admission; Corequisite: MRIM 2330, MRIM 2370) Intermediate course that reinforces learning obtained in MRI 110. Topics include exam preparations, patient care and assessment, equipment utilization, image quality, scanning protocol, contrast media, quality control, and progress toward completion of clinical competency evaluations. Contact hours: Class - 0, Lab - 18. Credit hours: 6. (T)

**MRIM 2370 MRI Review** (Prerequisite: Program Admission; Corequisite: MRIM 2300, MRIM 2320, MRIM 2330) Provides a comprehensive review of patient care, imaging procedures, imaging formation and data acquisition for the magnetic resonance imaging certification exam. Topics include: anatomy, scanning protocol, MRI safety, image contrast, image formation, exam preparation, contrast media, patient care and assessment, equipment utilization, image quality, imaging parameters, MRI fundamentals, image processing and display, and special procedures. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (T)

**MUSC 1101 Music Appreciation** (Corequisite: ENGL 1101) Explores the analysis of well-known works of music, their compositions, and the relationship to their periods. An introduction to locating, acquiring, and documenting information resources lays the foundation for research to include the creative and critical process, the themes of music, the formal elements of composition, and the placing of music in the historical context. Topics include historical and cultural development represented in musical arts and research. (Associate degree level course) Contact hours: Class - 3, Lab - 0. Credit hours: 3. (E)

**NAST 1100 Nurse Aide Fundamentals** (Prerequisite: ALHS 1040, ALHS 1090, ALHS 1011 or BIOL 2113 and BIOL 2113L and BIOL 2114 and BIOL 2114L; Prerequisite/Corequisite: ALHS 1060). This course introduces student to the role and responsibilities of the Nurse Aide. Emphasis is placed on understanding and developing critical thinking skills, as well as demonstrating knowledge of the location and function of human body systems and common disease processes; responding to and reporting changes in a residents /patient's condition, nutrition, vital signs; nutrition and diet therapy; disease processes; vital signs; observing, reporting and documenting changes in a residents condition; emergency concerns; ethics and legal issues and governmental agencies that influence the care of the elderly in long term care settings; mental health and psychosocial well-being of the elderly; use and care of mechanical devices and equipment; communication and interpersonal skills and skills competency based on federal guidelines. Contact hours: Class - 4, Lab - 5. Credit hours: 6 (E)

**PHOT 1102 Visual Theory I** (Prerequisite: Provisional Admission) Introduces the theory and information necessary for photographic processes with reference to black and white technologies. Emphasis will be placed on technical and creative skills. Topics include: photographic processes, technical skills, creative skills, black and white theory, equipment, and tonal control. Contact hours: Class - 1, Lab - 5. Credit hours: 3. (T)
PHOT 1103 Camera Techniques I (Prerequisite: Provisional Admission) Introduces the technical aspects of camera operations. Emphasizes skill development through manipulative exercises. Topics include: camera operation, exposure control, metering, lens manipulation, and various camera format operation. Contact hours: Class - 1, Lab - 5. Credit hours: 3. (T)

PHOT 1104 Photographic Workshop I (Prerequisite: Provisional Admission) Provides instruction in procedures used to produce photographs. Skill development through laboratory practice and problem solving will be the emphasis of the course. Emphasis will be placed on skill development and completion of structured assignments. Topics include: technical skill development, creative skill development, lighting and equipment. Contact hours: Class - 1, Lab - 6. Credit hours: 3. (T)

PHOT 1105 Digital Imaging I (Prerequisite: Provisional Admission) Introduces the photographic processes which use digital technology. The course explores the fundamentals of photography with the emphasis on the development of strong photographic skills as they relate to the principles of DSLR cameras, lenses and perspective. Topics include: photo digital technology history, digital processes in today's photography market, personal computer basics, introductory Image manipulation software, and manipulation of digital photos into print formats. Contact hours: Class - 1, Lab - 5. Credit hours: 3. (T)

PHOT 1122 Visual Theory II (Prerequisite: PHOT 1103, PHOT 1105) Introduction to the theory information necessary for the photographic process with reference to color technologies. Topics include: color recognition, color correction, color management, technical skills, creative skills and equipment. Contact hours: Class - 1, Lab - 5. Credit hours: 3. (T)

PHOT 1123 Camera Techniques II (Prerequisite: PHOT 1102, PHOT 1103, PHOT 1105) Introduces the technical aspects of camera operations. Emphasizes skill development through manipulative exercises. Topics include: 4 x 5 view camera, digital SLR and medium format camera operation, exposure control, and metering. Contact hours: Class - 1, Lab - 5. Credit hours: 3. (T)

PHOT 1124 Photographic Workshop II (Prerequisite: PHOTO 1104; Corequisite: PHOT 2121) Provides technical and creative experiences for the development of photographic skills. Completion of structured assignments is the emphasis of the course. Topics include: studio skill development and laboratory skill development. Contact hours: Class - 0, Lab - 5. Credit hours: 2. (T)

PHOT 1125 Multimedia I (Prerequisite: PHOT 2103) Provides instruction in the operational practices and procedures of electronic video equipment. Emphasizes relationship between linear and digital processes, the operation and maintenance of equipment and management of people. Introduces techniques and methods of video production and presentation. Emphasizes production of an edited video presentation. Topics include: automated equipment, workflow, formulating objectives, outlines, scripts, storyboards, titles, sound, programming, audience analysis, production planning, production, presentation, video preproduction, video production, and video presentation. Contact hours: Class - 2, Lab - 2. Credit hours: 3. (T)

PHOT 1126 Portraiture I (Prerequisite: PHOT 2103) Introduces techniques of lighting and posing as applied to professional portraiture. Emphasizes the use of controlled studio lighting and available light portraits. Topics include: available light, studio lighting, posing techniques, portraiture lighting, and portraiture styles and techniques. Contact hours: Class - 1, Lab - 5. Credit hours: 3. (T)

PHOT 2101 Portfolio I (Prerequisite: PHOT 2103, PHOT 1126) The emphasis of the course is on understanding the portfolios and how to produce it. Topics include: evaluation and planning, photographic image production, and presentation. Contact hours: Class - 0, Lab - 5. Credit hours: 2. (T)

PHOT 2103 Commercial I (Prerequisite: PHOT 1105, PHOT 1103) Introduces the concepts and techniques applied in commercial and advertising photography. Emphasizes skill development through laboratory activities. Provides instruction in advanced commercial photography. Emphasizes skill development in the use of various commercial lighting and composition techniques. Topics include: commercial lighting, camera techniques, exposure and metering, safety techniques, advertising principles, advanced commercial composition and lighting, and studio and location set rigging. Contact hours: Class - 1, Lab - 5. Credit hours: 3. (T)

PHOT 2105 Digital Imaging II (Prerequisite: PHOT 1103, PHOT 1105) Introduces the student to advanced operations and techniques in the production of digitally imaged photographs. Through the use of the Adobe Photoshop program, students will learn a precise use of tools and filters in the manipulation and enhancement of their photographs. Plan, layout and create multi-layered images. Become familiar with service bureau operations and visit a service bureau. Contact hours: Class - 0, Lab - 6. Credit hours: 3. (T)

PHOT 2106 Photojournalism (Prerequisite: PHOT 1105, PHOT 1103) Introduces the written and photographic techniques of news, feature, and sports photojournalism for newspaper and magazine reproduction. Topics include: news coverage, feature photography, sports photography, equipment and techniques, documentary and essay work, ethics and laws of photojournalism, and use of multimedia. Contact hours: Class - 1, Lab - 5. Credit hours: 3. (T)

PHOT 2121 Portfolio II (Prerequisite: PHOT 2101, PHOT 2123; Corequisite: PHOT 1124) The emphasis of
Course Descriptions

The course is on editing the portfolio of individual students directed toward a specific job and area of study. Stresses portfolio book, presentation, and visual images to secure photographic jobs in today's market. Topics include: evaluation and planning, photographic image production, presentation, and portfolio show. Contact hours: Class - 1, Lab - 3. Credit hours: 2. (T)

PHOT 2122 Practicum/Internship (Prerequisite: PHOT 2106, PHOT 2123) Provides an industry setting or simulated industry setting to allow students time for skill development and industry orientation. Topics include: employability skills and photographic skills. Contact hours: Class - 0, Lab - 9. Credit hours: 3. (T)

PHOT 2123 Commercial II (Prerequisite: PHOT 2103) Introduces advanced concepts and techniques applied in commercial and advanced photography. Emphasizes skill development in both interior and exterior photography and advanced advertising photography. Topics include: available lighting, artificial lighting, mixed lighting, use of filters, metering techniques, camera and lens selection, and location photography. Safety techniques. Contact hours: Class - 1, Lab - 5. Credit hours: 3. (T)

PHOT 2125 Multimedia II (Prerequisite: PHOT 1125) Provides instruction on methods related to video production, production, and post-production. Topics include camera techniques, storyboarding, script development, professional practices for video production, video editing, and file optimization. Contact hours: Class - 0, Lab - 5. Credit hours: 2. (T)

PHOT 2126 Portraiture II (Prerequisite: PHOT 1126) Provides instruction in advanced studio portrait lighting. Emphasizes the photographer/subject relationship and the use of controlled studio lighting and available light portraits. Topics include: studio lighting, advanced portraiture lighting and advanced portraiture styles and techniques. Contact hours: Class - 1, Lab - 5. Credit hours: 3. (T)

