

ABDR 1380**Cooperative Education - Autobody/Collision and Repair Technology/Technician**

Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component.

Lecture Hrs = 1, Lab Hrs = 0, External Hrs = 15

Prerequisite: READ 300 or ESOL 310 or equivalent

ABDR 1381**Cooperative Education - Autobody/Collision and Repair Technology/Technician**

Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component.

Lecture Hrs = 1, Lab Hrs = 0, External Hrs = 15

Prerequisite: READ 300 or ESOL 310 or equivalent

ABDR 1441**Structural Analysis and Damage Repair I**

Expanded training in the roughing and shaping procedures on automotive sheet metal necessary to make satisfactory body repairs. Emphasis on the alignment of component parts such as doors, hood, front-end assemblies, and deck lids.

Lecture Hrs = 3, Lab Hrs = 2

Prerequisite: READ 300 or ESOL 310 or equivalent

ABDR 1442**Structural Analysis and Damage Repair II**

Continuation of general repair and replacement procedures for damaged structural parts and collision damage.

Lecture Hrs 3, Lab Hrs = 2

Prerequisite: READ 300 or ESOL 310 or equivalent

ABDR 1455**Minor Metal Repair**

A course in sheet metal alignment principles using mechanical and hydraulic equipment. Emphasis on attachment devices used to straighten and align exterior body panels.

Lecture Hrs = 3, Lab Hrs = 2

Prerequisite: READ 300 or ESOL 310 or equivalent

ABDR 1458**Intermediate Refinishing**

Expanded training in mixing and spraying of automotive topcoats. Emphasis on formula ingredient, reducing, thinning, and special spraying techniques. Introduction to partial panel refinishing techniques and current industry paint removal techniques.

Lecture Hrs = 3, Lab Hrs = 2

Prerequisite: READ 300 or ESOL 310 or equivalent

ABDR 2255**Collision Repair Estimating**

An advanced course in collision estimating and development of an accurate damage report.

Lecture Hrs = 1, Lab Hrs = 2

Prerequisite: READ 300 or ESOL 310 or equivalent

ABDR 2380**Cooperative Education - Autobody/Collision and Repair Technology/Technician**

Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component.

Lecture Hrs = 1, Lab Hrs = 0, External Hrs = 15

Prerequisite: READ 300 or ESOL 310 or equivalent

ABDR 2381**Cooperative Education - Autobody/Collision and Repair Technology/Technician**

Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component.

Lecture Hrs = 1, Lab Hrs = 0, External Hrs = 15

Prerequisite: READ 300 or ESOL 310 or equivalent

ABDR 2402**Auto Body Mechanical and Electrical Service**

A course in the repair, replacement, and/or service of collision damaged mechanical or electrical systems. Topics include drive train removal, reinstallation and service; cooling system service and repair; exhaust system service; and emission control systems. Additional topics include wire and connector repair, reading wiring diagrams, and troubleshooting.

Lecture Hrs = 3, Lab Hrs = 2

Prerequisite: READ 300 or ESOL 310 or equivalent

ACCT 2401**Principles of Accounting I - Financial**

This course introduces accounting concepts, principles, and procedures with an emphasis on financial accounting statements for corporations and accounting processes for a service and merchandise enterprise. The course focuses on elements of the balance sheet and income statement including current, plant and intangible assets, deferrals, accruals, current and long-term liabilities, and stock transactions. In addition, ethics, accounting systems and control, short and long-term securities are also studied. This course has a computerized lab, utilizing interactive financial accounting software. Note: Students who have not had high school accounting or have not worked in accounting may wish to take ACNT 1303 Introduction to Accounting I, before taking this course.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: READ 301 or ESOL 311 or equivalent

ACCT 2402**Principles of Accounting II-Managerial**

This course emphasizes managerial accounting concepts, including a study of cost behavior, budgeting, cost-volume profit analysis, manufacturing cost accounting, variance analysis, and cost controls. Tax and management decisions, cash flows, responsibility accounting, ethics and corporate structure analysis are also studied. A research component is required for honors credit. This course has a computerized lab, utilizing interactive managerial accounting software.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: ACCT 2401

ACNT 1303**Introduction to Accounting I**

A study of analyzing, classifying, and recording business transactions in a manual and computerized environment. Emphasis on understanding the complete accounting cycle and preparing financial statements, bank reconciliations, and payroll.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 301 or ESOL 311 or equivalent

ACNT 1311**Introduction to Computerized Accounting**

Introduction to utilizing the computer in maintaining accounting records, making management decisions, and processing common business applications with primary emphasis on a general ledger package. Students will utilize an integrated general ledger software package, including accounts receivable, accounts payable, inventories, and payroll systems. (Fall Only)

Lecture Hrs = 2, Lab Hrs = 2

Prerequisite: ACCT 2401, READ 301 or equivalent

ACNT 1313**Computerized Accounting Applications**

A study of utilizing the computer to develop and maintain accounting record keeping systems, make management decisions, and process common business applications with emphasis on utilizing a spreadsheet and/or data base package/program. (Spring Only)

Lecture Hrs = 2, Lab Hrs = 2

Prerequisite: ACCT 2401, READ 301 or equivalent

ACNT 1329**Payroll and Business Tax Accounting**

A study of payroll procedures, taxing entities, and reporting requirements of local, state, and federal taxing authorities in a manual and computerized environment. Students will learn to process payroll and maintain personnel and payroll information required by current laws. Course will also include accounting for franchise taxes, sales tax, and an over-view of taxes relating to partnerships and corporations. (Spring Only)

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: ACCT 2401, READ 301 or equivalent

ACNT 1331**Federal Income Tax: Individual**

A study of the laws currently implemented by the IRS, providing a working knowledge of preparing taxes for the individual. The course focuses on identifying the determinants of taxable income, selection and use of proper forms, and compilation of income tax due. The use of computer tax program is included.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 301 or ESOL 311 or equivalent

ACNT 2302**Accounting Capstone**

A learning experience that allows students to apply broad knowledge of the accounting profession through discipline specific projects involving the integration of individuals and teams performing activities to simulate workplace situations.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: ACNT 2303

ACNT 2303**Intermediate Accounting I**

Critical analysis of generally accepted accounting principles, concepts, and theory underlying the preparation of financial statements. Emphasis on current theory and practice. In addition, this course includes the study of present and future value concepts; current, plant, and intangible assets; some payroll theory; other financial accounting topics. (Fall Only)

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: ACCT 2402

ACNT 2304**Intermediate Accounting II**

Continued in-depth analysis of generally accepted accounting principles underlying the preparation of financial statements including comparative analysis and statement of cash flow. In addition, special emphasis on corporation accounting, stockholder's equity, retained earnings, current and long-term liabilities, pensions, statement of cash flows, and other financial topics. (Spring Only)

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: ACNT 2303

ACNT 2309**Cost Accounting**

A study of budgeting and cost control systems including a detailed study of manufacturing cost accounts and reports, job order costing, and process costing. Includes introduction to alternative costing methods such as activity-based and just-in-time costing. The course also includes cost allocations, break-even analysis, profit-volume ratio, standard, direct and variable costing. (Fall Only)

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: ACCT 2402

ACNT 2386**Internship--Accounting****Technology/Technician and Bookkeeping**

A work-based learning experience that enables the student to apply specialized occupational theory, skills and concepts. A learning plan is developed by the college and the employer. Mentored and supervised by a workplace employee, the student achieves objectives that are developed and documented by the college. The experience may be paid or unpaid, MUST be in accounting related job for a minimum of 13 hours per week. Students must have an approved job site by the second class of the semester. As a capstone elective, this class must be taken in the student's last semester of the Accounting Technician Certificate.

Lecture Hrs = 0, Lab Hrs = 0, External Hrs = 13

Prerequisite: ACCT 2401

ACNT 2387**Internship--Accounting****Technology/Technician and Bookkeeping**

A work-based learning experience that enables the student to apply specialized occupational theory, skills and concepts. A learning plan is developed by the college and the employer. Mentored and supervised by a workplace employee, the student achieves objectives that are developed and documented by the college. The experience may be paid or unpaid, MUST be in accounting related job for a minimum of 13 hours per week. Students must have an approved job site by the second class of the semester. As a capstone elective, this class must be taken in the student's last semester of the Advanced Accounting Technician Certificate.

Lecture Hrs = 0, Lab Hrs = 0, External Hrs = 13

Prerequisite: ACCT 2402

ACNT 2389**Internship--Accounting**

A work-based learning experience that enables the student to apply specialized occupational theory, skills and concepts. A learning plan is developed by the college and the employer. Mentored and supervised by a workplace employee, the student achieves objectives that are developed and documented by the college. The experience may be paid or unpaid, MUST be in accounting related job for a minimum of 13 hours per week. Students must have an approved job site by the second class of the semester. As a capstone elective, this class must be taken in the student's last semester of the AAS Accounting Technology degree.

Lecture Hrs = 0, Lab Hrs = 0, External Hrs = 13

Prerequisite: ACNT 2303

AGRI 2317**Introduction to Agricultural Economics**

An introduction to the study of the field of agricultural economics and fundamental economic problems and their applications to the problems of the industry of agriculture. Concepts are illustrated in terms of selected current social and economic issues, including the role of agriculture in both the national and international dimension.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: READ 300 or equivalent

AIRP 1215**Private Flight**

Flight training to prepare the student for the completion of the Federal Aviation Administration private pilot certificate, including dual and solo flight in the areas of maneuvers and cross-country navigation.

Lecture Hrs = 1, Lab Hrs = 7

(18 pre/post, 30 dual, 0 solo)

Pre/Corequisite: READ 300 or equivalent

Corequisite: Two ground courses in

Fall/Spring semesters; one in summer terms

AIRP 1255**Intermediate Flight**

Provides students with flight hours and skills necessary to fulfill solo cross-country hours required for the Federal Aviation Administration Commercial Pilot, single engine land, airplane certificate.

Lecture Hrs = 1, Lab Hrs = 7

(15 pre/post, 27 dual, 22 solo)

Prerequisite: AIRP 1215

Corequisite: Two ground courses in

Fall/Spring semesters; one in summer terms

Pre/Corequisite: READ 300 or equivalent

AIRP 1301**Air Navigation**

Instruction in Visual Flight rules navigation in the National Airspace System. Topics include sectional charts, flight computers, plotters, and navigation logs and publications. Qualifies as part of a program leading to Federal Aviation Administration Private Pilot certification.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: READ 300 or equivalent

AIRP 1307**Aviation Meteorology**

In-depth coverage of meteorological phenomena affecting aircraft flight. Topics include basic concepts of aviation meteorology in the study of temperature, pressure, moisture, stability, clouds, air masses, fronts, thunderstorms, icing, and fog. Also includes analysis and use of weather data for flight planning.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: READ 300 or equivalent

AIRP 1317**Private Pilot Ground School**

Basic ground school for the Federal Aviation Administration Private Pilot Certificate, providing the student with the necessary aeronautical knowledge that can be used for private pilot certification. Topics include principles of flight, radio procedures, weather, navigation, aerodynamics, and Federal Aviation Administration regulations.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: READ 300 or equivalent

AIRP 1341**Advanced Air Navigation**

Skill development in advanced airplane systems and performance including radio navigation and cross-country flight planning. Includes an introduction to instrument flight operations and navigation. This course may be used as part of a program leading to Federal Aviation Administration certification.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: AIRP 1301

Pre/Corequisite: READ 300 or equivalent

AIRP 1343**Aerodynamics**

Study of the general principles of the physical laws of flight. Topics include physical terms and the four forces of flight: lift, weight, thrust, and drag. Aircraft design, stability control, and high-speed flight characteristics are also included.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: READ 300 or equivalent

AIRP 1345**Aviation Safety**

A study of the fundamentals essential to the safety of flight. A survey of the aviation industry including decision-making factors, accident reporting, accident investigation, air traffic systems, and aircraft technologies.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: READ 300 or equivalent



AIRP 1351**Instrument Ground School**

A study of basic instrument radio and navigation fundamentals used in instrument flight. Topics include a description and practical use of navigation systems and instruments, charts used for instrument flight, and Federal Aviation Administration regulations. Qualifies as part of a program leading to Federal Aviation Administration certification.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: READ 300 or equivalent

AIRP 2239**Commercial Flight**

Flight instruction necessary to qualify for the Federal Aviation Administration Commercial Pilot Certificate. Instruction includes both dual and solo flight training to prepare the student for mastery of all commercial pilot maneuvers.

Lecture Hrs = 1, Lab Hrs = 7

(15 pre/post, 30 dual, 35 solo)

Prerequisite: AIRP 2250

Corequisite: Two ground courses in

Fall/Spring semesters; one in summer terms

Pre/Corequisite: READ 300 or equivalent

AIRP 2250**Instrument Flight**

Preparation for completion of the Federal Aviation Administration Instrument Pilot Rating with mastery of all instrument flight procedures.

Lecture Hrs = 1, Lab Hrs = 7

Prerequisite: AIRP 1255

Corequisite: Two ground courses in

Fall/Spring semesters; one in summer terms

Pre/Corequisite: READ 300 or equivalent

AIRP 2331**Advanced Meteorology**

Preparation for advanced aviation students to apply knowledge of varying meteorological factors including weather hazards to flight, techniques for minimizing weather hazards, and aviation weather services.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: AIRP 1307

Pre/Corequisite: READ 300 or equivalent

AIRP 2333**Aircraft Systems**

Study of the general principles, operation, and application of pneumatic, hydraulic, electrical, fuel, environmental, protection, and warning systems. Emphasis on types of aircraft structures and their control systems.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: READ 300 or equivalent

AIRP 2337**Commercial Ground School**

A study of advanced aviation topics that can be used for Federal Aviation Administration certification at the commercial pilot level. Includes preparation for the Federal Aviation Administration Commercial Airplane written test.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: AIRP 2250

Corequisite: Two ground courses in

Fall/Spring semesters; one in summer terms

Pre/Corequisite: READ 300 or equivalent

ANTH 2351**Cultural Anthropology**

The course introduces theories and methods in the study of human cultures and how anthropologists comparatively research, analyze and interpret the cultural institutions such as languages, kinships, economic systems, political processes, social stratifications, arts, and religions. This course takes a critical look at cultural diversity, evolution, and cross-cultural interaction.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 301, ESOL 311, or equivalent and ENGL 302, ESOL 321, or equivalent

ARCE 1403**Architectural Materials and Methods of Construction**

Properties, specifications, vendors references, and uses of materials as related to architectural systems of structures.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: READ 300 or ESOL 310 or equivalent

ARCE 1442**Codes, Specifications, and Contract Documents**

Study of ordinances, codes, and legal documents as they relate to specifications and drawing. Discussion of owner-architect-contractor responsibilities, duties, and legal relationships.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: READ 300 or ESOL 310 or equivalent

ARCE 1452**Structural Drafting**

A study of structural systems including concrete foundations and frames, wood framing and trusses, and structural steel framing systems. Includes detailing of concrete, wood, and steel to meet industry standards including The American Institute of Steel Construction and The American Concrete Institute.