PHOT 2131 Photographic Business Management (Prerequisite: PHOT 2101) Provides instruction in the operational practices and procedures of a photography business. Topics include: pricing procedures, business records, advertising/marketing, market-analysis, copyright regulations, business ethics, and self-promotion. Contact hours: Class - 2, Lab - 0. Credit hours: 2. (T)

PHSC 1111 Physical Science I (Prerequisite: Degree level proficiency in English, reading and math) Introduces the fundamentals of classical physics, the solar system, and universe from a descriptive viewpoint. Topics include mechanics, temperature and heat, waves, electricity and magnetism, and astronomy. Laboratory exercises supplement class work. Computer use is an integral part of class and laboratory assignments. This course requires a supply reimbursement charge. (Associate degree level course) Contact hours: Class - 2, Lab - 3. Credit hours: 3. (E)

PHYS 1110 Conceptual Physics (Prerequisite: ENGL 1101, MATH 1111; Corequisite: PHYS 1110L) Introduces some of the basic laws of physics. Topics include systems of units and conversion of units, vector algebra, Newtonian mechanics, fluids and thermodynamics, heat, light, and optics, mechanical waves, electricity and magnetism, and modern physics. (Associate degree level course) Contact hours: Class - 3, Lab - 0. Credit hours: 3. (E)

PHYS 1110L Conceptual Physics Lab (Prerequisite: ENGL 1101, MATH 1111; Corequisite: PHYS 1110) Selected laboratory exercises paralleling the topics in PHYS 1110. The laboratory exercises for this course include systems of units and systems of measurement, vector algebra, Newtonian mechanics, fluids and thermodynamics, heat, light, and optics, mechanical waves, electricity and magnetism, and modern physics. This course requires a supply reimbursement charge. (Associate degree level course) Contact hours: Class - 0, Lab - 3. Credit hours: 1. (E)

PHYS 1111 Introductory Physics I (Prerequisite: ENGL 1101 and MATH 1112 or MATH 1113, Prerequisite/Corequisite: PHYS 1111L) The first course of two algebra and trigonometry based courses in the physics sequence. Topics include material from mechanics (kinematics, dynamics, work and energy, momentum and collisions, rotational motion, static equilibrium, elasticity theory, and simple harmonic motion), mechanical waves, theory of heat and heat transfer, and thermodynamics. (Associate degree level course) Contact hours: Class - 3, Lab - 0. Credit hours: 3. (F, Sp)

PHYS 1111L Introductory Physics Lab I (Prerequisite: ENGL 1101 and MATH 1112 or MATH 1113, Prerequisite/Corequisite: PHYS 1111) Selected laboratory exercises paralleling the topics in PHYS 1111. The laboratory exercises for this course include units of measurement, Newton's laws, work energy and power, momentum and collisions, one- and two-dimensional motion, circular motion and law of gravity, rotational dynamics and static equilibrium, elasticity theory, harmonic motion, theory of heat and heat transfer, thermodynamics, wave motion, and sound. (Associate degree level course) Contact hours: Class - 0, Lab - 3. Credit hours: 1. (F, Sp)

PHYS 1112 Introductory Physics II (Prerequisite: PHYS 1111 and PHYS 1111L, Prerequisite/Corequisite: PHYS 1112L) The second of two algebra and trigonometry based courses in the physics sequence. Topics include material from electricity and magnetism (electric charge, electric forces and fields, electric potential energy, electric potential, capacitance, magnetism, electric current, resistance, basic electric circuits, alternating current circuits, and electromagnetic waves), geometric optics (reflection and refraction), and physical optics (interference and diffraction). (Associate degree level course) Contact hours: Class - 3, Lab - 0. Credit hours: 3. (Sp, Su)
PHYS 1112L Introductory Physics Lab II (Pre-requisite: PHYS 1111 and PHYS 1111L, Prerequisite/Corequisite: PHYS 1112) Selected laboratory exercises paralleling the topics in PHYS 1112. The laboratory exercises for this course include material from electricity and magnetism, geometric optics, and physical optics. (Associate degree level course) Contact hours: Class - 0, Lab - 3. Credit hours: 1. (Sp, Su)

POLS 1101 American Government (Prerequisite: degree level proficiency in English and reading or ENGL 0098 & READ 0098 or ENGL 0888) Emphasizes study of government and politics in the United States. The focus of the course will provide an overview of the Constitutional foundations of the American political processes with a focus on government institutions and political procedures. The course will examine the constitutional framework, federalism, civil liberties and civil rights, public opinion, the media, special interest groups, political parties, and the election process along with the three branches of government. In addition, this course will examine the processes of Georgia state government. Topics include foundations of government, political behavior, and governing institutions. (Associate degree level course) Contact hours: Class - 3, Lab - 0. Credit hours: 3. (E)

PSYC 1101 Introductory Psychology (Prerequisite: Diploma level proficiency in English and reading) Presents basic concepts within the field of psychology and their application to everyday human behavior, thinking, and emotion. Emphasis is placed on students understanding basic psychological principles and their application within the context of family, work and social interactions. Topics include an overview of psychology as a science, the nervous and sensory systems, learning and memory, motivation and emotion, intelligence, lifespan development, personality, psychological disorders and their treatment, stress and health, and social relations. (Diploma level course) Contact hours: Class - 3, Lab - 0. Credit hours: 3. (E)

PSYC 1101 Introductory Psychology (Prerequisite: Degree level proficiency in English and reading) Introduces the major fields of contemporary psychology. Emphasis is on fundamental principles of psychology as a science. Topics include research design, the organization and operation of the nervous system, sensation and perception, learning and memory, motivation and emotion, thinking and intelligence, lifespan development, personality, psychopathology and interventions, stress and health, and social psychology. (Associate degree level course) Contact hours: Class – 3, Lab - 0. Credit hours: 3. (E)

PSYC 2103 Human Development (Prerequisite: PSYC 1101) Emphasizes changes that occur during the human life cycle beginning with conception and continuing through late adulthood and death and emphasizes the scientific basis of our knowledge of human growth and development and the interactive forces of nature and nurture. Topics include but are not limited to theoretical perspectives and research methods, prenatal development and child birth, stages of development from infancy through late adulthood, and death and dying. (Associate degree level course) Contact hours: Class - 3, Lab - 0. Credit hours: 3. (E)

PSYC 2250 Abnormal Psychology (Prerequisite: PSYC 1101) Emphasizes the nature and causes of various forms of abnormal behavior. Topics include historical and contemporary approaches to psychopathology; approaches to clinical assessment and diagnosis; understanding and defining classifications of psychological disorders; and etiology and treatment considerations. (Associate degree level course) Contact hours: Class - 3, Lab - 0. Credit hours: 3. (E)

RADT 1010 Introduction to Radiography (Prerequisite: Program Admission; Prerequisite/Corequisites: RADT 1030) Introduces a grouping of fundamental principles, practices, and issues common to many specializations in the health care profession. In addition to the essential skills, students explore various delivery systems and related issues. Provides the student with an overview of radiography and patient care. Students will be oriented to the radiographic profession as a whole. Emphasis will be placed on patient care with consideration of both physical and psychological conditions. Introduces a grouping of fundamental principles, practices, and issues common to many specializations in the health care profession. In addition to the essential skills, students explore various delivery systems and related issues. Topics include: ethics, medical and legal considerations, Right to Know Law, professionalism, basic principles of radiation protection, basic principles of exposure, equipment introduction, health care delivery systems, hospital and departmental organization, hospital and technical college affiliation, medical emergencies, pharmacology/contrast agents, media, OR and mobile procedures patient preparation, death and dying, body mechanics/transportation, basic life support/CPR, and patient care in radiologic sciences. Contact hours: Class - 3, Lab - 2. Credit hours: 4. (F)

RADT 1030 Radiographic Procedures I (Prerequisite: Program Admission; Prerequisite/Corequisite: RADT 1010) Introduces the knowledge required to perform radiologic procedures applicable to the human anatomy. Emphasis will be placed on the production of quality radiographs, and laboratory experience will demonstrate the application of theoretical principles and concepts. Topics include: introduction to radiographic procedures; positioning terminology; positioning considerations; procedures, anatomy, and topographical anatomy related to body cavities, bony thorax, upper extremities, shoulder girdle; and lower extremities. Contact hours: Class - 2, Lab - 3. Credit hours: 3. (F)

RADT 1060 Radiographic Procedures II (Prerequisite: Program Admission; RADT 1010, RADT 1030) Continues to develop the knowledge required to perform radiographic procedures. Topics include: anatomy and routine projections of the pelvic girdle; anatomy and routine projections of the spine, gastrointestinal (GI) procedures; genitourinary (GU)
courses; biliary system procedures; and minor procedures. Activities of students are under direct supervision. Contact hours: Class - 2, Lab - 3. Credit hours: 3. (Sp)

RADT 1065 Radiographic Science (Prerequisite: Program Admission.) Content of this course is designed to establish a basic knowledge of atomic structure. Other topics include nature and characteristics of x-radiation; ionizing and non-ionizing radiation; the production of x-rays; the properties of x-rays and the fundamentals of x-ray photon interaction with matter as well as the terminology associated with these components. Contact hours: Class – 2, Lab – 0. Credit Hours: 2 (F)

RADT 1075 Radiographic Imaging (Prerequisite: Program Admission) The content of this course introduces knowledge of the factors that govern and influence the production of radiographic image using analog and digital radiographic equipment found in diagnostic radiology. Laboratory experiences will demonstrate applications of theoretical principles and concepts. Emphasis will be placed on knowledge and techniques required to produce radiographic images; and factors that impact image acquisition, display, archiving and retrieval are discussed. Topics include: Image quality (radiographic density; radiographic contrast; recorded detail; distortion; grids, image receptors and holders (analog and digital); processing considerations (analog and digital); image acquisition (analog and digital, and PACS); image analysis, image artifacts (analog and digital); Guidelines for selecting exposure factors and evaluating images with a digital system will assist students to bridge between film-based and digital imaging systems. Contact hours: Class – 3, Lab – 2. Credit hours 4. (Sp)

RADT 1085 Radiographic Equipment (Prerequisite: Program Admission) Content establishes a knowledge base in radiographic, fluoroscopic and mobile equipment requirements and design. The content also provides a basic knowledge of Automatic Exposure Control (AEC) devices, beam restriction, filtration, quality control, and quality management principles of analog and digital systems. Laboratory experiences will demonstrate applications of theoretical principles and concepts. Contact hours: Class – 2, Lab -2. Credit hours 4. (F)

RADT 1200 Principles of Radiation Biology and Protection (Prerequisite: Program Admission) Provides instruction on the principles of cell radiation interaction. Radiation effects on cells and factors affecting cell response are presented. Acute and chronic effects of radiation are discussed. Topics include: radiation detection and measurement; patient protection; personnel protection; absorbed dose equivalencies; agencies and regulations; introduction to radiation biology; cell anatomy, radiation/cell interaction; and effects of radiation. Contact hours: Class - 2, Lab - 0. Credit hours: 2. (Su)

RADT 1320 Clinical Radiography I (Prerequisite: Program Admission) Introduces students to the hospital clinical setting and provides an opportunity for students to participate in or observe radiographic procedures. Topics include: orientation to hospital areas and procedures; orientation to mobile/surgery; orientation to radiography and fluoroscopy; participation in and/or observation of procedures related to body cavities, the shoulder girdle, and upper extremities. Activities of students are under direct supervision. Contact hours: Class - 0, Lab - 12. Credit hours: 4. (Sp)

RADT 1330 Clinical Radiography II (Prerequisite: Program Admission; RADT 1010, RADT 1030, RADT 1320) Continues introductory student learning experiences in the hospital setting. Topics include: equipment utilization; exposure techniques; attend to and/or observation of routine projections of the lower extremities, pelvic girdle, and spine; attend to and/or observation of procedures related to the gastrointestinal (GI), genitourinary (GU), and biliary systems; and attend to and/or observation of procedure related to minor radiologic procedures. Execution of radiographic procedures will be conducted under direct and indirect supervision. Activities of students are under direct supervision. Contact hours: Class - 0, Lab - 21. Credit hours: 7. (Su)

RADT 2090 Radiographic Procedures III (Prerequisites: RADT 1060) Continues to develop the knowledge required to perform radiographic procedures. Topics include: anatomy and routine projections of the cranium; anatomy and routine projections of the facial bones; anatomy and routine projections of the sinuses; sectional anatomy of the head, neck, thorax and abdomen. Contact hours: Class - 1, Lab - 3. Credit hours: 2. (Su)

RADT 2201 Introduction to Computed Tomography (Prerequisites: Program Admission; Corequisites: RADT 2220, RADT 2250) Introduces the student to computed tomography and patient care in the CT suite. Topics include: the history of computed tomography, patient care and assessment, anatomy, contrast agents, radiation safety and protection, medical ethics and law, cultural diversity, and patient information management. Contact hours: Class - 2, Lab - 0. Credit hours: 2. (F)

RADT 2210 Computed Tomography Physics & Instrumentation (Prerequisites: Program Admission; Corequisites: RADT 2230, RADT 2265) Introduces the concepts of basic physics and instrumentation for computed tomography. Topics include: computer concepts, system operation and components, image processing and display, instrumentation, single slice and volume scanning, 3-D volume rendering, image quality and artifacts, radiation protection and quality control. Contact hours: Class - 5, Lab - 0. Credit hours: 5. (F)

RADT 2220 Computed Tomography Procedures I (Prerequisites: Program Admission; Corequisites: RADT 2201, RADT 2250) Provides knowledge CT
procedures of the head, chest, abdomen, and pelvis. Topics include: anatomy, pathology, scanning procedures, scanning protocol, contrast administration, and contraindications for computed tomography. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (F)

RADT 2230 Computed Tomography Procedures II (Prerequisites: Program Admission; Corequisites: RADT 2210, RADT 2265) Provides knowledge of anatomy, pathology, scanning protocols, contrast administration, and contraindications for computed tomography of the neck, spine, musculoskeletal system, and special procedures. Post-processing and quality assurance criteria are addressed. Topics include: anatomy, pathology, scanning protocol, contrast administration and contraindications, post processing and quality assurance. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (F)

RADT 2250 Computed Tomography Clinical I (Prerequisites: Program Admission; Corequisites: RADT 2201, RADT 2220) Introduces students to the computed tomography department and provides an opportunity for participation in and observation of CT procedures. Students' progress toward completion of clinical competency evaluations. Topics include: exam preparation, patient care, equipment utilization, exposure techniques, evaluation of CT procedures, and incorporation of contrast media. Contact hours: Class - 0, Lab - 12. Credit hours: 4. (F)

RADT 2260 Radiographic Technology Review (Prerequisites: Program Admission; RADT 1200, RADT 2090, RADT 2340) Provides a review of basic knowledge from previous courses and helps the student prepare for national certification examinations for radiographers. Topics include: image production and evaluation; radiographic procedures; anatomy, physiology, pathology, and terminology; equipment operation and quality control; radiation protection; and patient care and education. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (Sp)

RADT 2265 Computed Tomography Clinical II (Prerequisites: Program Admission; Prerequisite/ Corequisite: RADT 2210, RADT 2230) Provides students with continued computed tomography work experience. Students demonstrate increased proficiency levels in skills introduced in Computed Tomography Procedures and practiced in the previous clinical course. Students complete clinical competency evaluations. Topics include: exam preparation, patient care, equipment utilization, exposure techniques, evaluation of CT procedures, and incorporation of contrast media. Contact hours: Class - 0, Lab - 12. Credit hours: 4. (Sp)

RADT 2340 Clinical Radiography III (Prerequisite: Program Admission; RADT 1330) Provides students with continued hospital setting work experience. Students continue to develop proficiency in executing procedures introduced in Radiographic Procedures. Topics include: patient care; behavioral and social competencies; performance and/or observation of minor special procedures, special equipment use, and participation in and/or observation of cranial and facial radiography. Execution of radiographic procedures will be conducted under direct and indirect supervision. Contact hours: Class - 0, Lab - 18. Credit hours: 6. (F)

RADT 2360 Clinical Radiography V (Prerequisite: Program Admission; RADT 2340) Provides students with continued hospital setting work experience. Students demonstrate increased proficiency levels in skills introduced in all of the radiographic procedures courses and practiced in previous clinical radiography courses. Topics include: patient care; behavioral and social competency; advanced radiographic anatomy; equipment utilization; exposure techniques; sterile techniques; integration of procedures and/or observation of angiographic, interventional, minor special procedures; integration of procedures and/or observation of special equipment use; integration of procedures and/or observation of routine and special radiographic procedures; and final completion of all required clinical competencies. Execution of radiographic procedures will be conducted under direct and indirect supervision. Contact hours: Class - 0, Lab - 27. Credit hours: 9. (Sp)

READ 0096 Reading I (Prerequisite: Appropriate placement test scores in English and/or reading) Emphasizes the strengthening of fundamental reading competencies. Topics include vocabulary skills, comprehension skills, and study skills. (Diploma level developmental course) Contact hours: Class - 3, Lab - 0. Credit hours: 3. (E)

READ 0097 Reading II (Prerequisite: Appropriate placement test scores or ENGL 0096 and/or READ 0096) Emphasizes vocabulary, comprehension, and critical reading skills development. Topics include vocabulary skills, comprehension skills, critical reading skills, study skills, and content area reading skills. (Diploma level developmental course) Contact hours: Class - 3, Lab - 0. Credit hours: 3. (E)

RELG 1101 World Religions (Prerequisite: ENGL 1101) Introduction to World Religions is a survey course of the history, practice, and modern relevance of the world’s religious traditions. Through the study of religion and its influence on history and culture, greater insight and understanding of diverse populations can be attained. Topics include an overview of significant religious traditions from around the world, critical analysis of the relationships between religions and artistic traditions, and critical analysis of the influence of religion on culture, politics, and history. Contact hours: Class - 3, Lab - 0. Credit hours: 3. (E)