Lecture Hrs = 3, Lab Hrs = 3

Pre/Corequisite: DFTG 2419 and READ 301 or equivalent

ARCE 2444**Statics and Strength of Material**

Internal effects of forces acting upon elastic bodies and the resulting changes in form and dimensions. Includes stress, shear, bending moments, and simple beam design.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: DFTG 2419

Pre/Corequisite: READ 301 or equivalent

ARCH 1301**Architectural History I**

This course is a survey of the history of architecture and the built environment from prehistoric times to the middle of the 15th century, along with their relationship to the cultural heritage of the Western World.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: ENGL 301 or equivalent, MATH 320 or equivalent, READ 301 or equivalent

ARCH 1302**Architectural History II**

This course follows ARCH 1301 (Architectural History I), with a survey of the history of architecture and the built environment from the Renaissance to the present.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: ENGL 301 or equivalent, MATH 320 or equivalent, READ 301 or equivalent

ARCH 1303**Architectural Design I**

Introduction to architectural concepts. The visual characteristics of two-and-three-dimensional forms and spaces. Concepts are studied through the use of form, color, texture, and material. Emphasis is placed on three-dimensional form and the development of graphic communication skills.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: READ 301 or equivalent

Pre/Corequisite: ARCH 2301 or ARCH 1307

ARCH 1304**Architectural Design II**

This course is a continuation of ARCH 1303 (Architectural Design I), with emphasis on more complex, three-dimensional design problems.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: ARCH 1303, READ 301 or equivalent

ARCH 1305**Architectural Aesthetics**

Architecture as a contemporary philosophical concept. Visual experience in the aesthetics of architecture.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: ENGL 301 or equivalent, READ 301 or equivalent

ARCH 1307**Architectural Graphics I**

Architectural drafting techniques including orthographic and axonometric studies. Principals of shades and shadows, and perspective drawing. This course teaches the use of drafting tools and materials and their application to graphic representation of architectural subject matter. Design and graphic concepts are introduced through design problems, modeling and analysis.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisites: ENGL 301, MATH 310, READ 301 or equivalent

ARCH 1308**Architectural Graphics II**

This course is a continuation of ARCH 1307 (Architectural Graphics I), with emphasis on more complex architectural graphic problems. Continued study of architectural drafting and modeling techniques including orthographic and axonometric studies. Design and graphic concepts are further studied through design problems, modeling and analysis.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: ARCH 1307, READ 301 or equivalent

ARCH 1311**Introduction to Architecture**

An introduction to the elements of the architectural profession. Introduction to Architecture theory, history, technology, and practice. A survey study of the interrelationships between society, culture and architecture.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: ENGL 301 or equivalent, READ 301 or equivalent

ARCH 1315**Architectural Computer Graphics**

Introduction to computer graphics systems with emphasis on architectural applications. This is an introductory course devoted to the creation of architectural drawings using computer software. Instruction will include the use of computer software to create two and three-dimensional drawings of various types including plans, elevations, sections, and others. Procedures for creating and organizing a set of presentation and construction drawings are also presented.

Lecture Hrs = 3, Lab Hrs = 3

Pre/Corequisite: ARCH 1311

ARCH 2301**Architectural Freehand Drawing I**

Representational drawing using various media. Emphasis on principles of light, shade, scale, proportion, line, and tonal quality. This course involves the study and application of freehand drawing and other basic communication skills using various media. Use of computer software and its relationship to drawing are studied.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisites: ENGL 301, MATH 310, READ 301 or equivalent

ARCH 2312**Architectural Technology I**

Introduction to the properties, specifications, and application of materials related to architectural structures. Emphasis on methods of construction and the effect of design. This course involves the study of building systems and their structure, economics, and aesthetic uses in architecture. The varieties, manufacture, properties, and uses of building materials are also presented. Also included are units on accessibility, Life Safety, Building Envelope Systems, and Building Service Systems.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 301 or equivalent

Pre/Corequisites: PHYS 1401, MATH 1316 or MATH 2412 or equivalent

ARTC 1413**Digital Publishing I**

The fundamentals of using digital layout as a primary publishing tool and the basic concepts and terminology associated with typography and page layout.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: READ 301 or equivalent

Pre/Corequisite: ITSC 1309 or BCIS 1405

ARTC 1453**Computer Illustration**

Use of the tools and transformation options of an industry standard vector drawing program to create complex illustrations. Includes principles of layout and design and manipulation of text and graphics.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: READ 301 or equivalent

Pre/Corequisite: ITSC 1309 or BCIS 1405

ARTC 2440**Computer Illustration II**

Advanced use of software capabilities with emphasis on various output procedures, the resolution of complex design issues, and concept development.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: READ 301 or equivalent

Pre/Corequisite: ITSC 1309 or BCIS 1405

ARTS 1301**Art Appreciation**

A general education course open to all; design principles from the layman's point-of-view. Critical evaluation of selected works of painting, sculpture, and architecture.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: READ 301 or equivalent

ARTS 1303**Art History I**

A survey of painting, sculpture, and architecture from prehistoric times through the 13th century. Alternatively, the course may be presented topically.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: READ 301 or equivalent

ARTS 1304**Art History II**

A survey of painting, sculpture, and architecture from the 14th century to the present. Alternatively, the course may be presented topically.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: READ 301 or equivalent

ARTS 1311**Design I**

Emphasis upon two-dimensional design; includes the fundamentals of line, shape, value, texture, color, and consideration of arrangement and space.

Lecture Hrs = 3, Lab Hrs = 3

Pre/Corequisite: READ 300 or equivalent

ARTS 1312**Design II**

Continuation of ARTS 1311 with emphasis on three-dimensional concepts.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: ARTS 1311

Pre/Corequisite: READ 300 or equivalent

ARTS 1313**Art Education**

A survey of philosophical, methodological and materials commonly used in primary art education. This course has the dual purpose of making the prospective teacher aware of children's art as a whole and at the same time the creative individuality of each child.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: READ 301 or equivalent

ARTS 1316**Drawing I**

A beginning course investigating a variety of media, techniques and subjects, exploring perceptual and descriptive possibilities with consideration of drawing as a developmental process as well as an end in itself.

Lecture Hrs = 3, Lab Hrs = 3

Pre/Corequisite: READ 300 or equivalent

ARTS 1317**Drawing II**

Expansion of ARTS 1316 stressing the expressive and conceptual aspects of drawing including the human figure within a spatial environment.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: ARTS 1316

Pre/Corequisite: READ 300 or equivalent

ARTS 2313**Design Communications I**

A course introducing the communication of ideas through processes and techniques of graphic design and illustration. This course will also introduce digital multimedia exploring elements of design and digital imagery.

Lecture Hrs = 3, Lab Hrs = 3

Pre/Corequisite: READ 300 or equivalent

ARTS 2314**Design Communications II**

This course continues to explore the communication of ideas through processes and techniques of graphic design and illustration. Emphasis will be placed on the use of computer applications for creative expressions. Course projects and methods of instruction emphasize the element of fine art design and conceptual development.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: ARTS 1311 or ARTS 2313

Pre/Corequisite: READ 300 or equivalent

ARTS 2316**Painting I**

Exploring the potentials of painting media with emphasis on color and composition.

Lecture Hrs = 3, Lab Hrs = 3

Pre/Corequisite: READ 300 or equivalent

ARTS 2317**Painting II**

Continuation of ARTS 2316 with emphasis on individual expression.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: ARTS 2316

Pre/Corequisite: READ 300 or equivalent

ARTS 2323**Life Drawing I**

Continuation of student exploration of various techniques and materials of drawing as applied to the human form. Portfolio review required.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: ARTS 1316, ARTS 1317

Pre/Corequisite: READ 300 or equivalent

ARTS 2324**Life Drawing II**

Continuation of student exploration of the media and techniques of drawing as applied to the human form and the development of a portfolio of completed drawings with emphasis on stylistic development. Portfolio presentation required.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: ARTS 2323

Pre/Corequisite: READ 300 or equivalent

ARTS 2326**Sculpture I**

An exploration of various approaches in a variety of media including additive and subtractive techniques.

Lecture Hrs = 3, Lab Hrs = 3

Pre/Corequisite: READ 300 or equivalent

ARTS 2327**Sculpture II**

A continuation of ARTS 2326 with emphasis on individual expression.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: ARTS 2326

Pre/Corequisite: READ 300 or equivalent

ARTS 2333 Ω**Printmaking I**

A beginning course investigating a number of printmaking approaches, techniques and principles.

Lecture Hrs = 3, Lab Hrs = 3

Pre/Corequisite: READ 300 or equivalent

ARTS 2334 Ω**Printmaking II**

The advanced printmaking course expands on the beginning printmaking course investigating each printmaking technique more intensely. Ideas will be further developed into complete drawings to produce editions of prints through the various processes as well as unique presentations.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: ARTS 2333

Pre/Corequisite: READ 300 or equivalent

ARTS 2346 Ω**Ceramics I**

An introduction to basic ceramic processes.

Lecture Hrs = 3, Lab Hrs = 3

Pre/Corequisite: READ 300 or equivalent

ARTS 2347 Ω**Ceramics II**

Opportunities for specialization in ceramic processes.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: ARTS 2346

Pre/Corequisite: READ 300 or equivalent

ARTS 2348 Ω**Digital Art I**

Studio art course that explores the potential of the computer hardware and software medium for their visual, conceptual, and practical uses in the visual arts.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: ARTS 1311 or ARTS 2313 or ARTS 2314

Pre/Corequisite: READ 300 or equivalent

ARTS 2349 Ω**Digital Art II**

Studio art course that continues to explore the potential of the computer hardware and software medium for their visual, conceptual, and practical uses in the visual arts. This course also investigates the use of 3-D animation and its relationship to the fine arts.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: ARTS 1311 or ARTS 2313 or ARTS 2314

Pre/Corequisite: READ 300 or equivalent

ARTS 2356 Ω**Introduction to Photography**

Fundamentals of photography. Covers cameras, lenses, shutters and filters; exposure time and apertures; light meters and lighting; developing, fixing, contact and projection printing; emulsions, solutions; characteristics of photographic papers; elements of composition.

Lecture Hrs = 3, Lab Hrs = 3

Pre/Corequisite: READ 300 or equivalent

ARTS 2357 Ω**Advanced Photographic Practices**

A continuation of ARTS 2356, designed to give additional laboratory experience and advanced training to develop professional ability.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: ARTS 2356

Pre/Corequisite: READ 300 or equivalent

AUMT 1313**Automotive Suspension and Steering Systems Theory**

A study of automotive suspension and steering systems including the theory of wheel and tire construction and alignment angles and procedures.

Lecture Hrs. = 3, Lab Hrs. = 0

Prerequisite: READ 300 or ESOL 310 or equivalent

AUMT 1349**Automotive Electronics Theory**

A course in automotive technology including electrical principles, semiconductor and integrated circuits, digital fundamentals, microcomputer systems, and electrical test equipment.

Lecture Hrs. = 3, Lab Hrs. = 0

Prerequisite: READ 300 or ESOL 310 or equivalent

AUMT 1357**Automotive Brake Systems Theory**

Theory and principles related to the design, operation, and servicing of automotive braking systems. Includes disc and drum-type brakes, hydraulic systems, power assist components, anti-lock brake systems, and diagnosis and reconditioning procedures.

Lecture Hrs. = 3, Lab Hrs. = 0

Prerequisite: READ 300 or ESOL 310 or equivalent

AUMT 1407**Automotive Electrical Systems**

An overview of automotive electrical systems including topics in operational theory, testing, diagnosis, and repair of batteries, charging and starting systems, and electrical accessories. Emphasis on electrical schematic diagrams and service manuals. May be taught manufacturer specific.

Lecture Hrs. = 3, Lab Hrs. = 2

Prerequisite: READ 300 or ESOL 310 or equivalent

AUMT 1416**Automotive Suspension and Steering Systems**

A study of automotive suspension and steering systems including tire and wheel problem diagnosis, component repair, and alignment procedures. May be taught manufacturer specific.

Lecture Hrs. = 3, Lab Hrs. = 2

Prerequisite: READ 300 or ESOL 310 or equivalent

AUMT 1480**Cooperative Education - Automobile/Automotive Mechanics Technology/Technician**

Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component.

Lecture Hrs. = 1, Lab Hrs. = 0, External Hrs. = 21

Prerequisite: READ 300 or ESOL 310 or equivalent

AUMT 2305**Automotive Engine Theory**

Fundamentals of engine operation and diagnosis including lubrication and cooling systems. Emphasis on identification of components, measurements, inspections, and repair methods.

Lecture Hrs. = 3, Lab Hrs. = 0

Prerequisite: READ 300 or ESOL 310 or equivalent

AUMT 2315**Automotive Engine Performance Analysis Theory I**

Operation and diagnosis of basic engine dynamics including the study of the ignition system, fuel delivery systems, and the use of engine performance diagnostic equipment.

Lecture Hrs. = 3, Lab Hrs. = 0

Prerequisite: READ 300 or ESOL 310 or equivalent

AUMT 2317**Automotive Engine Performance Analysis I**

Theory, operation, diagnosis, and repair of basic engine dynamics, ignition systems, and fuel delivery systems. Use of basic engine performance diagnostic equipment. May be taught with manufacturer specific instructions.

Lecture Hrs. = 2, Lab Hrs. = 2

Prerequisite: READ 300 or ESOL 310 or equivalent

AUMT 2388**Internship - Automobile/Automotive Mechanics Technology/Technician**

A work-based learning experience that enables the student to apply specialized occupational theory, skills and concepts. A learning plan is developed by the college and the employer.

Lecture Hrs. = 0, Lab Hrs. = 0, External Hrs. = 10

Prerequisite: READ 300 or ESOL 310 or equivalent

AUMT 2389**Internship - Automobile/Automotive Mechanics Technology/Technician**

A work-based learning experience that enables the student to apply specialized occupational theory, skills and concepts. A learning plan is developed by the college and the employer.

Lecture Hrs. = 0, Lab Hrs. = 0, External 10

Prerequisite: READ 300 or ESOL 310 or equivalent

BCIS 1405**Business Computer Applications**

This course discusses computer terminology, hardware, software, operating systems, and information systems relating to the business environment. The main focus of this course is on business applications of software, including word processing, spreadsheets, databases, presentation graphics, and business-oriented utilization of the Internet.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: READ 301 or ESOL 311 or equivalent

BIOL 1322**Nutrition**

A study of the basic biological principles of human nutrition in health and disease. Includes the chemical nature of essential nutrients; the biology of their functions in the human body; survey of nutrition in the life cycles; introduction of computer use in diet analysis and diet adequacy; and modification of diets for therapeutic purposes. (May be offered as an internet course).

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: READ 301 or equivalent, ENGL 301 or equivalent, MATH 310 or equivalent

BIOL 1406 Ω**General Biology I**

A general biology course including basic biochemistry, cell biology, cell metabolism and energetics, photosynthesis, genetics, evolution, taxonomy, bacteria, and viruses. A research component is required for honors credit.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: READ 302

Pre/Corequisite: ENGL 301 or equivalent and MATH 310 or equivalent

BIOL 1407 Ω**General Biology II**

A continuation of BIOL 1406 with emphasis on fungi, protists, plants, plant function, animals, animal physiology, ecology, and environmental issues. A research component is required for honors credit.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: BIOL 1406 (C or better), READ 302 or equivalent, ENGL 301 or equivalent, MATH 310 or equivalent

BIOL 1411 Ω**General Botany**

This course presents a panorama of plant life and how plants function, live, reproduce, and interact with their environment and man. The botanical principles discussed will convey a conceptual unity to the knowledge about plants and their relationships in a dynamic world.

Lecture Hrs = 3, Lab Hrs = 3

Pre/Corequisite: READ 301 or equivalent, ENGL 301 or equivalent, MATH 310 or equivalent

BIOL 1413**General Zoology**

This course presents a panorama of animal life and how animals function, live, reproduce and interact with their environment and man. The zoological principles discussed will convey a conceptual unity to the knowledge about animals and their relationships in a dynamic world.

Lecture Hrs = 3, Lab Hrs = 3

Pre/Corequisite: READ 301 or equivalent, ENGL 301 or equivalent, MATH 310 or equivalent

BIOL 1424**Plant Taxonomy**

Taxonomy of flowering plants and principles of identification and classification of plants; nomenclature, characteristics, and field identification of the different plant groups.

Lecture Hrs = 3, Lab Hrs = 3

Pre/Corequisite: READ 301 or equivalent, ENGL 301 or equivalent, MATH 310 or equivalent

BIOL 2305**Pathophysiology**

A study of the structure and function of the human body with specialized emphasis on disease processes.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: BIOL 2401 or BIOL 2404 (with C or better)

BIOL 2401**Human Anatomy and Physiology I**

This course consists of the fundamentals of human anatomy and physiology with the emphasis on etiology and functions of anatomical systems. Laboratory includes dissection of a mammal, study of selected mammalian organs, histological studies, and physiological experiments.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: READ 302 or equivalent

BIOL 2402**Human Anatomy & Physiology II**

A continuation of BIOL 2401.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: BIOL 2401 (C or Better)

BIOL 2404**The Human Body**

The study of the structure and function of the human body, includes integrated topics on nutrition, disease conditions, and hygiene.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: READ 301 or ESOL 311 or equivalent

BIOL 2416**Genetics**

A study of the principles of molecular and classical genetics and the function and transmission of hereditary material. May include population genetics and genetic engineering.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: Any BIOL Course (C or Better)

Pre/Corequisite: READ 301 or equivalent, ENGL 301 or equivalent, MATH 310 or equivalent

BIOL 2421**Microbiology**

A study of the morphology, physiology, and classification of microorganisms with special emphasis on bacteria. Laboratory work includes culturing, staining, and the procedures of disinfection and sterilization techniques.