RESP 1110 Pharmacology (Prerequisites: BIOL 2113, BIOL 2113L, BIOL 2114, BIOL 2114L, BIOL 2117, BIOL 2117L, CHEM 1211, CHEM 1211L, MATH 1111 or MATH 1113) Introduces the physiologic and pharmacological basis of pulmonary and cardiac medications. Focuses on the preparation and
calculation of dosages and mixtures and general principles of pharmacology as they relate to the body systems. Topics include: drug preparation, dosage calculation, mixture preparation, pharmacology principles, delivery systems, respiratory drugs, and cardiopulmonary system related drugs. Contact hours: Class - 2, Lab - 2. Credit hours: 3. (Sp)

RESP 1120 Introduction to Respiratory Therapy
(Prerequisites: BIOL 2113, BIOL 2113L, BIOL 2114, BIOL 2114L, BIOL 2117, BIOL 2117L, CHEM 1211, CHEM 1211L, MATH 1111 or MATH 1113; Prerequisite/Corequisites: RESP 1130, RESP 1193; RESP 1110 taken no longer than six months prior to enrollment in RESP 1120) Provides students with an introduction and comprehensive survey of the respiratory care profession. Emphasizes the application of physics and chemistry as the foundation for specific modes of respiratory care principles employed in patient care, including indications, hazards, contraindications, evaluation of therapy, and patient assessment. Topics include: respiratory therapy chemistry and physics principles, patient assessment, medical gas therapy, humidity and aerosol therapy, hyperinflation therapy, bronchopulmonary hygiene, infection control practices, and hospital safety. Contact hours: Class - 2, Lab - 2. Credit hours: 3. (Su)

RESP 1130 Respiratory Therapy Lab I
(Prerequisite/Corequisite: RESP 1120) Provides students with the opportunity to gain hands-on experience with basic respiratory therapy equipment and simulated practice of basic respiratory care modalities. Topics include: patient assessment, medical gas therapy, humidity and aerosol therapy, hyperinflation therapy, airway clearance techniques, infection control procedures, and medical ethics. Contact hours: Class - 0, Lab - 8. Credit hours: 4. (Su)

RESP 1193 Cardiopulmonary Anatomy and Physiology
(Prerequisites: BIOL 2113, BIOL 2113L, BIOL 2114, BIOL 2114L, BIOL 2117, BIOL 2117L, CHEM 1211, CHEM 1211L, MATH 1111 or MATH 1113) Provides an in-depth study of cardiac and pulmonary anatomy and physiology, and the diagnostic procedures commonly used in the hospital to evaluate these systems. Emphasizes the heart-lung relationship and clinical applications of these phenomena in the cardiopulmonary system. Topics include: respiratory function; ventilatory mechanisms; gas transport; laboratory analysis; natural and chemical regulation of breathing; circulation, blood flow and pressure, and cardiac function; renal physiology and related topics. (Associate degree level course) Contact hours: Class - 2, Lab - 4. Credit hours: 4. (Sp)

RESP 2090 Clinical Practices I
(Prerequisite/Corequisites: RESP 1110 taken no longer than six months prior to enrollment) Introduces students to clinical practice in basic respiratory care procedures. Topics include: introduction to clinical affiliate, medical gas therapy, oxygen therapy, aerosol therapy, incentive spirometry, inspiratory and expiratory PIP/PEP devices, patient assessment, and basic life support (BLS). Contact hours: Class - 0, Lab - 6. Credit hours: 2. (Sp)

RESP 2100 Clinical Practice II
(Prerequisite/Corequisite: RESP 2090) Continues to develop skills used in the clinical practice. Topics include: medical gas therapy, oxygen therapy, aerosol therapy, incentive spirometry, and patient assessment. Contact hours: Class - 0, Lab - 6. Credit hours: 2. (Su)

RESP 2110 Pulmonary Disease
(Prerequisite/Corequisites: RESP 1110, RESP 1193) Provides students with information concerning assessment of etiology, pathophysiology, treatment, and prognosis of common cardiopulmonary, cardiovascular, and pulmonary diseases and conditions. Topics include: infectious diseases and conditions, respiratory diseases and conditions, neuromuscular diseases and conditions, cardiovascular diseases and conditions, sleep apnea, patient assessment, laboratory tests, chest radiographs, and trauma. Contact hours: Class - 2, Lab - 2. Credit hours: 3. (Sp)

RESP 2120 Critical Respiratory Care
(Prerequisites: RESP 1120, RESP 1130) Provides students with knowledge on all phases of adult critical care and continuous mechanical ventilation. Topics include: mechanical ventilation history, principles of mechanical ventilation, continuous mechanical ventilation, ventilator implementation, ventilation monitoring, ventilator weaning, ventilator discontinuance and special techniques. Contact hours: Class - 1, Lab - 2. Credit hours: 2. (F)

RESP 2130 Mechanical Ventilation and Airway Management
(Prerequisites: RESP 1120, RESP 1130; Prerequisite/Corequisite: RESP 2120) Provides instruction in the theory, set-up, operation, and maintenance of mechanical ventilators and equipment used to establish and maintain both adult and pediatric airways and emergency airway disorders. Topics include: ventilator operation, ventilator maintenance, emergency airway disorders, adult airway establishment and maintenance, pediatric airway establishment and maintenance, fiberoptic bronchoscopy, thoracostesis, chest tube maintenance, arterial blood gas sampling, and noninvasive positive pressure ventilation. Contact hours: Class - 0, Lab - 8. Credit hours: 4. (F)

RESP 2140 Advanced Critical Care Monitoring
(Prerequisite/Corequisites: RESP 1193) Provides a study of advanced critical care techniques for hemodynamic and non-invasive monitoring. Topics include: arterial pressure monitoring, central venous catheters, pulmonary artery catheters, cardiac output measurement, and non-invasive monitoring techniques. Contact hours: Class - 0, Lab - 2. Credit hours: 1. (Su)

RESP 2150 Pulmonary Function Testing
(Prerequisite: RESP 1193) Provides knowledge regarding normal and abnormal pulmonary functions. Emphasizes performance, interpretation, and evaluation of various pulmonary function studies. Topics include: pulmonary function testing, pulmonary
function interpretation, pulmonary function evaluation, blood gas analysis, and polysomnography. Contact hours: Class - 0, Lab - 2. Credit hours: 1. (Sp)

**RESP 2160 Neonatal Pediatric Respiratory Care**  
(Prerequisites: RESP 1120, RESP 1130) Provides concepts on the processes of growth and development related to respiratory care from the fetus to the adolescent. Relates physiologic function to respiratory care assessment. Topics include: fetal growth and development, neonatal growth and development, fetal assessment, neonatal assessment, neonatal respiratory care, neonatal pathology, pediatric pathology, pediatric respiratory care, adolescent assessment, and adolescent respiratory care. Contact hours: Class - 2, Lab - 2. Credit hours: 3. (F)

**RESP 2170 Advanced Respiratory Care Seminar**  
(Prerequisites: RESP 2120, RESP 2130) Review of respiratory therapy as it pertains to the national credential examinations administered by the NBRC. Emphasizes decision making and problem solving as they relate to clinical respiratory care. Topics include: medical ethics, basic computer literacy, TMC exam preparation, and CSE exam preparation. Contact hours: Class - 1, Lab - 4. Credit hours: 3. (Sp)

**RESP 2180 Clinical Practice III**  
(Prerequisite/Co-requisite: RESP 2100) Continues development of proficiency levels in skills introduced in Clinical Practices I and II. In addition, intermittent positive pressure breathing, chest physiotherapy, and airway care are introduced. Case presentations are required to integrate clinical and classroom theory. Topics include: intermittent positive pressure breathing, chest physiotherapy, airway care, medical gas therapy, oxygen therapy, aerosol therapy, incentive spirometry, and patient assessment. Contact hours: Class - 0, Clinical - 6. Credit hours: 2. (Su)

**RESP 2190 Clinical Practice IV**  
(Prerequisite/Co-requisite: RESP 2180) Continues development of proficiency levels in skills introduced in Clinical Practices I, II, and III. In addition, the student is introduced to critical respiratory care. Case presentations are required to integrate clinical and classroom theory. Topics include: intermittent positive pressure breathing, chest physiotherapy, airway care, medical gas therapy, oxygen therapy, aerosol therapy, incentive spirometry, patient assessment, and respiratory care of the critical care patient. Contact hours: Class - 0, Clinical - 6. Credit hours: 2. (F)

**RESP 2200 Clinical Practice V**  
(Prerequisite: RESP 2180; Prerequisite/Corequisites: RESP 2120, RESP 2130, RESP 2190) Continues development of skills required in the intensive care of the respiratory patient. Case presentations are required to integrate clinical and classroom theory. Topics include: basic respiratory care of critical care patients, airway management, ventilator monitoring, arterial blood collection, blood gas analysis, and EKG. Contact hours: Class - 0, Lab - 9. Credit hours: 3. (F)

**RESP 2220 Clinical Practice VI**  
(Prerequisite/Corequisite: RESP 2190, RESP 2200) Provides students with an opportunity for in-depth application and reinforcement of adult intensive care. In addition, students are provided an opportunity for application and reinforcement of pediatric and neonatal intensive care, advanced diagnostics, and rehabilitation/home care. Topics include: mechanical ventilation initiation, patient stabilization, critical care monitoring, hemodynamic measurement, hemodynamic evaluation, bronchial hygiene, weaning mechanics, extubation, arterial line sampling, advanced diagnostics, pediatric/ neonatal respiratory care, and rehabilitation/home care. Contact hours: Class - 0, Lab - 21. Credit hours: 7. (Sp)

**RESP 2270 Rehabilitation and Home Care**  
(Prerequisite/Corequisite: RESP 1120) Provides an overview of the concepts, procedures, and equipment used in rehabilitation and in the delivery of long-term care to persons with chronic pulmonary disorders. Topics include: cardiopulmonary rehabilitation/home care concepts, cardiopulmonary rehabilitation/home care procedures, and cardiopulmonary rehabilitation/home care equipment. Contact hours: Class - 0, Lab - 2. Credit hours: 1. (Sp)

**RNSG 1101 Foundations of Nursing Practice**  
(Prerequisite: Program admission, FYES 1000, ENGL 1102) This course is designed to provide the nursing student with a basic understanding of key concepts and principles foundational to the practice of nursing. Students are introduced to the context for nursing practice. Historical, legal and ethical, physiological, and psychosocial concepts are introduced, including mental health perspectives. Nursing process as a systematic method problem solving for practice is introduced in which effective communication, critical thinking, and interpersonal relationships of the adult client is central to the course. Basic needs relative to hygiene, activity, rest, sleep, comfort, safety, nutrition, fluid and electrolytes, elimination, and oxygenation are introduced. Supervised clinical simulations and inpatient/outpatient hospital experiences will provide the student opportunities to meet course competency outcomes with adult clients experiencing commonly reoccurring health problems. Contact hours: Class - 3, Lab - 11. Credit hours: 7. (F)

**RNSG 1102 Pharmacological Concepts and Drug Calculations**  
(Prerequisite: Program admission) This course is designed to provide the student nurse with the tools essential to assess, plan, intervene and evaluate drug effects of the patient. Pharmacological principles of fluids and medications and basic skill for safe delivery of care are an emphasis of this course. Supervised clinical simulations and inpatient/outpatient hospital experiences will provide the student opportunities to meet course competency outcomes. Contact hours: Class - 1, Lab - 2. Credit hours: 2. (F)

**RNSG 1103 Concepts of Adult Health I**  
(Prerequisite: Program admission, RNSG 1101) This course
introduces the nursing student to concepts of adult health nursing, reinforcing basic nursing theory and skills taught in RNSG 1101. This course prepares the students to provide compassionate, effective, evidenced-based nursing care for the adult client in an acute care setting. Concepts of medical surgical nursing will be applied through the nursing process to the care of the adult client with acute or chronic commonly reoccurring problems, incorporating essential nursing science, biophysical, psychosocial, spiritual, and cultural principles. Content focuses on musculoskeletal, respiratory, urinary, and integumentary disorders. Emphasis is placed on health promotion, restoration and maintenance of the client through direct care. Pharmacological principles are expanded and integrated throughout the course. Supervised clinical simulations and inpatient/outpatient hospital experiences will provide the student opportunities to meet course competency outcomes with adults with health problems of the musculoskeletal, respiratory, urinary, and integumentary systems. Contact hours: Class - 2, Lab - 9. Credit hours: 5. (Sp)

RNSG 1105 Concepts of Adult Health II (Prerequisite: Program admission, RNSG 1103) This course builds on adult health concepts and skills that were introduced in RNSG 1101 and RNSG 1103. Concepts of medical surgical nursing will be applied through the nursing process to the care of the adult client with acute or chronic commonly reoccurring problems, incorporating essential nursing science, biophysical, psychosocial, spiritual, and cultural principles. Content focuses now on hematological, endocrine, reproductive, neurological and intestinal disorders. Emphasis is placed on health promotion, restoration and maintenance of the client through direct care. Pharmacological principles are expanded and integrated throughout the course. Supervised clinical simulations and inpatient/outpatient hospital experiences will provide the student opportunities to meet course competency outcomes with adults with health problems of the hematological, endocrine, reproductive, neurological, or intestinal systems. Contact hours: Class - 2, Lab - 9. Credit hours: 5. (Sp)

RNSG 1500 Bridge to Professional Nursing Practice (Prerequisite: Program admission) This course is designed to facilitate successful entry of practical nurse graduates into the second year of the associate degree nursing program. The Access to Professional Nursing II program focuses on the challenges of the Paramedic returning to school to seek a career as a Registered Nurse. The concepts of role transition and role conflict will be emphasized. Classroom content will explore current Paramedic to RN role transition, managing change, the profession of nursing, practicing within regulatory frameworks, and critical thinking. In the clinical settings, the student is expected to achieve competency in caring for the client, critical thinking and decision making skills with increased independence as a care provider and manager. Clinical experiences are provided in inpatient and outpatient settings with faculty oversight. Contact hours: Class - 2, Lab - 0. Credit hours: 2. (F)

RNSG 1510 Bridge to Professional Nursing Practice II (Prerequisite: Program admission) This course is designed to facilitate successful entry of practical nurse graduates into the second year of the associate degree nursing program. The Bridge to Professional Nursing II course is designed to further explore professional role expectations and to assist the LPN to transition into the role of registered nursing student. Contact hours: Class - 2, Lab - 0. Credit hours: 2. (Sp)

RNSG 1520 Bridge to Professional Nursing for Paramedics (Prerequisite: RNSG 1500) This course is designed to facilitate the Paramedic student's transition into the second year of the associate degree nursing program. The course focuses on the challenges of the Paramedic returning to school to seek a career as a Registered Nurse. The concepts of role transition and role conflict will be emphasized. Classroom content will explore current Paramedic to RN role transition, managing change, the profession of nursing, practicing within regulatory frameworks, and critical thinking. In the clinical settings, the student is expected to achieve competency in caring for the client, critical thinking and decision making skills with increased independence as a care provider and manager. Clinical experiences are provided in inpatient and outpatient settings with faculty oversight. Contact hours: Class - 2, Lab - 0. Credit hours: 2. (F)

RNSG 2101 Concepts of Maternal Nursing (Prerequisite: Program admission, RNSG 1101, 1102, 1103, 1105; Corequisite: RNSG 2102) This course prepares the nursing student in providing planned, compassionate, evidenced-based nursing care for the childbearing woman. Concepts related to childbearing will be introduced which include family planning issues, normal pregnancy and birth, complications of pregnancy and birth, and care of the newborn. Emphasis is placed on health promotion, restoration, and maintenance of the client and family from conception through postpartum. Knowledge and skill necessary to care for these populations will be addressed by utilizing the nursing process, using critical thinking for management of care, and providing client and family education. Pharmacologic principles are incorporated as they relate to the obstetrical patients. Students will provide care incorporating essential nursing science, biophysical, psychosocial, spiritual, and cultural principles. Supervised clinical simulations and inpatient/outpatient hospital experiences will provide the student opportunities to meet course competency outcomes. Contact hours: Class - 2, Lab - 6. Credit hours: 4. (F)

RNSG 2102 Concepts of Pediatric Nursing (Prerequisite Program admission, RNSG, 1101, 1102, 1103, 1105; Corequisite: RNSG 2101). This course prepares the nursing student in providing planned, compassionate, evidenced-based nursing care for children, and their family members as a member of the pediatric healthcare team. Concepts related to pediatric nursing will be introduced, and care of the child/
adolescent with health problems. Emphasis is placed on health promotion, restoration, and maintenance of the client and family. Knowledge and skill necessary to care for these populations will be addressed by utilizing the nursing process, using critical thinking for management of care, and providing client and family education. Pharmacologic principles are incorporated as they relate to the pediatric client. Students will provide care incorporating essential nursing science, biophysical, psychosocial, spiritual, and cultural principles. Supervised clinical simulations and inpatient/outpatient hospital experiences will provide the student opportunities to meet course competency.

Contact hours: Class - 2, Lab - 6. Credit hours: 4. (F).

RNSG 2103 Concepts of Adult Health III (Prerequisite: RNSG 2101, RNSG 2102; Prerequisite/Corequisite: RNSG 2105) This course builds on previous courses to introduce the student to the nursing care of clients with complex and multisystem disorders. The course prepares the nursing student to provide compassionate, effective, evidenced-based nursing care for the adult client or group of clients in the inpatient setting. Concepts of advanced medical surgical nursing will be applied through the nursing process to the care of the adult client with complex problems incorporating essential nursing science, biophysical, psychosocial, spiritual, and cultural principles. Content focuses on cardiac, neurological, immune, oncological, life threatening disorders, terminal illness, mental health, and end of life issues. Emphasis is placed on the restoration and maintenance of health. Pharmacological concepts are strengthened throughout the course. Supervised clinical inpatient/outpatient hospital experiences will provide the student with opportunities to meet course competency outcomes.

Contact hours: Class - 4, Lab - 18. Credit hours: 10. (Sp)

RNSG 2105 Transition into the Profession of Nursing (Prerequisite: Program admission; RNSG 2101, RNSG 2102; Pre/Corequisite: RNSG 2103) The intent of this course is to transition the student into the role of member of the profession focusing on management and leadership competencies, while fostering independence and proficiency as a provider and manager of care. Classroom content will explore current professional nursing issues and healthcare trends emphasizing the importance of professional growth, accountability and responsibility within the profession. The student also gains an understanding of health care policy and its impact on health care.