Lecture Hrs = 3, Lab Hrs = 3

Pre/Corequisite: READ 301 or equivalent, ENGL 301 or equivalent, MATH 310 or equivalent

BMGT 1301**Supervision**

A study of the role of the supervisor. Managerial functions as applied to leadership, counseling, motivation, and human skills are examined.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: READ 300 or equivalent

BMGT 1307**High Performance Work Teams**

A student of the basic principles of building and sustaining teams in organizations including team dynamics and process improvement.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: READ 300, ESOL 310, or equivalent

BMGT 1325**Office Management**

Systems, procedures, and practices related to organizing and planning office work, controlling employees' performance, and exercising leadership skills.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 301, ESOL 311, or equivalent

BMGT 1327**Principles of Management**

Concepts, terminology, principles, theories, and issues in the field of management.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 301 or ESOL 311 or equivalent

BMGT 1331**Production and Operations Management**

Fundamentals of the various techniques used in the practice of production management to include location, design, and resource allocation.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 301 or ESOL 311 or equivalent

BMGT 1341**Business Ethics**

Discussion of ethical issues, the development of a moral frame of reference and the need for an awareness of social justice in management practices and business activities. Review of ethical responsibilities and relationships between organizational departments, divisions, executive management, and the public.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 301 or ESOL 311 or equivalent

BMGT 2309**Leadership**

Concepts of leadership and its relationship to management. Prepares the student with leadership and communication skills needed to motivate and identify.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 301 or ESOL 311 or equivalent

BUSG 2309**Small Business Management**

Starting and operating a small business. Includes facts about a small business, essential management skills, how to prepare a business plan, financial needs, marketing strategies, and legal issues.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 301 or ESOL 311 or equivalent

BUSI 1301**Business Principles**

Introduction to the role of business in modern society. Includes overview of business operations, analysis of the specialized fields within the business organization, and development of a business vocabulary.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 301 or ESOL 311 or equivalent

BUSI 1304**Business Report Writing & Correspondence**

Theory and applications for technical reports and correspondence in business.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 302 or equivalent and ENGL 302 or equivalent

BUSI 1307**Personal Finance**

Personal and family accounts, budgets and budgetary control, bank accounts, charge accounts, borrowing, investing, insurance, standards of living, renting or home ownership, and wills and trust plans.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: READ 301 or equivalent

BUSI 2301**Business Law**

Principles of law which form the legal framework for business activity.

Lecture Hrs = 3, Lab Hrs = 0 Pre/Corequisite: READ 301 or equivalent

CETT 1409**DC-AC Circuits**

Fundamentals of DC circuits and AC circuits operation including Ohm's law, Kirchhoff's laws, networks, transformers, resonance, phasors, capacitive and inductive and circuit analysis techniques.

Lecture Hrs = 3, Lab Hrs = 3

Pre/Corequisite: READ 300, ESOL 310, or equivalent

CHEM 1405 Ω**Introductory Inorganic Chemistry**

An introductory course in inorganic chemistry for liberal arts and other nontechnical majors. This course satisfies requirements for most nursing students and other allied health majors. Covers general principles of chemistry, description of elements and compounds, chemical laws, application of chemistry to modern living. Credit will not be given for both CHEM 1405 and CHEM 1411 or 1412.

Lecture Hrs = 3, Lab Hrs = 3

Pre/Corequisite: READ 301 or equivalent and (MATH 310 or equivalent or prerequisite TECM 1341)

CHEM 1411 Ω**General Chemistry I**

The study of fundamental concepts and laws underlying chemistry, including states of matter, atomic structure, periodic table, chemical bonding, chemical reactions, solutions, gas laws, properties of solids and liquids, qualitative and quantitative analysis including instrumental methods.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: READ 302 or equivalent

Pre/Corequisite: MATH 1414 or equivalent

CHEM 1412**General Chemistry II**

A continuation of CHEM 1411. Study of equilibrium, oxidation-reduction reactions, electrochemistry, chemical thermodynamics, chemical kinetics, solutions, solubility of salts, acids and bases, buffers, properties of elements in the periodic groups, complexions, introductory organic chemistry, systematic qualitative analysis of common cations and anions, and quantitative analysis including instrumental methods.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: CHEM 1411, MATH 1414 or equivalent, READ 302 or equivalent

CHEM 1419 Ω**Introductory Organic Chemistry**

An introductory course in organic chemistry for liberal arts and other nontechnical majors. This course satisfies requirements for most nursing students and other allied health majors. Covers basic chemical principles, the chemistry of carbon and its compounds, fuels, polymers, foods and nutrition, and physiologically active compounds and application of organic chemistry to modern living. Credit will not be given for both CHEM 1419 and CHEM 1411 or 1412.

Lecture Hrs = 3, Lab Hrs = 3

Pre/Corequisite: READ 301 or equivalent and (MATH 310 or equivalent or prerequisite TECM 1341)

CHEM 2401**Analytical Environmental Chemistry**

The principles and methods of quantitative chemical analysis dealing primarily with volumetric and gravimetric analysis and containing a brief introduction to instrumental methods. The laboratory consists of environmental analysis of air and water samples using standard methods commonly used in industry.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: CHEM 1412, MATH 1414, READ 302

CHEM 2423**Organic Chemistry I**

A study of the nomenclature, mechanism of reactions, synthesis of organic compounds, isolation and analysis of organic compounds, and determination of physical constants. Includes both the aliphatic and aromatic hydrocarbons and their derivatives, cis-trans and optical isomerism.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: CHEM 1412, MATH 1414, READ 302

CHEM 2425**Organic Chemistry II**

A continuation of CHEM 2423 which includes study of aldehydes and ketones, amines, alcohols, carboxylic acids and derivatives, amino acids and proteins, and carbohydrates. Continued study of the analysis of organic compounds, including instrumental methods.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: CHEM 2423

CJSA 2382**Cooperative Education - Criminal Justice/Safety Studies**

Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component.

Lecture Hrs = 1, Lab Hrs = 0, External Hrs = 15

Prerequisite: READ 301 or ESOL 311 or equivalent

CNBT 1300**Residential and Light Commercial Blueprint Reading**

Introductory blueprint reading for residential and light commercial construction.

Lecture Hrs = 3, Lab Hrs = 1

Pre/Corequisite: READ 301, ESOL 311, or equivalent

CNBT 1311**Construction Methods and Materials I**

Introduction to construction materials and methods and their applications.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: READ 301, ESOL 311, or equivalent

CNBT 1316**Construction Technology I**

Site preparation, foundation, form work, and framing. Includes safety; tools and equipment; basic site preparation; basic foundations and form work; and basic floor, wall, and framing methods and systems.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: READ 301, ESOL 311, or equivalent

CNBT 1442**Building Codes and Inspections**

Building codes and standards applicable to building construction and inspection processes.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: READ 300 or ESOL 310 or equivalent

CNBT 1491**Special Topics in Construction/Building Technology/Technician**

Topics address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course was designed to be repeated multiple times to improve student proficiency.

Lecture Hrs = 3, Lab Hrs = 3

Pre/Corequisite: READ 301, ESOL 311, or equivalent

CNBT 2310**Commercial/Industrial Blueprint Reading**

Introductory blueprint reading for commercial/industrial construction.

Lecture Hrs = 3, Lab Hrs = 3

Pre/Corequisite: READ 301, ESOL 311, or equivalent

CNBT 2317**Green Building**

Methods and materials used for buildings that conserve energy, water, and human resources.

Lecture Hrs = 3, Lab Hrs = 3

Pre/Corequisite: READ 301, ESOL 311, or equivalent

CNBT 2437**Construction Estimating II**

Advanced estimating concepts using computer software programs for construction and crafts.

Lecture Hrs = 3, Lab Hrs = 3

Pre/Corequisite: READ 301, ESOL 311, or equivalent

CNBT 2442**Construction Management I**

Human relations management skills in motivation on the job site. Topics include written and oral communications, leadership and motivation, problem solving, and decision making.

Lecture Hrs = 4, Lab Hrs = 0

Pre/Corequisite: READ 301, ESOL 311, or equivalent

CNBT 2444**Construction Management II**

A management course in contract documents, safety, planning, scheduling, production control, and law and labor. Topics include contracts, planning, cost and production peripheral documents, and cost and work analysis.

Lecture Hrs = 3, Lab Hrs = 3

Pre/Corequisite: READ 301, ESOL 311, or equivalent

CNBT 2467**Practicum (or Field Experience) - Construction Engineering Technology/Technician**

Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student.

Lecture Hrs = 0, Lab Hrs = 0, External Hrs = 28

Prerequisite: 12 hours of CNBT credit AND Read 301, ESOL 311, or equivalent

COMM 1307**Introduction to Mass Communications**

A general study of the mass media with emphasis on print, broadcast, and film. Includes the interrelationship of mass media in modern society with reference to its evolution. Gives the non-journalism major the knowledge to be a more intelligent user of the mass media. Introduces the journalism major to all areas of journalism stressing responsibility and ethics. This course taught in fall semester only.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: ENGL 301 or equivalent, READ 302 or equivalent

COMM 2220**Advanced Recording and Production Techniques**

Examination of the role of the producer including recording, mixing, arranging, analyzing projects, session planning, communication, budgeting, business aspects, technical considerations, and music markets. Execute advanced recording and producing projects.
Lecture Hrs = 2 Lab Hrs = 4

Prerequisite: COMM 2325, COMM 2326, Instructor's permission

Pre/Corequisite: READ 300, ESOL 310, or equivalent

COMM 2289A**Audio Recording Cooperative**

Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student.

Lecture Hrs = 1, Lab Hrs = 0, External Hrs = 6

Prerequisite: Instructor's permission

Pre/Corequisite: READ 300 or equivalent

Instructor Consent Required

COMM 2303**Beginning Recording Techniques**

Overview of the recording studio. Topics include basic studio electronics and acoustic principles, wave form analysis, microphone concepts and miking techniques, studio set up and signal flow, recording console theory, signal processing concepts, recorder principles and operation, and an overview of mixing and editing.

Lecture Hrs = 3, Lab Hrs = 1

Pre/Corequisite: READ 300 or equivalent

COMM 2305**Business Publication Design**

Technical emphasis on design and production of printed materials such as reports, brochures, booklets and manuals. Subjects covered will include typography, layout and effective use of color and graphic effects. This course is computer-based.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: ENGL 302 or equivalent, READ 301 or equivalent

COMM 2324**Intermediate Recording Techniques**

Implementation of the recording process, microphones, audio console, multi-track recorder, and signal processing devices.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: COMM 2303

Pre/Corequisite: READ 300 or equivalent

COMM 2325**Electronic Music I (Editing Hard Disc)**

Procedures and techniques in recording and manipulating audio. Topics include advanced hard disk digital editing, linear and nonlinear digital multi-track recording and advanced engineering project completions.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: COMM 2324, MUSI 1301 or MUSI 1311

Pre/Corequisite: READ 300 or equivalent

COMM 2326**Electronic Music II (MIDI Interface)**

History and evolution of Musical Digital Interface (MIDI) systems and applications, the MIDI language, and applications in the studio environment using software based sequencing programs.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: COMM 2324, MUSI 1301 or MUSI 1311

Pre/Corequisite: READ 300 or equivalent

COMM 2389H**Communications Cooperative**

This course provides students with work-related experience in any of the following areas: journalism, mass communications, electronic broadcast media, public relations, advertising, audio enhancement, graphic design, web page development.

Lecture Hrs = 1, Lab Hrs = 0, External Lab Hrs = 6

Prerequisite: READ 302 or equivalent

Instructor Consent Required

COSC 1301**Microcomputer Applications**

Overview of computer information systems. Introduces computer hardware, software, procedures, systems, and human resources and explores their integration and application in business and other segments in society. The fundamentals of computer problem solving and programming in a higher level programming language may be discussed and applied.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 301 or ESOL 311 or equivalent

COSC 1436**Programming Fundamentals I**

Introduces the fundamental concepts of structured programming. Topics include software development methodology, data types, control structures, functions, arrays, and the mechanics of running, testing, and debugging. This course assumes computer literacy.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: COSC 1301 or ITSC 1309, READ 301 or equivalent

COSC 1437**Programming Fundamentals II**

Review of control structures and data types with emphasis on structured data types. Applies the object-oriented programming paradigm, focusing on the definition and use of classes along with the fundamentals of object-oriented design. Includes basic analysis of algorithms, searching and sorting techniques, and an introduction to software engineering.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: COSC 1436, READ 301 or equivalent

COSC 2325**Computer Organization and Machine Language**

Basic computer organization; machine cycle, digital representation of data and instructions; assembly language programming, assembler, loader, macros, subroutines, and program linkages.

Lecture Hrs = 2, Lab Hrs = 2

Prerequisite: COSC 1436, READ 301 or equivalent

COSC 2436**Programming Fundamentals III**

Further applications of programming techniques, introducing the fundamental concepts of data structures and algorithms. Topics include recursion, fundamental data structures (including stacks, queues, linked lists, hash tables, trees, and graphs), and algorithmic analysis.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: COSC 1437, READ 301 or equivalent

COSS 100**Applied Study Skills**

Application of study skills techniques to individual learning styles with concentration on note-taking, text marking, and test preparation.

Lecture Hrs = 1, Lab Hrs = 0

COSS 300**Study Skills**

Techniques of study such as time management, listening and note-taking, text marking, library and research skills, preparation for examinations, and use of learning resources.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: READ 300 or equivalent

CPMT 1407**Electronic and Computer Skills**

A course in current electronic construction techniques including using common hand tools in disassembly, repair, and re-assembly of electronics and computer components.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: READ 300 or ESOL 310 or equivalent

CPMT 1411**Introduction to Computer Maintenance**

Introduction to the installation, configuration, and maintenance of a microcomputer system.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: READ 300 or ESOL 310 or equivalent

CPMT 1449**Computer Networking Technology**

Networking fundamentals, terminology, hardware, software, and network architecture. Includes local and wide area networking concepts and networking installations and operations.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: READ 300 or equivalent

CPMT 2445**Computer System Troubleshooting**

Principles and practices involved in computer system troubleshooting techniques and repair procedures including advanced diagnostic test programs and the use of specialized test equipment.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: CPMT 1411, READ 300 or equivalent

CPMT 2449**Advanced Computer Networking Technology**

Network technology emphasizing network operating systems, network connectivity, hardware, and software. Includes implementation, troubleshooting, and maintenance of LAN and/or WAN network environments.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: READ 300 or equivalent

Pre/Corequisite: CPMT 1449

CPMT 2488**Internship-Computer Installation and Repair Technology**

A work-based learning experience that enables the student to apply specialized occupational theory, skills and concepts. A learning plan is developed by the college and the employer.