Contact hours: Class - 1, Lab - 2. Credit hours: 2. (Sp)

SOCI 1101 Introduction to Sociology (Prerequisite: Degree level proficiency in English and reading) Explores the sociological analysis of society, its culture, and structure. Sociology is presented as a science with emphasis placed on its methodology and theoretical foundations. Topics include basic sociological concepts, socialization, social interaction and culture, social groups and institutions, deviance and social control, social stratification, social change, and marriage and family. (Associate degree level course)

Contact hours: Class -3, Lab - 0. Credit hours: 3. (E)

SOCI 1120 Introduction to Medical Sociology (Prerequisite: Degree level proficiency in English and reading) Explores the sociological analysis of society, its culture, and structure. This course largely focuses on issues concerning health and illness in American society as well as societies around the world. Topics include basic sociological concepts, socialization, social stratification, the history of healthcare and medicine from a world view and the United States, epidemiology, medical education, medical research methodology, ethical concerns, and mental health and illness, among others. (Associate degree level course)

Contact hours: Class -3, Lab - 0. Credit hours: 3. (F, Sp)

SPCH 1101 Public Speaking (Prerequisite: ENGL 1101) Introduces the student to the fundamentals of oral communication. Topics include selection and organization of materials, preparation and delivery of individual and group presentations, analysis of ideas presented by others, and professionalism. In the Online Speech class students will be responsible for gathering an audience of 8-10 adults for the speech video, they will need access to a video camera, and meet at least once during the semester with their speech group to plan and video a group presentation. (Associate degree level course)

Contact hours: Class -3, Lab - 0. Credit hours: 3. (F, Sp)

SURG 1010 Introduction to Surgical Technology (Prerequisites: Program Admission; FYES 1000, ENGL1101, MATH 1111 or 1101, PSYC1101, ALHS1090, BIOL2113/L, BIOL2114/L, BIOL2117/L, ENGL1102, PSYC2103, & GEN ED Area IV; Corequisites: SURG 1020 and SURG 1080) Provides an overview of the surgical technology profession and develops the fundamental concepts and principles necessary to successfully participate on a surgical team. Topics include: introduction to preoperative, intraoperative and postoperative principles of surgical technology; assistant circulator role, professionalism as well as health care facility information. (There are surgical procedures that are similar as far as procedural steps, instrumentation, supplies, patient position, etc. This is referred to as the "Co-Related Procedures Concept." The purpose of using the Co-Related Procedures Concept is to provide the instructor additional time to teach surgical procedures as well as avoid repetition.)

Contact hours: Class - 4, Lab - 10. Credit hours: 8. (F, Sp)
SURG 1020 Principles of Surgical Technology
(Prerequisites: Program Admission; Corequisites: SURG 1010 and SURG 1080) Provides continued study of surgical team participation by wound management and technological sciences for the operating room. Topics include: technological sciences; patient care concepts; preoperative, intraoperative and postoperative surgical technology; and perioperative case management. (There are surgical procedures that are similar as far as procedural steps, instrumentation, supplies, patient position, etc. This is referred to as the “Co-Related Procedures Concept.” The purpose of using the Co-Related Procedures Concept is to provide the instructor additional time to teach surgical procedures as well as avoid repetition.) Contact hours: Class - 5, Lab - 6. Credit hours: 7. (F, Sp)

SURG 1080 Surgical Microbiology (Prerequisites: Program Admission; Corequisites: SURG 1010 and SURG 1020) Introduces the fundamentals of surgical microbiology. Topics include: historical development of microbiology; cell structure and theory; fluid movement concepts; microbial function; human and pathogen relationships; microscopy; culture media; staining methods; infectious processes types of microorganisms; blood borne and air borne pathogens; defense microorganisms; host -microbe relationships; infection control; principles of microbial control and destruction immunology; inflammatory process pathogenicity and process of Infection; hypersensitivity and immunologic defense mechanisms. Contact hours: Class - 2, Lab - 0. Credit hours: 2. (F, Sp)

SURG 1100 Surgical Pharmacology (Prerequisites: Program Admission; Corequisites: SURG 2030, SURG 2110 and SURG 2120) Introduces the fundamentals of intraoperative pharmacology, and emphasizes concepts of anesthesia administration. Topics include: weights and measurements, drug conversions, interpretation of drug orders, legal aspects of drug administration, intraoperative pharmacologic agents, and anesthesia fundamentals. Contact hours: Class - 1, Lab - 2. Credit hours: 2. (Sp, Su)

SURG 2030 Surgical Procedures I (Prerequisite: Program Admission; Corequisites: SURG 1010 and SURG 1020; Corequisites: SURG 2110, SURG 2120 and SURG 1100) Introduces the core general procedures using the co-related procedure concept, including the following: incisions; wound closure; operative pathology; and common complications as applied to general and specialty surgery. Topics include: introduction to surgical procedures; general surgery and special techniques and instrumentation; obstetrical and gynecological surgery; gastrointestinal surgery; genitourinary surgery; orthopedic surgery; and otorhinolaryngologic surgery. Contact hours: Class - 4, Lab - 0. Credit hours: 4. (Sp, Su)

SURG 2040 Surgical Procedures II (Prerequisite: Program Admission; SURG 2030; Corequisites; SURG 2130, SURG 2140 and SURG 2240) Continues development of student knowledge and skills applicable to specialty surgery areas. Topics include: ophthalmic surgery, plastic surgery, thoracic surgery, vascular surgery, cardiovascular surgery and neurosurgery. Contact hours: Class - 4, Lab - 0. Credit hours: 4. (F, Su)

SURG 2110 Surgical Technology Clinical I (Prerequisite: Program Admission; SURG 1010 and SURG 1020; Corequisites: SURG 2120 and SURG 2030) Orientes students to the clinical environment and provides experience with basic skills necessary to the surgical technologist. Topics include, but are not limited to: scrubbing, gowning, gloving, and draping; assistance with patient care; processing of instruments and supplies; maintenance of a sterile field; and environmental sanitation. In addition, introduces the development of surgical team participation through clinical experience. Emphasis is placed on observation and/or participation in routine procedures for core and specialty surgery. Topics include: general surgery (to include gastrointestinal), cardiothoracic surgery, otorhinolaryngologic surgery (ENT), ophthalmic surgery (Eye), genitourinary surgery, neurosurgical and procurement/transplant surgery. The total number of cases the student must complete is 120. Students are required to complete 30 cases in the General Surgery specialty. Twenty of the cases must be in the First Scrub Role. Students are required to complete 90 cases in various surgical specialties. Sixty of the cases must be in the First Scrub Role and evenly distributed between a minimum of 5 surgical specialties. However, 15 is the maximum number of cases that can be counted in any one surgical specialty. Diagnostic endoscopy cases and vaginal delivery cases are not mandatory, but up to 10 diagnostic endoscopic cases and 5 vaginal delivery cases can be counted toward the maximum number of Second Scrub Role cases. Cases that are in the Observation role must be documented but do not count towards the minimum of 120 total cases. Contact hours: Class - 0, Lab - 9. Credit hours: 3. (Sp, Su)

SURG 2120 Surgical Technology Clinical II (Prerequisite: Program Admission; SURG 1010 and SURG 1020; Corequisites: SURG 2110 and SURG 2030) Orientes students to the clinical environment and provides experience with basic skills necessary to the surgical technologist. Topics include, but are not limited to: scrubbing, gowning, gloving, and draping; assistance with patient care; processing of instruments and supplies; maintenance of a sterile field; and environmental sanitation. In addition, introduces the development of surgical team participation through clinical experience. Emphasis is placed on observation and/or participation in routine procedures for core and specialty surgery. Topics include: general surgery (to include gastrointestinal), cardiothoracic surgery, otorhinolaryngologic surgery (ENT), ophthalmic surgery (Eye), genitourinary surgery, neurosurgical and procurement/transplant surgery. The total number of cases the student must complete is 120. Students are required to complete 30 cases in the General Surgery specialty. Twenty of the cases must be in the First Scrub Role. Students are required to complete 90 cases in various surgical specialties. Sixty of the cases must be in the First Scrub Role and evenly distributed between a minimum of 5 surgical specialties. However, 15 is the maximum number of cases that can be counted in any one surgical specialty. Diagnostic endoscopy cases and vaginal delivery cases are not mandatory, but up to 10 diagnostic endoscopic cases and 5 vaginal delivery cases can be counted toward the maximum number of Second Scrub Role cases. Cases that are in the Observation role must be documented but do not count towards the minimum of 120 total cases. Contact hours: Class - 0, Lab - 9. Credit hours: 3. (Sp, Su)
obstetrical and gynecological surgery, oral and maxillofacial surgery, orthopedic surgery, peripheral vascular surgery, plastic and reconstructive surgery, and procurement/transplant surgery. The total number of cases the student must complete is 120. Students are required to complete 30 cases in the General Surgery specialty. Twenty of the cases must be in the First Scrub Role. Students are required to complete 90 cases in various surgical specialties. Sixty of the cases must be in the First Scrub Role and evenly distributed between a minimum of 5 surgical specialties. However, 15 is the maximum number of cases that can be counted in any one surgical specialty. Diagnostic endoscopy cases and vaginal delivery cases are not mandatory, but up to 10 diagnostic endoscopic cases and 5 vaginal delivery cases can be counted toward the maximum number of Second Scrub Role cases. Cases that are in the Observation role must be documented but do not count towards the minimum of 120 total cases. Contact hours: Class - 0, Lab - 9. Credit hours: 3. (Sp, Su)