Lecture Hrs = 0, Lab Hrs = 0, External Hrs = 15

Prerequisite: CPMT 2445, READ 300 or equivalent

CRIJ 1301**Introduction to Criminal Justice**

History, philosophy, and ethical considerations of criminal justice; the nature and impact of crime; and an overview of the criminal justice system, including law enforcement and court procedures.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 301 or ESOL 311 or equivalent

CRIJ 1306**Court Systems & Practices**

Study of the judiciary in the American criminal justice system and the adjudication processes and procedures. *Lecture Hrs = 3, Lab Hrs = 0*

Prerequisite: READ 301 or ESOL 311 or equivalent

CRIJ 1307**Crime in America**

American crime problems in historical perspective, social and public policy factors affecting crime, impact and crime trends, social characteristics of specific crimes, and prevention of crime.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 301 or ESOL 311 or equivalent

CRIJ 1310**Fundamentals of Criminal Law**

Study of criminal law, its philosophical and historical development, major definitions and concepts, classifications and elements of crime, penalties using Texas statutes as illustrations, and criminal responsibility.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 301 or ESOL 311 or equivalent

CRIJ 1313**Juvenile Justice System**

A study of the juvenile justice process. Topics include specialized juvenile law, role of the juvenile law, role of the juvenile courts, role of police agencies, role of correctional agencies, and theories concerning delinquency.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 301 or ESOL 311 or equivalent

CRIJ 2301**Community Resources in Corrections**

An introductory study of the role of the community in corrections; community programs for adults and juveniles; administration of community programs; legal issues; future trends in community treatment.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 301 or ESOL 311 or equivalent

CRIJ 2313**Correctional Systems and Practices**

Corrections in the criminal justice system; organization of correctional systems; correctional role; institutional operations; alternatives to institutionalization; treatment and rehabilitation; current and future issues.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 301 or ESOL 311 or equivalent

CRIJ 2314**Criminal Investigation**

Investigative theory; collection and preservation of evidence; sources of information; interview and interrogation; uses of forensic sciences; case and trial preparation.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 301 or ESOL 311 or equivalent

CRIJ 2323**Legal Aspects of Law Enforcement**

Police authority; responsibilities; constitutional constraints; law of arrest, search, and seizure; police liability.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 301 or equivalent

CRIJ 2328**Police Systems and Practices**

The police profession; organization of law enforcement systems; the police role; police discretion; ethics; police-community interaction; current and future issues.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 301 or equivalent

CSME 1244**Introduction to Salon Development**

Overview of the procedures and operations as related to salon management.

Lecture Hrs = 1, Lab Hrs = 3

Pre/Corequisite: READ 300 or equivalent

CSME 1248**Principles of Skin Care**

An introduction of the theory and practice of skin care.

Lecture Hrs = 1, Lab Hrs = 3, Insurance Fee

Pre/Corequisite: CSME 1505, READ 300 or equivalent

CSME 1330**Orientation to Nail Technology**

An overview of the fundamental skills and knowledge necessary for the field of nail technology.

Lecture Hrs = 1, Lab Hrs = 8, Insurance Fee

Pre/Corequisite: READ 300 or equivalent

CSME 1410**Introduction to Haircutting and Related Theory**

Introduction to the theory and practice of hair cutting. Topics include terminology, implements, sectioning and finishing techniques.

Lecture Hrs = 2, Lab Hrs = 7, Insurance Fee

Pre/Corequisite: CSME 1505, READ 300 or equivalent

CSME 1431**Principles of Nail Technology I**

A course in the principles of nail technology. Topics include anatomy, physiology, theory, and skills related to nail technology.

Lecture Hrs = 2, Lab Hrs = 8, Insurance Fee

Prerequisite: CSME 1330

Pre/Corequisite: READ 300 or equivalent

CSME 1434**Cosmetology Instructor I**

The fundamentals of instructing cosmetology students.

Lecture Hrs = 2, Lab Hrs = 6, Insurance Fee

Note: A High School diploma or GED and a valid Texas Cosmetology License is required for admission to this class

Pre/Corequisite: READ 300 or equivalent

CSME 1435**Orientation to the Instruction of Cosmetology**

An overview of the skills and knowledge necessary for the instruction of cosmetology students.

Lecture Hrs = 2, Lab Hrs = 6, Insurance Fee

Note: A High School diploma or GED and a valid Texas Cosmetology License is required for admission to this class

Pre/Corequisite: READ 300 or equivalent

CSME 1441**Principles of Nail Technology II**

A continuation of the concepts and principles of nail technology. Topics include advanced instruction in anatomy, physiology, theory, and related skills of nail technology.

Lecture Hrs = 2, Lab Hrs = 8, Insurance Fee

Prerequisite: CSME 1330

Pre/Corequisite: READ 300 or equivalent

CSME 1453**Chemical Reformation and Related Theory**

Presentation of the theory and practice of chemical reformation including terminology, application, and workplace competencies.

Lecture Hrs = 2, Lab Hrs = 6, Insurance Fee

Pre/Corequisite: CSME 1505, READ 300 or equivalent

CSME 1505**Fundamentals of Cosmetology**

A course in the basic fundamentals of cosmetology. Topics include service preparation, manicure, facial, chemical services, shampoo, haircut, wet styling, comb out.

Lecture Hrs = 3, Lab Hrs = 8

Pre/Corequisite: READ 300 or equivalent

CSME 1551**Artistry of Hair, Theory and Practice**

Instruction in the artistry of hair design. Topics include theory, techniques, and application of hair design.

Lecture Hrs = 2, Lab Hrs = 9

Pre/Corequisite: CSME 1505, READ 300 or equivalent

CSME 2245**Preparation for the State Licensing Practical Examination**

Preparation for the state licensing practical examination.

Lecture Hrs = 0, Lab Hrs = 6

Note: A High School diploma or GED is required for admission to this class.

Prerequisite: CSME 1505

Pre/Corequisite: READ 300 or equivalent

CSME 2337**Advanced Cosmetology Techniques**

Mastery of advanced cosmetology techniques including hair designs, professional cosmetology services, and workplace competencies.

Lecture Hrs = 1, Lab Hrs = 8, Insurance Fee

Pre/Corequisite: CSME 1505 and READ 300, ESOL 310, or equivalent

CSME 2343**Salon Development**

Exploration of salon development. Topics include professional ethics and goals, salon operation, and record keeping.

Lecture Hrs = 2, Lab Hrs = 4, Insurance Fee

Pre/Corequisite: CSME 1505, READ 300 or equivalent

CSME 2344**Preparation for the State Licensing Written Examination**

Preparation for the state licensing written examination.

Lecture Hrs = 1, Lab Hrs = 7

Note: A High School diploma or GED is required for admission to this class.

Prerequisite: CSME 1505

Pre/Corequisite: READ 300 or equivalent

CSME 2401**The Principles of Hair Coloring and Related Theory**

Presentation of the theory, practice, and chemistry of hair color. Topics include terminology, application, and workplace competencies related to hair color.

Lecture Hrs = 2, Lab Hrs = 7, Insurance Fee

Pre/Corequisite: CSME 1505, READ 300 or equivalent

CSME 2414**Cosmetology Instructor II**

A continuation of the fundamentals of instructing cosmetology students.

Lecture Hrs = 2, Lab Hrs = 6, Insurance Fee

Prerequisite: CSME 1435

Pre/Corequisite: READ 300 or equivalent

CSME 2415**Cosmetology Instructor III**

Presentation of lesson plan assignments and evaluation techniques.

Lecture Hrs = 2, Lab Hrs = 6, Insurance Fee

Prerequisite: CSME 1435

Pre/Corequisite: READ 300 or equivalent

CSME 2444**Cosmetology Instructor IV**

Advanced concepts of instruction in a cosmetology program. Topics include demonstration, development, and implementation of advanced evaluation and assessment techniques.

Lecture Hrs = 2, Lab Hrs = 6, Insurance Fee

Prerequisite: CSME 1435

Pre/Corequisite: READ 300 or equivalent

CSME 2445**Instructional Theory and Clinic Operation**

An overview of the objectives required by the Texas Cosmetology Commission Instructor Examination.

Lecture Hrs = 2, Lab Hrs = 6, Insurance Fee

Prerequisite: CSME 1435

Pre/Corequisite: READ 300 or equivalent

CSME 2530**Nail Enhancement**

A course in the theory, application, and related technology of artificial nails.

Lecture Hrs = 3, Lab Hrs = 6, Insurance Fee

Prerequisite: CSME 1330

Pre/Corequisite: READ 300 or equivalent

CSME 2539**Advanced Hair Design**

Advanced concepts in the theory and practice of hair design.

Lecture Hrs = 2, Lab Hrs = 9, Insurance Fee

Pre/Corequisite: CSME 1505, READ 300 or equivalent

DAAC 1304**Pharmacology of Addiction**

Psychological, physiological, and sociological effects of mood altering substances and behaviors. Emphasizes pharmacological effects of tolerance, dependency/withdrawal, cross addiction, and drug interaction.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 300 or ESOL 310 or equivalent

DAAC 1309**Assessment Skill of Alcohol and Other Drug Addictions**

Examines procedures and tools used to identify and assess a client's strengths, weaknesses, problems, and needs.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 300 or ESOL 310 or equivalent

DAAC 1311**Counseling Theories**

Major theories and current treatment modalities.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 300 or ESOL 310 or equivalent

DAAC 1317**Basic Counseling Skills**

Facilitate development of the basic counseling skills necessary to develop an effective helping relationship with clients. Includes the utilization of special skills to assist in achieving objectives through exploration of problems, examination of attitudes and feelings, consideration of alternative solutions, and decision making.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 300 or ESOL 310 or equivalent

DAAC 1319**Introduction to Alcohol and Other Drug Addictions**

Causes and consequences of addiction as they relate to the individual, family, community, and society. Overview of alternatives regarding prevention, intervention, and treatment. Includes explanation of competencies and requirements for licensure in Texas. Also covers addiction issues related to diverse populations.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 300 or ESOL 310 or equivalent

DAAC 1391**Special Topics in Alcohol/Drug Abuse Counseling: Advanced Group Ski**

Topics address recently identified current events, skills, knowledges, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course was designed to be repeated multiple times to improve student proficiency. This course will be a continuation of the study of the patterns and dynamics of group interactions across the life span. Focus includes group therapy, structure, types, stages, development, leadership, therapeutic factors, the effectiveness of group on the individual, group growth and behavior. Effective group facilitation skills, techniques, case management, and record keeping are addressed.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: DAAC 2354, READ 300 or equivalent

DAAC 2280**Cooperative Education-Substance Abuse/Addiction Counseling**

Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component.

Lecture Hrs = 1, Lab Hrs = 0, External Hrs = 10,

Insurance Fee

Prerequisite: 18 SCH of DAAC Coursework

Pre/Corequisite: READ 300 or equivalent

DAAC 2281**Cooperative Education-Substance Abuse/Addiction Counseling**

Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component.

Lecture Hrs = 1, Lab Hrs = 0, External Hrs = 10, Insurance Fee

Prerequisite: 18 SCH of DAAC Coursework

Pre/Corequisite: READ 300 or equivalent

DAAC 2307**Addicted Family Intervention**

The family as a dynamic system focusing on the effects of addiction on family roles, rules, and behavior patterns. Includes the effects of mood altering substances, behaviors, and therapeutic alternatives as they relate to the family from a multicultural and transgenerational perspective.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 300 or ESOL 310 or equivalent

DAAC 2341**Counseling Alcohol and Other Drug Addictions**

Special skills and techniques in the application of counseling skills for the Alcohol and Other Drug (AOD) client. Development and utilization of advanced treatment planning and management. Includes review of confidentiality and ethical issues.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 300 or ESOL 310 or equivalent

DAAC 2343 Ω**Current Issues**

Current issues in addiction counseling. Includes special populations, dual diagnosis, ethics, gambling, and infectious diseases associated with addiction counseling.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 300 or ESOL 310 or equivalent

DAAC 2354**Dynamics of Group Counseling**

Exploration of group counseling skills, techniques, and stages of group development.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 300 or ESOL 310 or equivalent

DFTG 1405**Technical Drafting**

Introduction to the principles of drafting to include terminology and fundamentals, including size and shape descriptions, projection methods, geometric construction, sections, auxiliary views, and reproduction processes.

Lecture Hrs = 3, Lab Hrs = 3

Pre/Corequisite: READ 301 or equivalent

DFTG 1409**Basic Computer-Aided Drafting**

An introduction to computer-aided drafting. Emphasis is placed on setup; creating and modifying geometry; storing and retrieving predefined shapes; placing, rotating, and scaling objects, adding text and dimensions, using layers, coordinate systems, and plot/print to scale.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: READ 301 or equivalent

DFTG 1417**Architectural Drafting-Residential**

Architectural drafting procedures, practices, and symbols. Preparation of detailed working drawings for residential structures. Emphasis on light frame construction methods.

Lecture Hrs = 3, Lab Hrs = 3

Pre/Corequisite: DFTG 2419, READ 301 or equivalent

DFTG 1433**Mechanical Drafting**

Detail drawings with proper dimensioning and tolerances, use of sectioning techniques, common fasteners, pictorial drawings, including bill of materials.

Lecture Hrs = 3, Lab Hrs = 3

Pre/Corequisite: DFTG 2419, READ 301 or equivalent

DFTG 1458**Electrical/Electronics Drafting**

Electrical and electronic drawings stressing modern representation used for block diagrams, schematic diagrams, logic diagrams, wiring/assembly drawings, printed circuit board layouts, motor control diagrams, power distribution diagrams, and electrical one-line diagrams.

Lecture Hrs = 3, Lab Hrs = 3

Pre/Corequisite: DFTG 2419 and READ 301 or equivalent

DFTG 2400**Intermediate Architectural Drafting-Residential**

Continued application of principles and practices used in residential construction.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: DFTG 1417, DFTG 2419

Pre/Corequisite: READ 301 or equivalent

DFTG 2408**Instrumentation Drafting**

Principles of instrumentation as applicable to industrial applications; fundamentals of measurement and control devices; currently used ISA (Instrument Society of America) symbology; basic flow sheet layout and drafting practices.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: DFTG 2419

Pre/Corequisite: READ 301 or equivalent

DFTG 2412**Technical Illustration Presentations**

Pictorial drawing including isometrics, obliques, perspectives, charts, and graphs. Emphasis on rendering and using different media.

Lecture Hrs = 3, Lab Hrs = 3

Pre/Corequisite: DFTG 2419 and READ 301 or equivalent

DFTG 2419**Intermediate Computer - Aided Drafting**

A continuation of practices and techniques used in basic computer-aided drafting emphasizing advanced dimensioning techniques, the development and use of prototype drawings, construction of pictorial drawings, construction of 3 dimensional drawings, interfacing 2d and 3d environments and extracting data.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: DFTG 1405, DFTG 1409

Pre/Corequisite: READ 301 or equivalent

DFTG 2423**Pipe Drafting**

A study of pipe fittings, symbols, specifications and their applications to a piping process system. Creation of symbols and their usage in flow diagrams, plans, elevations, and isometrics.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: DFTG 2419

Pre/Corequisite: READ 301 or equivalent

DFTG 2427**Landscape Drafting**

A study of site planning and landscape design.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: DFTG 2419

Pre/Corequisite: READ 301 or equivalent

DFTG 2428**Architectural Drafting-Commercial**

Architectural drafting procedures, practices, and symbols including the preparation of detailed working drawings for a commercial building, with emphasis on commercial construction methods.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: DFTG 1417

Pre/Corequisite: READ 301 or equivalent

DFTG 2430**Civil Drafting**

An in-depth study of drafting methods and principles used in civil engineering.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: DFTG 2419

Pre/Corequisite: READ 301 or equivalent

DFTG 2431**Advanced Technologies in Architectural Design and Drafting**

Use of architectural specific software to execute the elements required in designing standard architectural exhibits utilizing custom features to create walls, windows and specific design requirements for construction in residential/commercial and industrial architecture.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: DFTG 2400

Pre/Corequisite: READ 301 or equivalent

DFTG 2432**Advanced Computer-Aided Drafting**

Advanced techniques, including the use of a customized system. Presentation of advanced drawing applications, such as three-dimensional solids modeling and linking graphic entities to external non-graphic data.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: DFTG 2419

Pre/Corequisite: READ 301 or equivalent

DFTG 2435**Advanced Technologies in Mechanical Design and Drafting**

Use parametric-based software for mechanical design for advanced modeling and analysis.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: DFTG 1433

Pre/Corequisite: READ 301 or equivalent

DFTG 2438**Final Project-Advanced Drafting**

A drafting course in which students participate in a comprehensive project from conception to conclusion.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: DFTG 2419

Pre/Corequisite: READ 301 or equivalent

DFTG 2440**Solid Modeling/Design**

A computer-aided modeling course. Development of three-dimensional drawings and models from engineering sketches and orthographic drawings and utilization of three-dimensional models in design work.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: DFTG 2419

Pre/Corequisite: READ 301 or equivalent

DFTG 2442**Aeronautical Drafting**

A study of aeronautical drawings required in the aircraft and aerospace industries.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: DFTG 2419

Pre/Corequisite: READ 301 or equivalent

DFTG 2445**Advanced Pipe Drafting**

A continuation of pipe drafting concepts building on the basic principles acquired in pipe drafting.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: DFTG 2423

Pre/Corequisite: READ 301 or equivalent

DFTG 2467**Practicum (for Field Experience)-Drafting and Design Technology/Tech**

Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student.