SURG 2130 Surgical Technology Clinical III
(Prerequisite: Program Admission; SURG 2110 and SURG 2120; Corequisites: SURG 2040, SURG 2240 and SURG 2140) Orient students to the clinical environment and provides experience with basic skills necessary to the surgical technologist. Topics include, but are not limited to: scrubbing, gowning, gloving, and draping; assistance with patient care; processing of instruments and supplies; maintenance of a sterile field; and environmental sanitation. In addition, introduces the development of surgical team participation through clinical experience. Emphasis is placed on observation and/or participation in routine procedures for core and specialty surgery. Topics include: general surgery (to include gastrointestinal), cardiothoracic surgery, otorhinolaryngologic surgery (ENT), ophthalmic surgery (Eye), genitourinary surgery, neurological surgery, obstetrical and gynecological surgery, oral and maxillofacial surgery, orthopedic surgery, peripheral vascular surgery, plastic and reconstructive surgery, and procurement/transplant surgery. The total number of cases the student must complete is 120. Students are required to complete 30 cases in the General Surgery specialty. Twenty of the cases must be in the First Scrub Role. Students are required to complete 90 cases in various surgical specialties. Sixty of the cases must be in the First Scrub Role and evenly distributed between a minimum of 5 surgical specialties. However, 15 is the maximum number of cases that can be counted in any one surgical specialty. Diagnostic endoscopy cases and vaginal delivery cases are not mandatory, but up to 10 diagnostic endoscopic cases and 5 vaginal delivery cases can be counted toward the maximum number of Second Scrub Role cases. Cases that are in the Observation role must be documented but do not count towards the minimum of 120 total cases. Contact hours: Class - 0, Lab - 9. Credit hours: 3. (F, Su)

SURG 2140 Surgical Technology Clinical IV
(Prerequisite: Program Admission; SURG 2110 and SURG 2120; Corequisites: SURG 2040, SURG 2240 and SURG 2130) Orient students to the clinical environment and provides experience with basic skills necessary to the surgical technologist. Topics include, but are not limited to: scrubbing, gowning, gloving, and draping; assistance with patient care; processing of instruments and supplies; maintenance of a sterile field; and environmental sanitation. In addition, introduces the development of surgical team participation through clinical experience. Emphasis is placed on observation and/or participation in routine procedures for core and specialty surgery. Topics include: general surgery (to include gastrointestinal), cardiothoracic surgery, otorhinolaryngologic surgery (ENT), ophthalmic surgery (Eye), genitourinary surgery, neurological surgery, obstetrical and gynecological surgery, oral and maxillofacial surgery, orthopedic surgery, peripheral vascular surgery, plastic and reconstructive surgery, and procurement/transplant surgery. The total number of cases the student must complete is 120. Students are required to complete 30 cases in the General Surgery specialty. Twenty of the cases must be in the First Scrub Role. Students are required to complete 90 cases in various surgical specialties. Sixty of the cases must be in the First Scrub Role and evenly distributed between a minimum of 5 surgical specialties. However, 15 is the maximum number of cases that can be counted in any one surgical specialty. Diagnostic endoscopy cases and vaginal delivery cases are not mandatory, but up to 10 diagnostic endoscopic cases and 5 vaginal delivery cases can be counted toward the maximum number of Second Scrub Role cases. Cases that are in the Observation role must be documented but do not count towards the minimum of 120 total cases. Contact hours: Class - 0, Lab - 9. Credit hours: 3. (F, Su)

VETT 1000 Veterinary Medical Terminology
(Prerequisite: Program Admission) Introduces the elements of medical terminology. Emphasis is placed on building familiarity with medical words through knowledge of roots, prefixes, and suffixes. Topics include: word origins, word building, abbreviations and symbols, terminology related to animal anatomy, terminology specific to veterinary medicine, and reading medical orders and reports. Contact hours: Class - 2, Lab - 0. Credit hours: 2. (F)

VETT 1010 Introduction to Veterinary Technology
(Prerequisite: Program Admission) This course provides an introduction to the veterinary technology
occupation. Emphasis is placed on legal, regulatory, ethical and professional issues. Other topics include: breeds, career choices, and animal identification. Contact hours: Class - 1, Lab - 0. Credit hours: 1. (F)

VETT 1020 Veterinary Clinical Pathology I
(Prerequisite: Program Admission, VETT 1010, VETT 1060) Presents an introduction to the principles and procedures utilized in the veterinary practice diagnostic laboratory. Emphasis is placed on laboratory safety and management, technical skills in microscopy, microbiology, and parasitology. Topics include: microscopy and laboratory equipment; handling of laboratory specimens, laboratory safety, and quality control; parasitology; microbiology; and necropsy. Contact hours: Class – 2, Lab - 3. Credit hours: 3. (Sp)

VETT 1030 Veterinary Clinical Procedures I
(Prerequisite: Program Admission; Prerequisites: VETT 1000, VETT 1010) This course will provide an orientation to small and large animal patient care and technical procedures. Emphasis is placed on physical restraint, general patient assessment and care, sample collection, medication administration, instrumentation and supplies, and basic surgery and isolation room procedures. Field trips to satisfy competencies may be arranged and may occur on days other than scheduled class times. Contact hours: Class – 3, Lab - 3. Credit hours: 4. (Sp)

VETT 1060 Animal Anatomy and Physiology
(Prerequisite: Program Admission; Prerequisites/Corequisites: VETT 1000, VETT 1010) Provides an overview of the functional anatomy and physiology of domestic animals commonly encountered in veterinary medicine. Topics include: musculoskeletal system, digestive system, cardiovascular system, integumentary system, hematopoietic system, respiratory system, urogenital system, nervous system, endocrine system and the special senses. Contact hours: Class – 3, Lab - 3. Credit hours: 4. (F)

VETT 1070 Veterinary Diagnostic Imaging
(Prerequisite: Program Admission, VETT 1000, VETT 1010, VETT 1060; Prerequisite/Corequisites: VETT 1030) Introduces the knowledge required to perform radiologic procedures applicable to veterinary care. Emphasis will be placed on the production of quality radiographs, and laboratory experiences will demonstrate the application of theoretical principles and concepts. Topics include: radiation safety, radiographic procedures, quality control, processing and record keeping, ultrasonography, alternate imaging, and maintenance. Contact hours: Class – 2, Lab - 3. Credit hours: 3. (Sp)

VETT 1110 Veterinary Pathology and Diseases
(Prerequisite: Program Admission, VETT 1060) Presents a study of veterinary diseases and zoonoses. Emphasis is placed on the types of diseases and disease transmission. Topics include: classification of causes of disease; responses to injury; sources and transmission of agents; common diseases; toxicology and poisonous plants. Field trips to satisfy competencies may be arranged and may occur on days other than scheduled class times. Contact hours: Class – 4, Lab - 0. Credit hours: 4. (Sp)

VETT 2120 Veterinary Clinical Pathology II
(Prerequisite: Program Admission, VETT 1020) Provides continued study in the principles and procedures for the veterinary practice diagnostic laboratory. Topics include: hematology, clinical chemistry, cytology, serology, and urinalysis. Contact hours: Class – 2, Lab - 6. Credit hours: 4. (Su)

VETT 2130 Veterinary Clinical Procedures II
(Prerequisite: Program Admission, VETT 1030) This course provides advanced instruction related to the care of both large and small animals. Emphasis is placed on collecting samples, medication administration and therapeutics, catheterization, bandaging techniques, dentistry and advanced patient care procedures. Practical experience will be obtained through rotations at veterinary clinical sites. Field trips to satisfy competencies may be arranged and may occur on days other than scheduled class times. Contact hours: Class – 3, Lab - 6. Credit hours: 5. (Su)

VETT 2160 Pharmacology for Veterinary Technicians
(Prerequisite: Program Admission, CHEM 1211, VETT 1030) Provides study in the area of veterinary drugs and medicines. Emphasis is placed on classes and actions of drugs, calculating dosages, proper administration, and dispensing of drugs. Topics include: general pharmacology, calculating dosages, pharmacy, and record keeping. Contact hours: Class – 2, Lab - 2. Credit hours: 3. (F)

VETT 2210 Laboratory and Exotic Animals for Veterinary Technicians
(Prerequisite: Program Admission, VETT 1020, VETT 1030, VETT 1060) Provides an overview into the study of laboratory and exotic animals. Emphasis is placed on principles of animal research, maintaining human health and safety in a research environment, providing proper care and husbandry, nursing procedures and euthanasia. Topics include: principles of animal research, human safety and health considerations, animal care and husbandry, nursing procedures and euthanasia. Field trips to satisfy competencies may be arranged and may occur on days other than scheduled class times. Contact hours: Class – 3, Lab - 3. Credit hours: 4. (Sp)