Lecture Hrs = 0, Lab Hrs = 0, External Hrs = 40

Prerequisite: DFTG 2419

Pre/Corequisite: READ 301 or equivalent

DFTG 2486**Internship - Drafting and Design Technology/Technician, General**

A work-based learning experience that enables the student to apply specialized occupational theory, skills and concepts. A learning plan is developed by the college and the employer.

Lecture Hrs = 0, Lab Hrs = 0, External Hrs = 20

Prerequisite: DFTG 2419

Pre/Corequisite: READ 301 or equivalent

DRAM 1120**Theatre Arts Lab I**

Open to all students interested in theatre. Credit is earned for acting, technical work, or other participation. Limited to one semester credit hour each semester. Each course may be taken up to two times.

Lecture Hrs = 0, Lab Hrs = 6

Prerequisite: READ 300 or ESOL 310 or equivalent

DRAM 1121**Theater Arts Lab II**

Open to all students interested in theatre. Credit is earned for acting, technical work, or other participation. Limited to one semester credit hour each semester. Each course may be taken up to two times.

Lecture Hrs = 0, Lab Hrs = 6

Prerequisite: READ 301 or ESOL 311 or equivalent

DRAM 1310**Introduction to the Theatre**

An introduction to the nature of theatre art and the dramatic genres, and the functions of the basic practices of the playwright, actor, director, and designer in contemporary theatre.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 300 or ESOL 310 or equivalent

DRAM 1330**Elementary Stagecraft**

Introduction to the technical aspects of set design, lighting, sound, costumes, and makeup. Participation in the Drama Department's productions required.

Lecture Hrs = 2, Lab Hrs = 2

Prerequisite: READ 300 or ESOL 310 or equivalent

DRAM 1341**Principles of Theatrical Makeup**

The principles of straight and character makeup, intensive practical application, and experience in stage productions are provided to the student.

Lecture Hrs = 1, Lab Hrs = 2

Prerequisite: READ 300 or ESOL 310 or equivalent

DRAM 1342**Introduction to Costume**

Principles and techniques of costume design and construction for theatrical productions.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: READ 300 or ESOL 310 or equivalent

DRAM 1351**Introduction to Acting**

Introduction to the basic techniques of acting, with major emphasis on diction and character development. Opportunity to participate in the Drama Department's productions. Class scenes required.

Lecture Hrs = 2, Lab Hrs = 2

Prerequisite: READ 300 or ESOL 310 or equivalent

DRAM 1352**Advanced Acting**

Study and practical experience in problems of creating characterization with emphasis on developing vocal and physical skill in acting.

Lecture Hrs = 2, Lab Hrs = 2

Prerequisite: DRAM 1351, READ 300 or equivalent

DRAM 2120 Ω**Theatre Arts Lab III**

Open to all students interested in theatre. Credit is earned for acting, technical work, or other participation. Limited to one semester credit hour each semester. Each course may be taken up to two times.

Lecture Hrs = 0, Lab Hrs = 6

Prerequisite: READ 300 or ESOL 310 or equivalent

DRAM 2121**Theater Arts Lab IV**

Open to all students interested in theatre. Credit is earned for acting, technical work, or other participation. Course can be taken up to two times.

Lecture Hrs = 0, Lab Hrs = 6

Pre/Corequisite: READ 300 or equivalent

DRAM 2189**Theatre Academic Cooperative**

Individualized instruction or supervised projects in various areas of theatre.

Lecture Hrs = 0, Lab Hrs = 0, External Hrs = 6

Pre/Corequisite: READ 300 or equivalent

DRAM 2331**Advanced Stagecraft**

General consideration of the art of the theatre as it relates to the stage, scenery, and lighting for college production. Participation in Drama Department's productions required.

Lecture Hrs = 2, Lab Hrs = 2

Prerequisite: DRAM 1330, READ 300 or equivalent

DRAM 2336**Voice and Diction**

Open to all students interested in improving their diction. Development of the voice and proper diction. Coaching of the individual student with the aid of audio taping and an audio journal. Same as SPCH 1342.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 300 or ESOL 310 or equivalent

DRAM 2361**History of Theatre I**

Survey of growth and development of the theatre from its beginnings to 1660 with consideration of dramatic literature, physical theatre, style of presentation, and social significance of theatre.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 300 or ESOL 310 or equivalent

DRAM 2362**History of Theatre II**

Survey of growth and development of the theatre from 1660 to the present with consideration of dramatic literature, physical theatre, style of presentation, and social significance of theatre.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 300 or ESOL 310 or equivalent

DRAM 2366**History and Development of Motion Pictures**

A survey of the history and development of motion pictures with emphasis on analysis and understanding of significant movements and schools of filmmaking, critical approaches, sociological impact, and visual aesthetics of motion pictures. Two lecture hours and one two-hour film screening a week for one semester.

Lecture Hrs = 2, Lab Hrs = 2

Prerequisite: READ 300 or ESOL 310 or equivalent

ECON 2301**Principles of Economics: Macroeconomics**

This course emphasizes macroeconomics; economic analysis of forces determining levels of income, prices, and employment; economic growth; explanation of economic terms and institutions; and consideration of current problems.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 302 or equivalent, ENGL 301 or equivalent, and MATH 310 or equivalent

ECON 2302**Principles of Economics: Microeconomics**

This course emphasizes microeconomics; economic analysis of decision making in perfect and imperfect product and factor markets, explanation of economic terms and institutions, and consideration of current problems.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 302 or equivalent, ENGL 301 or equivalent, and MATH 310 or equivalent

EDUC 1300**Learning Framework**

A study of the 1) research and theory in the psychology of learning, cognition, and motivation, 2) factors that impact learning, and 3) application of learning strategies. Theoretical models of strategic learning and motivation serve as the conceptual basis for the introduction of college-level student academic strategies.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 301 or ESOL 311 or equivalent

EDUC 1301**Introduction to the Teaching Profession**

An enriched, integrated pre-service course with content experience that provides an overview of schooling and classrooms from the perspectives of language, gender, socioeconomic status, ethnic, and academic diversity and equity with an emphasis on learning. The course includes a minimum of 15 contact hours of field observations in P-12 classrooms and aligns with the State Board of Educator Certification Pedagogy and Professional Responsibilities standards.

Lecture Hrs = 2, Lab Hrs = 2

Prerequisite: READ 301 or equivalent

EDUC 2301**Introduction to Special Populations**

An enriched, integrated pre-service course with content experience that provides an overview of schooling and classrooms from the perspectives of language, gender, socioeconomic status, ethnic, and academic diversity and equity with an emphasis on learning. The course includes a minimum of 15 contact hours of field observations in P-12 classrooms and aligns with the State Board of Educator Certification Pedagogy and Professional Responsibilities standards.

Lecture Hrs = 2, Lab Hrs = 2

Prerequisite: READ 302 or equivalent

ELPT 1321**Introduction to Electrical Safety and Tools**

Safety rules and regulations. Includes the selection, inspection, use, and maintenance of common tools for electricians.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: READ 300 or equivalent

ELPT 1325**National Electrical Code I**

An introductory study of the National Electric Code (NEC) for those employed in fields requiring knowledge of the Code. Emphasis on wiring design, protection, methods, and materials; equipment for general use; and basic calculations.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: READ 300 or equivalent

ELPT 1419**Fundamentals of Electricity I**

An introduction to basic direct current (DC) theory including electron theory and direct current applications.

Lecture Hrs = 3, Lab Hrs = 3

Pre/Corequisite: READ 300 or equivalent

ELPT 1420**Fundamentals of Electricity II**

Introduces to alternating current (AC). Includes AC voltage, frequency, mechanical and electrical degrees, waveforms, resistors, capacitors, and inductors.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: ELPT 1419

Pre/Corequisite: READ 300 or equivalent

ELPT 1441**Motor Control**

Operating principles of solid-state conventional controls along with their practical applications. Includes braking, jogging, plugging, and safety interlocks wiring, and schematic diagram interpretations.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: ELPT 1419

Pre/Corequisite: READ 300 or equivalent

ELPT 1445**Commercial Wiring**

Commercial wiring methods. Includes overcurrent protection, raceway panel board installation, proper grounding techniques, and associated safety procedures.

Lecture Hrs = 3, Lab Hrs = 3

Pre/Corequisite: READ 300 or equivalent

ELPT 1455**Electronic Applications**

Electronic principles and the use of electronic devices. Includes diodes, transistors, and rectifiers.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: ELPT 1419

Pre/Corequisite: READ 300 or equivalent

ELPT 2301**Journeyman Electrician Exam Review**

Preparation for journeyman electrician licensure with emphasis on calculations and the National Electrical Code (NEC).

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: READ 300 or equivalent

ELPT 2319**Programmable Logic Controllers I**

Fundamental concepts of programmable logic controllers, principles of operation, and numbering systems as applied to electrical controls.

Lecture Hrs = 2, Lab Hrs = 2

Pre/Corequisite: ELPT 1420, READ 300 or equivalent

ELPT 2325**National Electrical Code II**

In-depth coverage of the National Electric Code (NEC) for those employed in fields requiring knowledge of the Code. Emphasis on wiring protection and methods, special conditions, and advanced calculations.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: READ 300 or equivalent

ELPT 2331**AC/DC Drives**

Installation and maintenance of alternating current (AC) and direct current (DC) variable speed drives with emphasis on application, operating characteristics, and troubleshooting techniques.

Lecture Hrs = 2, Lab Hrs = 2

Prerequisite: ELPT 2405

Pre/Corequisite: READ 300 or equivalent

ELPT 2355**Programmable Logic Controllers II**

Advanced concepts in programmable logic controllers and their applications and interfacing to industrial controls.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisites: ELPT 2319 or ELPT 1455

Pre/Corequisite: READ 300 or equivalent

ELPT 2380**Cooperative Education - Electrical and Power Transmission Installation**

Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component.

Lecture Hrs = 1, Lab Hrs = 0, External Hrs = 19

Prerequisite: ELPT 1420 and READ 301 or equivalent

ELPT 2405**Motors and Transformers**

Operation of single-and three-phase motors and transformers. Includes transformer banking, power factor correction, and protective devices.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: ELPT 1420

Pre/Corequisite: READ 300 or equivalent

ENGL 300**Developmental Writing**

Development of fundamental writing skills such as idea generation, organization, style, utilization of standard English, and revision.

Lecture Hrs = 3, Lab Hrs = 0

ENGL 301**Fundamentals of Writing I**

Practice in development of effective sentences and paragraphs with emphasis on structure, clarity, unity, and development of topic. Review of fundamentals of grammar, punctuation, and spelling in a laboratory setting. Credit for this course is not transferable.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: READ 300 or equivalent

ENGL 302**Fundamentals of Writing II**

Practice in development of full-length themes with emphasis on structure, organization, unity, and development of thesis. Credit for this course is not transferable.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: ENGL 301 or ESOL 301; READ 300

ENGL 1301 Σ **English Composition I**

A concentrated study of the fundamentals of English usage; training in accurate reading and writing of prose, chiefly expository; study of the principles of library research and the techniques of writing research papers. Research required.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: ENGL 302 or equivalent, READ 302 or equivalent

ENGL 1302 $\Omega\Sigma$ **English Composition II**

A study of the principles of effective writing through analysis of selected novels, short stories, poems, and plays. Continued study of methods of library research and of writing research papers. Research required.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: ENGL 1301 (C or better), READ 302 or equivalent

ENGL 2307 Ω **Creative Writing I**

A critical seminar for writers of poetry: narrative or lyric; of fiction: sketches, anecdotes, short stories, novels, and drama; of factual writing: articles, biography, or family history. Creativity, criticism, and revision are emphasized. Analyses of contemporary models and techniques are examined with emphasis on literary qualities.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: ENGL 1302

ENGL 2308 Ω **Creative Writing II**

Same as ENGL 2307 but more advanced.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: ENGL 2307

ENGL 2311 Ω **Technical Writing**

A course designed to develop professional document writing in the technical and business world. A speech component is included. Requirements include an original report of considerable scope and length. Research required.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: ENGL 302 or equivalent, READ 301 or equivalent

ENGL 2315 Ω **Advanced Technical Writing**

A course designed to train students to deal with special communications issues that occur in the corporate environment. Students do a number of case study projects designed to explore technical, communication and political issues that occur in the communication process. Serves as the capstone course for professional writing majors.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: ENGL 2311

ENGL 2322 Ω **English Literature: Beowulf to Romantic**

A direct study of significant masterpieces of English literature from the earliest times to the Romantic Period with particular attention to the main currents of thought and the major writers of Britain.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: ENGL 1302

ENGL 2323 Ω **English Literature: Romantic to Present**

A direct study of significant masterpieces of English literature from the Romantic Period to the present with particular attention to the main currents of thought and the major writers of Britain.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: ENGL 1302

ENGL 2326 Ω **American Literature Survey**

A general study of the significant writers and movements of American literature from its origins to the present.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: ENGL 1302

ENGL 2327 $\Omega\Sigma$ **American Literature to 1860**

A general survey of the major works in American literature from its origins to 1860.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: ENGL 1302

ENGL 2328 $\Omega\Sigma$ **American Literature-1860 to Present**

A general survey of the major works in American literature from 1860 to the present.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: ENGL 1302

ENGL 2331 Ω **Cross-Cultural Literature**

An introduction to literature across cultures. This course focuses on story-telling as a way to learn about peoples from around the world. Authors selected are from North America, Asia, Africa, Latin America, and Europe.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: ENGL 1302

ENGL 2332 Ω**World Literature - Greeks to Renaissance**

A study of the masterpieces of western world literature, from the ancient Greek classics through the early Renaissance.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: ENGL 1302

ENGL 2333 Ω**World Literature-Fifteenth Century to the Present**

A study of the masterpieces of western world literature from Shakespeare through the present.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: ENGL 1302

ENGL 2341 Ω**Forms of Literature**

The study of one or more literary genres including, but not limited to, poetry, fiction, drama, and film.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: ENGL 1302

ENGL 2351 Ω**Mexican-American Literature**

A survey of Mexican-American/Chicano/a literature including fiction, non-fiction, poetry, and drama.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: ENGL 1302

ENGR 1304**Engineering Graphics I**

Engineering graphics is a general course for all types of engineering. Its practical and technical content is essential for engineers, designers and manufacturers. In many other vocations, a knowledge of working drawings and the techniques of engineering drawing are of inestimable value. Students who register for engineering graphics will require a complete set of drafting instruments which meet the approval of the instructor in charge. Care and use of instruments, freehand lettering, geometric construction, orthographic projection, technical sketching, pictorial drawing, dimensioning, solutions to engineering problems, details and assemblies, and blueprinting.

Lecture Hrs = 2, Lab Hrs = 4

Prerequisite: MATH 1414

Pre/Corequisite: READ 302, or equivalent

ENGR 1305**Engineering Graphics II**

Engineering applications of problems relating to points, lines, planes, solids, intersections of planes and solids, development of surfaces, perspectives, auxiliary view, and double curved and warped surfaces.

Lecture Hrs = 2, Lab Hrs = 4

Prerequisite: ENGR 1304

Pre/Corequisite: READ 302 or equivalent

ENGR 2301**Engineering Statics**

Elementary principles of mechanics applied to particles at rest and in motion. Kinematics of particles, resultants of forces, Newton's Laws for a particle work and energy, impulse and momentum principles. Elementary rigid body statics.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: MATH 2413

Pre/Corequisite: PHYS 2425, READ 302 or equivalent

ENGR 2302**Engineering Dynamics**

Extension of the principles of mechanics to rigid bodies at rest and in motion. Kinematics of rigid body motion, extension of Newton's Law to translation, rotation, plane motion of rigid bodies. Equilibrium and motion of bodies affected by friction. Work-energy and impulse-momentum for rigid bodies.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: ENGR 2301

Pre/Corequisite: READ 302, ESOL 312, or equivalent

ENGT 2307**Engineering Materials I for Engineering Technology**

Instruction in the making and forming of steel and the classification of steel, cast iron, and aluminum. Topics include mechanical and physical properties, non-destructive testing principles of alloying, selection of metals, iron carbon diagrams, principles of hardening and tempering steel, and the metallurgical aspects of machining. Topics will also include an overview of properties and uses of polymers and ceramics.

Lecture Hrs = 3, Lab Hrs = 1

Pre/Corequisite: READ 301, ESOL 311, or equivalent

ENGT 2310**Introduction to Manufacturing Processes**

Exploration of a variety of methods used in manufacturing. Theory and application of processes including but not limited to metal forming, welding, machining, heat treating, plating, assembly procedures, process controls considerations, casting and injection molding.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: READ 301, ESOL 311, or equivalent

ENTC 1191**Special Topics in Engineering Technology, General**

Topics address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course was designed to be repeated multiple times to improve student proficiency.

Lecture Hrs = 1, Lab Hrs = 1

Pre/Corequisite: READ 301, ESOL 311, or equivalent

ENTC 1343**Statics**

A study of the composition and resolution of forces and the equilibrium of forces acting on structures. Includes the concepts of friction, moments, couples, centroids, and moment of inertia.

Lecture Hrs = 3, Lab Hrs = 1

Prerequisite: TECM 1349 or MATH 1414 or above; READ 301, ESOL 311, or equivalent

ENVR 1401 Ω**Environmental Science**

A general study of ecological concepts; an introduction to chemical and biological principles that relate to ecology; an introduction to resources including animal, plant, energy, water, soil and air. A study of pollution problems and solutions. Laboratory exercises include soil testing, air and water quality measurements, field sampling techniques, and related nature studies. Optional field trips.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: READ 302, ESOL 312, or equivalent

Pre/Corequisite: MATH 310

EPCT 1349**Environmental Regulation Interpretation and Applications**

An in-depth study of the major federal and state environmental regulations.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 300 or ESOL 310 or equivalent

ESOL 300**Listening/Speaking I**

Develops listening and speaking skills in speakers of languages other than English and prepares them to function in an English-speaking society.

Placement by test or advisement.

Lecture Hrs = 3, Lab Hrs = 0

ESOL 301**Listening/Speaking II**

Develops listening and speaking skills in speakers of languages other than English and prepares them to function in an English-speaking society.

Lecture Hrs = 3, Lab Hrs = 0

ESOL 302**Listening/Speaking III**

Develops listening and speaking skills in speakers of languages other than English and prepares them to function in an English-speaking society.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: READ 300 or equivalent

ESOL 310**Reading/Vocabulary I**

Develops reading fluency and vocabulary in speakers of languages other than English and prepares them to function in an English-speaking society. Placement by test or advisement.

Lecture Hrs = 3, Lab Hrs = 0

ESOL 311**Reading/Vocabulary II**

Develops reading fluency and vocabulary in speakers of languages other than English and prepares them to function in an English-speaking society.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 300 or ESOL 310 or equivalent

ESOL 312**Reading/Vocabulary III**

Develops reading fluency and vocabulary in speakers of languages other than English and prepares them to function in an English-speaking society.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 301 or ESOL 311 or equivalent

ESOL 320**Grammar/Writing I**

Develops writing skills, including standard English usage, organization of ideas, and application of grammar, in speakers of languages other than English and prepares them to function in an English-speaking society.

Placement by test or advisement.

Lecture Hrs = 3, Lab Hrs = 0

ESOL 321**Grammar/Writing II**

Develops writing skills, including standard English usage, organization of ideas, and application of grammar, in speakers of languages other than English and prepares them to function in an English-speaking society.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: READ 300 or equivalent

ESOL 322**Grammar/Writing III**

Develops writing skills, including standard English usage, organization of ideas, and application of grammar, in speakers of languages other than English and prepares them to function in an English-speaking society.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: READ 300 or equivalent

ESOL 330**English for Specific Purposes**

Principles and techniques of composition and reading for non-native speakers of English.

Placement by test or advisement.

Lecture Hrs = 3, Lab Hrs = 0

GAME 1212**Game Theory**

Game and simulation design. Application of design theories to production-based projects from the conceptual stage to a completed project.

Lecture Hrs = 2, Lab Hrs = 1

Prerequisite: READ 301 or ESOL 311 or equivalent

GAME 1301**Computer Ethics**

A study of ethical issues that apply to computer related professions, intellectual property and privacy issues, professional responsibility, and the effects of globalization. Emphasizes the practical application of computer ethics through case studies and current events in the game and simulation industry.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 301 or ESOL 311 or equivalent

GAME 1302**Storyboarding**

In-depth coverage of storyboarding for the development of games and simulations. Addresses pre-production preparation and creation of comprehensive design for a game or simulation including target audience analysis, purpose, goals and objectives, content outline, flow chart, and storyboard.

Lecture Hrs = 3, Lab Hrs = 1

Prerequisite: READ 301 or ESOL 311 or equivalent

GAME 1304**Level Design**

Introduction to the tools and concepts used to create levels for games and simulations. Incorporates level design, architecture theory, concepts of critical path and flow, balancing, play testing, and storytelling. Includes utilization of toolsets from industry titles.

Lecture Hrs = 3, Lab Hrs = 1

Prerequisite: READ 301 or ESOL 311 or equivalent

GAME 1306**Design and Creation of Games**

Introduction to game and simulation development. Includes analysis of existing applications and creation of a game using an existing game engine. In-depth coverage of the essential elements of game design. Also covers an overview of cultural history of electronic games, survey of the major innovators, and examination of the trends and taboos that motivate game design.

Lecture Hrs = 3, Lab Hrs = 1

Prerequisite: READ 301 or ESOL 311 or equivalent

GAME 2332**Project Development I**

Skill development in an original modification based on a current game engine. Includes management of version control; development of project timeliness; integration of sound, models, and animation; production of demos; and creation of original levels, characters, and content for a real-time multiplayer game. Applies skills learned in previous classes in a simulated real-world design team experience.

Lecture Hrs = 3, Lab Hrs = 1

Prerequisite: GAME 1212, GAME 1302, and GAME 1306

GAME 2338**Game Testing**

Testing and debugging gaming and simulation applications in the alpha and beta stages of production. Includes critiques of the product and written documentation of the testing and debugging processes.

Lecture Hrs = 3, Lab Hrs = 1

Prerequisite: READ 301, ESOL 311, or equivalent

Pre/Corequisite: GAME 2332

GAME 2459**Game and Simulation Group Project**

Creation of a game and/or simulation project utilizing a team approach. Includes animation, titles, visualization of research results, modeling with polygon frames, curves and surfaces, 3D text and animation with keyframes, paths (objects and curves), morphing, vertex keys, skeletons, and lattices.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: GAME 2338

GEOG 1300**Introduction to College Geography**

The world and its climate regions, its resources, and man's use of the earth and its resources.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: READ 301 or equivalent

GEOG 1303**World Regional Geography**

A study of major developed and developing regions with emphasis on the awareness of prevailing world conditions and developments, including emerging conditions and trends, and the awareness of diversity of ideas and practices to be found in those regions. Course content may include one or more regions.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 301 or equivalent, ENGL 301 or equivalent

GEOG 1301**Earth Science**

Survey of physical sciences with emphasis on the earth's ecological and geological processes. Note: Students are advised to complete their science requirements before attempting this course.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 301 or ESOL 311 or equivalent

GEOG 1403**Physical Geology**

Earth forms, structures, materials and processes which have formed them. An introduction to minerals, rocks and topographic maps. Optional field trips.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: READ 302, ESOL 312, or equivalent

GEOG 1404**Historical Geology**

A history of the earth and the development of its life forms and land forms throughout geologic time. Introduction to fossils and geologic maps. Optional field trips.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: READ 302, ESOL 312, or equivalent

GEOG 1405**Environmental Geology**

Environmental geology is an introductory survey to some of the various processes that help to shape our earth, the resources that come from it, and the problems that arise from their use. Lab studies will investigate such problems as flooding, faulting, subsidence, landfills, and other pertinent land use issues. Optional field trips.

Lecture Hrs = 3, Lab Hrs = 3

Pre/Corequisite: READ 302, ESOL 312 or equivalent

GISC 1301**Cartography and Geography in Geographical Information Systems (GIS) and Global Positioning Systems**

Introduction to the principles of cartography and geography. Emphasis on global reference systems and the use of satellites for measurements and navigation.

Lecture Hrs = 2, Lab Hrs = 2

Pre/Corequisite: GISC 1311 and READ 301 or equivalent

GISC 1311**Introduction to Geographic Information Systems (GIS)**

Introduction to basic concepts of vector GIS using several industry specific software programs including nomenclature of cartography and geography.

Lecture Hrs = 2, Lab Hrs = 2

Pre/Corequisite: READ 301, ESOL 311, or equivalent

GISC 1321**Introduction to Raster-Based Geographic Information Systems (GIS)**

Instruction in GIS data sets including raster-based information such as images or photographs, acquisition of such data, and processing and merging with vector data.

Lecture Hrs = 2, Lab Hrs = 2

Pre/Corequisite: GISC 1311 and READ 301 or equivalent

GISC 1391**Special Topics in Cartography**

Topics address recently identified current events, skills, knowledges, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course was designed to be repeated multiple times to improve student proficiency.

Lecture Hrs = 2, Lab Hrs = 2

Pre/Corequisite: READ 301, ESOL 311, or equivalent

GISC 2301**Data Acquisition and Analysis in Geographic Information Systems (GIS)**

Study of the management of geographic information, system life cycles, and costs and benefits. Includes institutional issues such as data providers, data management, combination of attribute and graphical data, information storage and access, Texas and national standards for spatial data; and applications of GIS for data modeling and analysis.

Lecture Hrs = 2, Lab Hrs = 2

Pre/Corequisite: GISC 1301 and READ 301, ESOL 311, or equivalent

GISC 2303**Fundamentals of Logistics with Geographic Information Systems (GIS)**

Multiple data sources and their location-based relationships. Incorporates exposure to modes of transportation, resources, and product distribution and the combination of these elements with time, distance, and GPS technology for support of GIS analysis as relating to logistics.

Lecture Hrs = 2, Lab Hrs = 2

Pre/Corequisite: GISC 1306 and READ 301, ESOL 311, or equivalent

GISC 2359**Web-Served Geographic Information Systems (GIS)**

Delivery of geographic data via the Internet. Includes composition of the map features distributed and introduction on the use of markup languages to customize web-based Geographic Information Systems (GIS).

Lecture Hrs = 2, Lab Hrs = 2

Pre/Corequisite: READ 301, ESOL 311, or equivalent

GISC 2380**Cooperative Education - Cartography**

Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component.

Instructor Permission Required.

Lecture Hrs = 1, Lab Hrs = 0, External Hrs = 15

Pre/Corequisite: READ 301, ESOL 311, or equivalent

GISC 2402**Geographic Information Systems (GIS) Design with Raster Analysis**

Raster/remote sensing principles, technologies, and applications. Emphasizes processing raster imagery into useful information to be used in a GIS. Includes geo-referencing and image classification. Student final project will be demonstrating raster and remote sensing techniques.

Lecture Hrs = 3, Lab Hrs = 2

Pre/Corequisite: READ 301, ESOL 311, or equivalent

GISC 2440**Logistics Data Acquisition and Analysis**

Management of geospatial information, system life cycles, and costs and benefits. Includes demographic management and institutional issues such as data providers, data management, combination of attribute and graphical data, information and storage and access, and state and national standards for spatial data. Also covers applications of geospatial modeling, logistics, and analysis. Emphasizes use of industry standard software for database design, table relationships, data collection (GPS--Import--Table Input), inputting forms, and project management/troubleshooting.

Lecture Hrs = 3, Lab Hrs = 2

Pre/Corequisite: GISC 2402 and READ 301, ESOL 311, or equivalent

GOVT 2301 Ω**American Government I**

Theory and forms of government, political socialization, United States and Texas constitutions, federalism, civil rights and civil liberties, and political parties and elections. This course will fulfill Texas teacher certification requirements in government for individuals with out-of-state degrees.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: ENGL 301 or equivalent, READ 302 or equivalent

GOVT 2302 Ω**American Government II**

United States and Texas executive, legislative, and judicial branches, governmental finance, foreign policy, and county and municipal government.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: ENGL 301 or equivalent, READ 302 or equivalent

HIST 1301 ΩΣ**History of the United States to 1877**

The political, economic, social, and intellectual history of the United States from the discovery of America to 1877. A research component is required for honors credit.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: ENGL 301 or equivalent, READ 302 or equivalent

HIST 1302 ΩΣ**History of the United States Since 1877**

The political, economic, social, and intellectual history of the United States from 1877 to the present day. A research component is required for honors credit.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: ENGL 301 or equivalent, READ 302 or equivalent

HIST 2301 Ω**History of Texas**

Texas history from colonization to the present day with attention given to political, social, economic, and intellectual history. Designed for any students interested in local history, the course is particularly recommended for prospective teachers in the public schools of Texas. (Based on House Bill 935, this can be substituted for an American history course.) A research component is required for honors credit.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: ENGL 301 or equivalent, READ 302 or equivalent

HIST 2321 Ω**History of World Civilizations to 1500**

A comparative historical study of Europe, Asia, Africa, the Americas, and Australia to 1500. A research component is required for honors credit.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: ENGL 301 or equivalent, READ 302 or equivalent

HIST 2322 Ω**History of World Civilizations from 1500 to Present**

A comparative historical study of Europe, Asia, Africa, the Americas, and Australia from 1500 to the present. A research component is required for honors credit.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: ENGL 301 or equivalent, READ 302 or equivalent

HITT 1261**Clinical - Health Information/Medical Records Technology/Technician**

A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional.

Lecture Hrs = 0, Lab Hrs = 0, Clinical Hrs = 10

Prerequisite: READ 302 or equivalent

Pre/corequisite: HITT 1373

HITT 1301**Health Data Content and Structure**

Introduction to systems and processes for collecting, maintaining, and disseminating primary and secondary health related information. Instruction in delivery and organizational structure to include content of health record, documentation requirements, registries, indices, licensing, regulatory agencies, forms, and screens.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 300 or ESOL 310 or equivalent

HITT 1305**Medical Terminology I**

Study of word origin and structure through the introduction of prefixes, suffixes, root words, plurals, abbreviations and symbols, surgical procedures, medical specialties, and diagnostic procedures.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 301 or ESOL 311 or equivalent

HITT 1341**Coding and Classification Systems**

Application of basic coding rules, principles, guidelines, and conventions.

Lecture Hrs = 2, Lab Hrs = 2

Prerequisite: HITT 1305, READ 301 or equivalent

HITT 1345**Health Care Delivery Systems**

Introduction to organization, financing, and delivery of health care services, accreditation, licensure, and regulatory agencies.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 300 or ESOL 310 or equivalent

HITT 1349**Pharmacology**

Overview of the basic concepts of the pharmacological treatment of various diseases affecting major body systems.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 301 or equivalent

Pre/Corequisite: HITT 1305

HITT 1353**Legal and Ethical Aspects of Health Information**

Concepts of confidentiality, ethics, health care legislation, and regulations relating to the maintenance and use of health information.

Lecture Hrs = 3, Lab Hrs = 0,

Prerequisite: READ 300 or ESOL 310 or equivalent

HITT 1355**Health Care Statistics**

General principles of health care statistics with emphasis in hospital statistics. Skill development in computation and calculation of health data.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: MATH 310 or equivalent, READ 300 or equivalent

HITT 1372**Cancer Data Management I**

This course, an introduction to Cancer Data Management, includes cancer program requirements, the American College of Surgeons Cancer Program survey process and data collection/retrieval - abstracting, coding, staging and reporting.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: HITT 1301, 1305, ITSC 1309, BIOL 2401, and READ 302 or equivalent

HITT 1373**Cancer Data Management II**

This class is a continuation of HITT 1372. The student will gain hands-on experience in the application of cancer registry data.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: HITT 1372 and READ 302 or equivalent

HITT 2160**Clinical-Health Information/Medical Records Technology/Technician**

A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional.