VETT 2220 Veterinary Practice Management
(Prerequisite: Program Admission, VETT 1000, VETT 1010) Provides an introduction to veterinary facility management. Emphasis is placed on office management and client relations. Field trips to satisfy competencies may be arranged and may occur on days other than scheduled class times. Contact hours: Class – 3, Lab - 0. Credit hours: 3. (Sp)

VETT 2230 Veterinary Anesthesiology and Surgical Procedures
(Prerequisite: Program Admission, VETT 1030, VETT 2130; Corequisite: VETT 2160) Provides study in surgical assisting, operative care and
anesthesiology. Emphasis is placed on assisting in surgical procedures and administering and monitoring anesthesia. Topics include: surgical assisting, anesthesia, special equipment, and emergencies. Practical experience will be obtained through rotations at veterinary clinical sites. Field trips to satisfy competencies may be arranged and may occur on days other than scheduled class times. Contact hours: Class – 3, Lab - 6. Credit hours: 5. (F)

**VETT 2300 Veterinary Technology Clinical Internship**
(Prerequisite: Program Admission, VETT 2120, VETT 2130, VETT 2230) Introduces students to the application of veterinary technology procedures in an actual job setting under direct supervision of a veterinarian or a registered veterinary technician. Students are acquainted with occupational responsibilities through realistic work situations on the job. Job sites can include veterinary referral/teaching hospitals, private veterinary hospitals and clinics, research laboratories, and other facilities supervised by a veterinarian or a credentialed veterinary technician. Topics include, but are not limited to: office and hospital procedures, client relations and communications; pharmacy and pharmacology; nursing; anesthesia; surgical nursing; laboratory procedures; and imaging. The occupation-based instruction is implemented through the use of written individualized training plans, written performance evaluation, and required on-the-job training. Field trips to satisfy competencies may be arranged and may occur on days other than schedule class times. Contact hours: Class –0, Lab - 36. Credit hours: 12. (Sp)

**WELD 1000 Introduction to Welding Technology**
(Prerequisite: Provisional Admission; Program Director mandatory Advisement) Provides an introduction to welding technology with an emphasis on basic welding laboratory principles and operating procedures. Topics include: industrial safety and health practices, hand tool and power machine use, measurement, laboratory operating procedures, welding power sources, welding career potentials, and introduction to welding codes and standards. Contact hours: Class – 2.51, Lab – 1.49. Credit hours: 3. (T)

**WELD 1010 Oxyfuel Cutting**
(Prerequisite/Corequisite: WELD 1000) Introduces fundamental principles, safety practices, equipment, and techniques necessary for metal heating, oxyfuel cutting, plasma cutting, and carbon ARC gouging (CAG). Topics include: metal heating and cutting principles, safety procedures, use of cutting torches and apparatus, metal heating techniques, metal cutting techniques, manual and automatic oxyfuel cutting techniques, and oxyfuel pipe cutting. Practice in the laboratory is provided. Contact hours: Class - 2, Lab - 3. Credit hours: 3. (T)

**WELD 1030 Blueprint Reading for Welding Technology**
(Prerequisite/Corequisite: WELD 1000) This course introduces the knowledge and skills necessary for reading welding and related blueprints and sketches. An emphasis is placed on identifying types of welds, and the associated abbreviations and symbols. Contact hours: Class - 2, Lab - 3. Credit hours: 3. (T)

**WELD 1040 Flat Shielded Metal Arc Welding**
(Prerequisite/ Corequisite: WELD 1000) This course introduces the major theory, safety practices, and techniques required for shielded metal arc welding (SMAW) in flat positions. Qualification tests, flat position, are used in the evaluation of student progress toward making industrial welds. Contact hours: Class - 2, Lab – 4.67. Credit hours: 4. (T)

**WELD 1050 Horizontal Shielded Metal Arc Welding**
(Prerequisite/ Corequisite: WELD 1040) Introduces the major theory, safety practices, and techniques required for shielded metal arc welding (SMAW) in the horizontal position. Qualification tests, horizontal position, are used in the evaluation of student progress toward making industrial standard welds. Topics include: horizontal SMAW safety and health practices, selection and applications of electrodes, selection and applications for horizontal SMAW, horizontal SMAW joints, and horizontal SMAW to specification. Contact hours: Class - 2, Lab – 4.67. Credit hours: 4. (T)

**WELD 1060 Vertical Shielded Metal Arc Welding**
(Prerequisite/ Corequisite: WELD 1040, WELD 1050) Introduces the major theory, safety practices, and techniques required for shielded metal arc welding (SMAW) in the vertical position. Qualification tests, vertical position, are used in the evaluation of student progress toward making industrial standard welds. Topics include: vertical SMAW safety and health practices, selection and applications of electrodes for vertical SMAW, vertical SMAW joints, and vertical SMAW to specification. Contact hours: Class - 2, Lab – 4.67. Credit hours: 4. (T)

**WELD 1070 Overhead Shielded Metal Arc Welding**
(Prerequisite/ Corequisite: WELD 1060) Introduces the major theory, safety practices, and techniques required for shielded metal arc welding (SMAW) in the overhead position. Qualification tests, overhead position, are used in the evaluation of student progress toward making industrial standard welds. Topics include: overhead SMAW safety and health practices, selection and applications of electrodes for overhead SMAW, overhead SMAW joints, and overhead SMAW to specification. Contact hours: Class - 2, Lab – 4.67. Credit hours: 4. (T)

**WELD 1090 Gas Metal Arc Welding**
(Prerequisite/ Corequisite: WELD 1000) Provides knowledge of theory, safety practices, equipment and techniques required for successful gas metal arc welding. Qualification tests are used in the evaluation of student progress toward making industrial standard welds. Topics include: GMAW safety and health practices; GMAW theory, machines, and set up; transfer modes; wire selection; shielded gas selection; and GMAW joints in all positions. Contact hours: Class - 2, Lab – 4.67. Credit hours: 4. (T)

**WELD 1110 Gas Tungsten Arc Welding**
(Prerequisite/ Corequisite: WELD 1000) Provides knowledge of
theory, safety practices, inert gas, equipment, and techniques required for successful gas tungsten arc welding. Qualification tests are used in the evaluating of student progress toward making industrial standard welds. Topics include: GTAW safety and health practices; shielding gases; metal cleaning procedures; GTAW machines and equipment set up; air and water cooled; selection of filler rods; GTAW weld positions; and production of GTAW beads, bead patterns, and joints. Contact hours: Class - 2, Lab – 4.67. Credit hours: 4. (T)

WELD 1120 Preparation for Industrial Qualification
(Prerequisite/Corequisite: WELD 1040, WELD 1070, WELD 1090, WELD 1110) Introduces industrial qualification methods, procedures, and requirements. Students are prepared to meet the qualification criteria of selected national welding codes and standards. Topics include: test methods and procedures, national industrial codes and standards, fillet and groove weld specimens, and preparation for qualifications and job entry. Contact hours: Class - 1, Lab -- 5. Credit hours: 3. (T)

WELD 1150 Advanced Gas Tungsten Arc Welding
(Prerequisite/Corequisite: WELD 1040, WELD 1060, WELD 1070, WELD 1110) Provides knowledge of theory, safety practices, inert gas, equipment, and techniques required for successful advanced gas tungsten arc welding (GTAW). Qualification tests are used in the evaluation of student progress toward making advanced level industrial standard welds. Topics include: GTAW safety and health practices; shielding gases; metal cleaning procedures; GTAW machines and equipment set up; selection of filler rods; GTAW weld positions; and advanced production of GTAW beads, bead patterns, and joints. Contact hours: Class - 1, Lab – 5.2. Credit hours: 3. (T)

WELD 1151 Fabrication Processes
(Prerequisite: WELD 1000, WELD 1030) Presents practices common in the welding and metal fabrication industry. Topics include: metal fabrication safety and health practices and metal fabrication procedures. Contact hours: Class - 2, Lab - 2. Credit hours: 3. (T)

WELD 1152 Pipe Welding
(Prerequisite: WELD 1040, WELD 1050, WELD 1060, WELD 1070, WELD 1110) Provides the opportunity to apply skills to pipe welding operations. Topics include: pipe welding safety and health practices, pipe welding nomenclature, pipe layout and preparation, pipe joint assembly, horizontal welds on pipe (2G), vertical welds on pipe (5G), and welds on 45 degree angle pipe (6G) using GTAW and SMAW processes. Contact hours: Class - 1, Lab - 6. Credit hours: 3. (T)

WELD 1153 Flux Cored Arc Welding
(Prerequisite: WELD 1000) Provides knowledge of theory, safety practices, equipment, and techniques required for successful flux cored arc welding (FCAW). Qualification tests are used in the evaluation of student progress toward making industrial standards welds. Topics include: FCAW safety and health practices, FCAW theory, machine set up and operation, shielded gas selection, and FCAW joints in all positions. Contact hours: Class - 2, Lab – 4.67. Credit hours: 4. (T)

WELD 1156 Ornamental Iron Works
(Prerequisite: WELD 1010, WELD 1030, WELD 1040, WELD 1090) Provides an introduction to ornamental ironworks with emphasis on safety practices, equipment and ornamental ironwork techniques. Topics include: introduction to ornamental ironworks and safety practices; use of scroll machine, and use of bar twister. Contact hours: Class - 1, Lab - 5. Credit hours: 3. (T)