Lecture Hrs = 0, Lab Hrs = 0, External Lab = 6,

Insurance Fee

Prerequisite: HITT 1301, HITT 1341, HITT 1345, MRMT 1307, READ 300 or equivalent

HITT 2161**Clinical-Health Information/Medical Records Technology/Technician**

A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional.

Lecture Hrs = 0, Lab Hrs = 0, External Lab Hrs = 6,

Insurance Fee

Prerequisite: READ 300 or equivalent

Pre/Corequisite: HITT 2335

HITT 2260**Clinical-Health Information/Medical Records Technology/Technician**

A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional.

Lecture Hrs = 0, Lab Hrs = 0, External Lab = 8,

Insurance Fee

Prerequisite: HITT 2160, READ 300 or equivalent

Pre/Corequisite: HITT 1353, HITT 1355

HITT 2261**Clinical - Health Information/Medical Records Technology/Technician**

A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional.

Lecture Hrs = 0, Lab Hrs = 0, External Lab = 8,

Insurance Fee

Prerequisite: HITT 2260, READ 300 or equivalent

Pre/Corequisite: HITT 2343

HITT 2335**Coding and Reimbursement Methodologies**

Development of advanced coding techniques with emphasis on case studies, health records, and federal regulations regarding prospective payment systems and methods of reimbursement.

Lecture Hrs = 2, Lab Hrs = 2

Prerequisite: HITT 1341, READ 300 or equivalent

HITT 2339**Health Information Organization and Supervision**

Principles of organization and supervision of human, fiscal, and capital resources.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 300 or ESOL 310 or equivalent

HITT 2343**Quality Assessment and Performance Improvement**

Study of the many facets of quality standards and methodologies in the health information management environment. Topics include licensing, accreditation, compilation and presentation of data in statistical formats, quality improvement functions, quality tools, utilization management, risk management, and medical staff data quality issues.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 300 or ESOL 310 or equivalent

HRPO 1311**Human Relations**

Practical application of the principles and concepts of the behavioral sciences to interpersonal relationships in the business and industrial environment.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 301 or ESOL 311 or equivalent

HRPO 2301**Human Resources Management**

Behavioral and legal approaches to the management of human resources in organizations.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 301, ESOL 311, or equivalent

HUMA 1301 ΩΣ**Introduction to the Humanities I**

A multicultural, interdisciplinary introduction to the study of humankind's cultural legacy in at least four of the disciplines of the humanities, which are approached individually, in synthesis with one or more of the others, or thematically: the visual arts, motion pictures, architecture, music, dance, philosophy, and literature as well as the social sciences, history, mathematics, medicine, physical sciences and communication as they have contributed to that cultural legacy.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 301 or equivalent, ENGL 302 or equivalent

HUMA 1302 ΩΣ**Introduction to the Humanities II**

Honors only. A historical overview of humankind's cultural legacy in at least four of the disciplines of the humanities, which are approached individually, in synthesis with one or more of the others, or thematically: the visual arts, motion pictures, architecture, music, dance, philosophy, and literature as well as the social sciences, history, mathematics, medicine, and the physical sciences as they have contributed to that cultural legacy.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 301 or equivalent, ENGL 302 or equivalent

HUMA 1305**Introduction to Mexican-American Studies**

Introduction to the field of Mexican-American/Chicano/a Studies from its inception to the present. Interdisciplinary survey designed to introduce students to the salient cultural, economic, educational, historical, political, and social aspects of the Mexican-American/Chicano/a experience.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 302 or equivalent and ENGL 302 or equivalent

HUMA 1311**Mexican-American Fine Arts Appreciation**

An examination of Mexican-American/Chicano/a artistic expressions in the visual and performing arts.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 302 or equivalent and ENGL 302 or equivalent

HUMA 1315**Fine Arts Appreciation**

Understanding purposes and processes in the visual and musical arts including evaluation of selected works.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 302 or equivalent and ENGL 302 or equivalent

HYDR 1345**Hydraulics and Pneumatics**

Fundamentals of hydraulics and types of hydraulic pumps, cylinders, valves, motors, and related systems including operations, maintenance, and system analysis.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 300 or ESOL 310 or equivalent

IBUS 1305**Introduction to International Business and Trade**

The techniques for entering the international marketplace. Emphasis on the impact and dynamics of sociocultural, demographic, economic, technological, and political-legal factors in the foreign trade environment. Topics include patterns of world trade, internationalization of the firm, and operating procedures of the multinational enterprise.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 301 or ESOL 311 or equivalent

IMED 1316**Web Page Design I**

Instruction in web page design and related graphic design issues, including mark-up languages, web sites, and browsers.

Lecture Hrs = 3, Lab Hrs = 1

Prerequisite: READ 301 or ESOL 311 or equivalent

IMED 1445**Interactive Multimedia I**

Exploration of the use of graphics and sound to create interactive multimedia applications and/or animations using industry standard authoring software.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: ARTC 1453, READ 301 or equivalent

Pre/Corequisite: ARTC 2440

IMED 2309**Internet Commerce**

An overview of the Internet as a marketing and sales tool with emphasis on developing a prototype for electronic commerce. Topics include dynamic data, integration, and creating web sites in order to collect information, performing on-line transactions.

Lecture Hrs = 3, Lab Hrs = 1

Pre/Corequisite: READ 301 or equivalent and MRKG 1311

IMED 2311**Portfolio Development**

Preparation and enhancement of portfolio to meet professional standards, development of presentation skills, and improvement of job-seeking techniques.

Lecture Hrs = 3, Lab Hrs = 1

Pre/Corequisite: ARTC 1413, 1453, 2440, and READ 301 or ESOL 311 or equivalent

IMED 2315**Web Page Design II**

A study of mark-up language advanced layout techniques for creating web pages. Emphasis on identifying the target audience and providing web sites according to accessibility standards, cultural appearance, and legal issues.

Lecture Hrs = 3, Lab Hrs = 1

Pre/Corequisite: IMED 1316

INEW 2334**Advanced Web Page Programming**

Advanced applications for Web authoring. Topics may include Perl Scripts, Common Gateway Interface (CGI), Database Interaction, Active Server Pages, Java Applets, Javascrpts, tables, HTML, and/or interactive elements.

Lecture Hrs = 2, Lab Hrs = 2

Prerequisite: ITSE 2302, READ 301 or equivalent

INMT 1371**Intro to Digital Manufacturing**

The purpose of this course is to give the student an introduction to various digital manufacturing methods including 3D printing technologies. Also included is a survey in advanced manufacturing technologies including metals, ceramics, and plastics through subtractive and additive processes.

Lecture Hrs = 3, Lab

Hrs = 0

Prerequisite: READ 301, ESOL 311, or equivalent

INMT 2488**Internship - Manufacturing Technology/Technician**

A work-based learning experience that enables the student to apply specialized occupational theory, skills and concepts. A learning plan is developed by the college and the employer.

Lecture Hrs = 0, Lab Hrs = 0, External Hrs = 24

Pre/Corequisite: DFTG 2419 and READ 301, ESOL 311, or equivalent

INTC 1305**Introduction to Electronic Instrumentation**

A survey of the instrumentation field and the professional requirements of the instrumentation technician, including an introduction to computer and calculator applications involved in basic electronic circuit analysis. Safety applications and fundamental math applications are included.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 300 or ESOL 310 or equivalent

INTC 1312**Introduction to Instrumentation and Safety Technology**

An overview of industries employing instrument technicians. Course also covers instrument safety techniques and practices as applied to the instrumentation field.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 300 or ESOL 310 or equivalent

INTC 1343**Application of Industrial Automatic Control**

A study of automatic process control including measuring devices, analog and digital instrumentation, signal transmitters, recorders, alarms, controllers, control valves, and process and instrument drawings. Includes connection and troubleshooting of loops. The study begins with ISA, electrical, and process symbology. Course addresses the engineering package which may include such documents as P&IDs, loop diagrams, sketches, spec sheets, bills of materials, and simplified flow diagrams. The course includes basic sketching techniques.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: INTC 1456, READ 300 or equivalent

INTC 1355**Unit Operations**

An in-depth study of industrial processes including fluid flow and material transport, distillation, extraction, and automatic control requirements of these processes. Instruction in control system design and control loop adjustments and analysis.

Lecture Hrs = 2, Lab Hrs = 2

Prerequisite: READ 300 or ESOL 310 or equivalent

INTC 1425**Instrument Hardware Installation I**

Introduces installation of instrument to the accepted methods for the mounting instrumentation equipment. Also addressed are aspects of introducing a piece of instrumentation equipment into the process environment.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: READ 300 or ESOL 310 or equivalent

INTC 1441**Principles of Automatic Control**

A study of the theory of basic measurements, automatic control systems and design, closed loop systems, recorders, controllers, feedback, control modes and control configurations.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: INTC 1456 and READ 300 or equivalent

INTC 1448**Analytical Instrumentation**

A study of analytical instruments emphasizing their utilization in process applications including chromatography, pH, conductivity, and spectrophotometry instruments.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: READ 300 or ESOL 310 or equivalent

INTC 1456**Instrumentation Calibration**

A study of techniques for calibrating electronic and pneumatic transmitters, controllers, recorders, valves, and valve positioners including tear down, assembly, alignment, and calibration of equipment.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: READ 300 or ESOL 310 or equivalent

INTC 2380**Cooperative Education - Instrumentation Technology/Technician**

Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component.

Lecture Hrs = 1, Lab Hrs = 0, Internal = 19

Prerequisite: INTC 1441 and READ 300 or equivalent

INTC 2405**Instrument Hardware Installation II**

A continuation of Hardware Instrumentation I. Students will improve instrumentation skills in tubing and piping, measuring, layout, welding, and testing. Also covers instrumentation wiring, circuitry, heat tracing, chemical treatment and craft related trigonometry.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: READ 300 or ESOL 310 or equivalent

INTC 2436**Distributed Control and Programmable Logic**

An overview of distributed control systems including configuration of programmable logic controllers, smart transmitters, and field communicators. Functions of digital systems in a process control environment. This course offers a deeper understanding of current automatic control applications in industry. The course takes a holistic approach to understanding the role of instrumentation in the process industry. The student integrates typical processing equipment and applied instrumentation for that equipment. Studies include advanced control concepts, computer control schemes, programmable logic control applications, and advanced troubleshooting techniques. The lab offers the student hands-on application opportunities relating to the topics above.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: INTC 1441, READ 300 or equivalent

INTC 2445**Advanced Analyzers**

An in depth study of composition analyzers and their sample systems. Analyzers covered will include chromatographs, mass spectrometers, in-line and continuous emissions lab and portable types.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: INTC 1448 and READ 300 or equivalent

INTC 2450**Fieldbus Process Control Systems**

A comprehensive view into the field of instrument technicians with regards to fieldbus systems. Fieldbus equipment and systems with the theory, applications and hands-on experiences preparing the student for the installation and maintenance of this apparatus will be introduced.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: INTC 1441, READ 300 or equivalent

ITCC 1401**Exploration - Network Fundamentals**

A course introducing the architecture, structure, functions, components, and models of the internet. Describes the use of OSI and TCP layered models to examine the nature and roles of protocols and services at the applications, network, data link, and physical layers. Covers the principles and structure of IP addressing and the fundamentals of Ethernet concepts, media, and operations. Build simple LAN topologies by applying basic principles of cabling; perform basic configurations of network devices, including routers and switches; and implementing IP addressing schemes.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: READ 300 or ESOL 310 or equivalent

ITCC 1404**Cisco Exploration 2 - Routing Protocols and Concepts**

This course describes the architecture, components, and operation of routers, and explains the principles of routing and routing protocols. Students analyze, configure, verify, and troubleshoot the primary routing protocols RIPv1, RIPv2, EIGRP, and OSPF. Recognize and correct common routing issues and problems. Model and analyze routing processes.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: ITCC 1401 and READ 300, ESOL 310, or equivalent

ITCC 2408**Cisco Exploration 3 - LAN Switching and Wireless**

This course helps students develop an in-depth understanding of how switches operate and are implemented in the LAN environment for small and large networks. Detailed explanations of LAN switch operations, VLAN implementation, Rapid Spanning Tree Protocol (RSTP), VLAN Trunking Protocol (VTP), Inter-VLAN routing, and wireless network operations. Analyze, configure, verify, and troubleshoot VLANs, RSTP, VTP, and wireless networks. Campus network design and Layer 3 switching concepts are introduced.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: ITCC 1401 and READ 300, ESOL 310, or equivalent

ITCC 2410**Cisco Exploration 4 - Accessing the WAN**

This course explains the principles of traffic control and access control lists (ACLs) and provides an overview of the services and protocols at the data link layer for wide-area access. Describes user access technologies and devices and discover how to implement and configure Point-to-Point Protocol (PPP), Point-to-Point Protocol over Ethernet (PPPoE), DSL, and Frame Relay. WAN security concepts, tunneling, and VPN basics are introduced. Discuss the special network services required by converged applications and an introduction to quality of service (QoS).

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: READ 300, ESOL 310, or equivalent

Pre/Corequisite: ITCC 1404

ITNW 1445**Implementing Network Directory Services**

Provides students with the knowledge and skills necessary to install, configure, and administer Network Directory service.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: CPMT 1449, READ 300 or equivalent

ITSC 1309**Integrated Software Applications I**

Integration of applications from popular business productivity software suites. Instruction in embedding data, linking and combining documents using word processing, spreadsheets, databases, and/or presentation media software.

Lecture Hrs = 3, Lab Hrs = 1

Pre/Corequisite: READ 301 or equivalent

ITSC 1364**Practicum (or Field Experience) Computer and Information Sciences**

Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student.

Lecture Hrs = 0, Lab Hrs = 0, External Hrs = 21

Prerequisite: 12 or more SCH of Coursework in COSC, CPMT, ITSC, ITCC, ITSE, and/or ITSW courses, READ 301 or equivalent

ITSC 2321**Integrated Software Applications II**

Continued study of computer applications from business productivity software suites. Instruction in embedding data and linking and combining documents using word processing, spreadsheets, databases, and/or presentation media software.

Lecture Hrs = 3, Lab Hrs = 1

Prerequisite: ITSC 1309 and READ 301 or equivalent

ITSC 2335**Application Software Problem Solving**

Utilization of appropriate application software to solve advanced problems and generate customized solutions.

Lecture Hrs = 3, Lab Hrs = 1

Prerequisite: ITSC 2321 and COSC 1436 or ITSE 1331 and READ 301 or equivalent.

ITSC 2339**Personal Computer Help Desk Support**

Diagnosis and solution of user hardware and software related problems with on-the-job and/or simulated projects.

Lecture Hrs = 3, Lab Hrs = 1

Prerequisite: ITSC 2321 and COSC 1436 or ITSE 1331 and READ 301 or equivalent.

ITSE 1331**Introduction to Visual BASIC Programming**

Introduction to computer programming using Visual BASIC. Emphasis on the fundamentals of structured design, development, testing, implementation, and documentation. Includes language syntax, data and file structures, input-output devices, and files.

Lecture Hrs = 2, Lab Hrs = 2

Prerequisite: READ 301 or ESOL 311 or equivalent

ITSE 1350**System Analysis and Design**

Comprehensive introduction to the planning, design, and construction of computer information systems using the systems development life cycle and other appropriate design tools.

Lecture Hrs = 2, Lab Hrs = 2

Prerequisite: Any Programming Course (COSC 1436, COSC 1437, ITSE 1310, ITSE 1331, ITSE 2317, ITSE 2349, and/or ITSE 2359), READ 301 or equivalent

ITSE 2302**Intermediate Web Programming**

Intermediate applications for web authoring. Topics may include server side include (SSI), Perl, HTML, Java applets, Javascript, and/or ASP.

Lecture Hrs = 2, Lab Hrs = 2

Prerequisite: ITNW 1337, READ 301 or equivalent

ITSE 2309**Database Programming**

Database development using database programming techniques emphasizing database structures, modeling, and database access.

Lecture Hrs = 2, Lab Hrs = 2

Prerequisite: ITSC 1309 or COSC 1301, READ 301 or equivalent

ITSW 2337**Advanced Database**

Designed to provide an understanding of advanced functionality of databases.

Lecture Hrs = 3, Lab Hrs = 1

Pre/Corequisite: READ 301 or equivalent and ITSC 2321

KINE 1101**Bowling, Beginning**

A course designed to learn the rules, scoring and fundamental techniques for bowling. An emphasis will be placed on proper execution and selection of equipment.

Lecture Hrs = 1, Lab Hrs = 2, Materials Fee

Pre/Corequisite: READ 300 or equivalent

KINE 1102**Bowling, Experienced**

A course designed to learn techniques for experienced individuals. Emphasis will be placed on proper and additional techniques with regard to strategy.

Lecture Hrs = 1, Lab Hrs = 2, Materials Fee

Prerequisite: KINE 1101

Pre/Corequisite: READ 300 or equivalent

KINE 1103**Exercise, Beginning**

A course designed to study and apply the components of muscular strength and endurance, flexibility, body composition and cardiovascular endurance into a personal designed program of exercise. A prescribed program will be designed for students following pre-fitness assessment.

Lecture Hrs = 1, Lab Hrs = 2

Pre/Corequisite: READ 300 or equivalent

KINE 1104**Exercise, Experienced**

A course designed to study and apply various programs of exercise such as circuit training, weight training, super circuit training and other prescribed programs for experienced individuals.

Lecture Hrs = 1, Lab Hrs = 2

Prerequisite: KINE 1103

Pre/Corequisite: READ 300 or equivalent

KINE 1105**Golf, Beginning**

A course designed to learn rules, scoring, etiquette, and fundamental techniques for golf. An emphasis will be placed on proper execution of all skills for golf using woods, irons, and putter.

Lecture Hrs = 1, Lab Hrs = 2

Pre/Corequisite: READ 300 or equivalent

KINE 1106**Golf, Experienced**

A course designed to learn rules, scoring, etiquette, and fundamental techniques for golf. An emphasis will be placed on proper execution of all skills for golf using woods, irons, and putter.

Lecture Hrs = 1, Lab Hrs = 2

Prerequisite: KINE 1105

Pre/Corequisite: READ 300 or equivalent

KINE 1107**Cycling, Beginning**

A course designed to develop cardiovascular fitness through stationary cycling (spinning). Some emphasis will be on setting up the bicycle, correct technique, nutrition, and hydration.

Lecture Hrs = 1, Lab Hrs = 2

Pre/Corequisite: READ 300 or equivalent

KINE 1108**Cycling, Experienced**

A course designed to further improve cardiovascular fitness, strengthen the lower body and increase flexibility. Emphasis will remain on correct cycling techniques, nutrition, and hydration strategies.

Lecture Hrs = 1, Lab Hrs = 2

Prerequisite: KINE 1107

Pre/Corequisite: READ 300 or equivalent

KINE 1109**Pilates, Beginning**

A course designed to strengthen, lengthen, and tone the body without machines.

Lecture Hrs = 1, Lab Hrs = 2

Pre/Corequisite: READ 300 or equivalent

KINE 1110**Pilates, Experienced**

A course designed to strengthen, lengthen, and tone the body with an emphasis on students' progressing to intermediate and advanced levels.

Lecture Hrs = 1, Lab Hrs = 2

Prerequisite: KINE 1109

Pre/Corequisite: READ 300 or equivalent

KINE 1111**Aerobic Components, Beginning**

A course designed to develop cardiovascular fitness through aerobic exercise. This course will consist of regular aerobics, step aerobics, and cardio kick-boxing. Correct technique, nutrition, and hydration will be emphasized.

Lecture Hrs = 1, Lab Hrs = 2

Pre/Corequisite: READ 300 or equivalent

KINE 1112**Aerobic Components, Experienced**

A course designed to further improve cardiovascular fitness through aerobic exercise. The course will consist of regular aerobics, step aerobics, and cardio kick boxing. Correct techniques, nutrition, and hydration will be emphasized.

Lecture Hrs = 1, Lab Hrs = 2

Prerequisite: KINE 1111

Pre/Corequisite: READ 300 or equivalent

KINE 1113**Racquetball, Beginning**

A course designed to learn rules, fundamental techniques and strategies for racquetball. Emphasis will be placed on proper techniques for singles and double play.

Lecture Hrs = 1, Lab Hrs = 2

Pre/Corequisite: READ 300 or equivalent

KINE 1114**Racquetball, Experienced**

A course designed to learn rules and techniques for the experienced students. An emphasis will be placed on skill development, strategy, and advance shot selection.

Lecture Hrs = 1, Lab Hrs = 2

Prerequisite: KINE 1113

Pre/Corequisite: READ 300 or equivalent

KINE 1115**Swimming, Beginning**

A course designed to learn the skills for the crawl, back crawl, breaststroke, elementary backstroke, and sidestroke. Emphasis will be given to proper technique and proper breathing skills.

Lecture Hrs = 1, Lab Hrs = 2

Pre/Corequisite: READ 300 or equivalent

KINE 1116**Swimming, Experienced**

A course designed to review the skills for the five basic strokes. Attention will be given to competency in execution of the five basic strokes. Endurance will also be emphasized.

Lecture Hrs = 1, Lab Hrs = 2

Prerequisite: KINE 1115

Pre/Corequisite: READ 300 or equivalent

KINE 1117**Tennis, Beginning**

A course designed to learn the fundamental techniques of tennis. Emphasis will be given to the skills of forehand, backhand, overhead, serve, and volley. Rules, etiquette, and strategy for single and doubles play will be addressed.

Lecture Hrs = 1, Lab Hrs = 2

Pre/Corequisite: READ 300 or equivalent

KINE 1118**Tennis, Experienced**

A course designed to review the skills for tennis. Rules will be reviewed and attention to style of play and strategy will be addressed for both singles and doubles play.

Lecture Hrs = 1, Lab Hrs = 2

Prerequisite: KINE 1117

Pre/Corequisite: READ 300 or equivalent

KINE 1119**Volleyball, Beginning**

A course designed to learn the fundamental skills for volleyball such as serving, overhead pass, forearm pass, attacking, blocking and floor defense. Team offensive and defensive systems will be discussed. Rules and proper equipment will be addressed.

Lecture Hrs = 1, Lab Hrs = 2

Pre/Corequisite: READ 300 or equivalent

KINE 1120**Volleyball, Experienced**

A course designed to review the fundamental skills for volleyball. Team offensive and defensive systems will be emphasized especially in regard to speed of play and set selection. Rules will be addressed.

Lecture Hrs = 1, Lab Hrs = 2

Prerequisite: KINE 1119

Pre/Corequisite: READ 300 or equivalent

KINE 1121**Water Aerobics, Beginning**

A course designed to learn the basic skills for exercise in the water. Emphasis will be placed on various exercise routines in the water that incorporate strength, endurance and flexibility.

Lecture Hrs = 1, Lab Hrs = 2

Pre/Corequisite: READ 300 or equivalent

KINE 1122**Water Aerobics, Experienced**

A course designed to review the basic skills for exercise in the water. Emphasis will be placed on various exercise routines with extended duration. Students will devise a routine of their own and incorporate strength, endurance and flexibility.

Lecture Hrs = 1, Lab Hrs = 2

Prerequisite: KINE 1121

Pre/Corequisite: READ 300 or equivalent

KINE 1123**Weight Training, Beginning**

A course designed to introduce a variety of programs for building strength, power, endurance, flexibility and cardiovascular endurance. Both machines and free weights will be used for programs. Weight management will be discussed.

Lecture Hrs = 1, Lab Hrs = 2

Pre/Corequisite: READ 300 or equivalent

KINE 1124**Weight Training, Experienced**

A course designed to review a variety of programs for building strength, power, endurance, flexibility and cardiovascular endurance. Supplementation and nutrition will be addressed.

Lecture Hrs = 1, Lab Hrs = 2

Prerequisite: KINE 1123

Pre/Corequisite: READ 300 or equivalent

KINE 1125**Sailing, Beginning**

A course designed to learn the basic techniques in sailing with emphasis on equipment, safety and the skills of rigging, setting the sails, starting and stopping, tacking, tiller movement, leaving and returning to the beach.

Lecture Hrs = 1, Lab Hrs = 2

Pre/Corequisite: READ 300 or equivalent

KINE 1126**Sailing, Experienced**

A course designed to review the techniques in sailing with emphasis on the skills of rigging, setting the sails, starting and stopping, tacking, jibing, tiller movement, leaving a beach, returning to beach, and correct language for sailing.

Lecture Hrs = 1, Lab Hrs = 2

Prerequisite: KINE 1125

Pre/Corequisite: READ 300 or equivalent

KINE 1127**Yoga, Beginning**

A course designed to learn the importance and benefits of yoga. Learning skills will include postures (asanas), breathing, and relaxation techniques. An emphasis will be made to improve flexibility, strength, muscle tone, and concentration.

Lecture Hrs = 1, Lab Hrs = 2

Pre/Corequisite: READ 300 or equivalent

KINE 1128**Yoga, Experienced**

A course designed to review the postures and techniques for Hatha Yoga. Emphasis will be given to flexibility, breathing and relaxation techniques.

Lecture Hrs = 1, Lab Hrs = 2

Prerequisite: KINE 1127

Pre/Corequisite: READ 300 or equivalent

KINE 1129**Basketball, Beginning**

A course designed to learn rules, fundamental techniques and strategies for the sport of basketball. Emphasis will be placed on proper execution of individual and team skill concepts.

Lecture Hrs = 1, Lab Hrs = 2

Pre/Corequisite: READ 300 or equivalent

KINE 1130**Basketball, Experienced**

A course designed to learn rules, advanced techniques and strategies for the sport of basketball. Emphasis will be placed on proper execution of individual and team skill concepts.

Lecture Hrs = 1, Lab Hrs = 2

Prerequisite: KINE 1129

Pre/Corequisite: READ 300 or equivalent

KINE 1133**Yogalates, Beginning**

An introductory course designed to teach students how to strengthen core and postural muscles, while also improving balance and coordination. This course is an integration of Pilates for core strength, and Hatha Yoga for limb strength and flexibility.

Lecture Hrs = 1, Lab Hrs = 2

Pre/Corequisite: READ 300 or ESOL 310 or equivalent or Personal Enrichment

KINE 1134**Yogalates, Experienced**

An intermediate course designed to strengthen core and postural muscles, while also improving balance and coordination. This course is an integration of Pilates for core strength, and Hatha Yoga for limb strength and flexibility. Students will refine introductory techniques to progress to advanced levels.

Lecture Hrs = 1, Lab Hrs = 2

Pre/Corequisite: READ 300 or ESOL 310 or equivalent or Personal Enrichment

KINE 1141**Self-Defense, Beginning**

Instruction will include specific moves related to martial art movements in regard to self-protection.

Lecture Hrs = 1, Lab Hrs = 2

Pre/Corequisite: READ 300 or equivalent

KINE 1142**Self-Defense, Experienced**

A course designed to review specific moves related to martial art movements in regard to self-protection. Students will be required to demonstrate proficiency in martial art movements in sequence.

Lecture Hrs = 1, Lab Hrs = 2

Prerequisite: KINE 1141

Pre/Corequisite: READ 300 or equivalent

KINE 1147**Racquet Sports, Beginning**

A course designed to learn the fundamental of racquet sports such as tennis, racquetball, and badminton. Emphasis will be placed on correct technique for the fundamental strokes. Rules, etiquette, and game play for singles and doubles matches will be addressed.

Lecture Hrs = 1, Lab Hrs = 2

Pre/Corequisite: READ 300, ESOL 310, or equivalent or Personal Enrichment

KINE 1148**Racquet Sports, Experience**

A course designed to improve the fundamentals of racquet sports such as tennis, racquetball, and badminton. Emphasis will be placed on skill development and advanced strategy for singles and doubles play.

Lecture Hrs = 1, Lab Hrs = 2

Prerequisite: KINE 1148

Pre/Corequisite: READ 300, ESOL 310, or equivalent

KINE 1149**Conditioning for Athletics**

A course designed to develop strength and endurance as related to athletics.

Lecture Hrs = 1, Lab Hrs = 2

Pre/Corequisite: READ 300 or equivalent

KINE 1150**Conditioning for Athletics**

A course designed to develop speed and power as related to athletics.

Lecture Hrs = 1, Lab Hrs = 2

Prerequisite: KINE 1149

Pre/Corequisite: READ 300 or equivalent

KINE 1151**Skin and Scuba Diving, Beginning**

A course designed to learn fundamental techniques for under water procedures. Techniques in breathing, communicating and diving will be taught. Manipulation of diving equipment will be covered as well as safety procedures.

Lecture Hrs = 1, Lab Hrs = 2

Prerequisite: Good Swimming Skills

Pre/Corequisite: READ 300 or equivalent

KINE 1152**Scuba Diving, Experienced**

Must be at least 17 years of age and have participated in scuba diving for one year as a certified diver.

Lecture Hrs = 1, Lab Hrs = 2

Prerequisite: KINE 1151

Pre/Corequisite: READ 300 or equivalent

KINE 1183M**Basketball Team**

A course designed for individuals on athletic scholarships who participate in basketball.

Lecture Hrs = 1, Lab Hrs = 2

Prerequisite: Instructor's permission

Pre/Corequisite: READ 300 or equivalent

KINE 1184M**Basketball Team**

A course designed for individuals on athletic scholarships who participate in basketball.

Lecture Hrs = 1, Lab Hrs = 2

Prerequisite: KINE 1183M, Instructor's permission

Pre/Corequisite: READ 300 or equivalent

KINE 1185W**Tennis Team**

A course designed for individuals on athletic scholarships who participate in tennis.

Lecture Hrs = 1, Lab Hrs = 2

Prerequisite: Instructor's permission

Pre/Corequisite: READ 300 or equivalent

KINE 1186W**Tennis Team**

A course designed for individuals on athletic scholarships who participate in tennis.

Lecture Hrs = 1, Lab Hrs = 2

Prerequisite: KINE 1185W, Instructor's permission

Pre/Corequisite: READ 300 or equivalent

KINE 1187W**Volleyball Team**

A course designed for individuals on athletic scholarships who participate in volleyball.

Lecture Hrs = 1, Lab Hrs = 2

Prerequisite: Instructor's permission

Pre/Corequisite: READ 300 or equivalent

KINE 1188W**Volleyball Team**

A course designed for individuals on athletic scholarships who participate in volleyball.

Lecture Hrs = 1, Lab Hrs = 2

Prerequisite: KINE 1187W, Instructor's permission

Pre/Corequisite: READ 300 or equivalent

KINE 1301**Foundations in Physical Education**

A course which includes the history, principles, terminology, aims and objectives of physical education and related areas of health and recreation.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: READ 301 or equivalent

KINE 1304**Personal Health**

Fundamentals of health dealing with personal hygiene. Includes a study of bodily organs and diseases, physical and mental health concepts, and community health problems.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: READ 301 or equivalent

KINE 1305**The Healthy American**

A course designed for individuals to make lifestyle assessments within the six dimensions of wellness; the physical, emotional, mental, social, spiritual and occupational dimensions.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: READ 301 or equivalent

KINE 1306**First Aid**

A course which includes instruction in American Red Cross Standard First Aid and personal safety and cardiopulmonary resuscitation. Upon successfully completing the course, students are certified in first aid and CPR.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: READ 301 or equivalent

KINE 1308**Sports Officiating**

A course designed for students desiring to increase their knowledge and appreciation of sports. Students will be given an insight into the rules of various sports, the technique, procedure and practice of officiating.

Lecture Hrs = 2, Lab Hrs = 2

Pre/Corequisite: READ 301 or equivalent

KINE 1332**Elementary and Recreational Game Skills**

Instruction in games, recreational activities and rhythm skills for preschool through grade six with emphasis on methods of presentation.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: READ 301 or equivalent

KINE 1338**Concepts of Physical Fitness**

This course presents the concepts and use of selected physiological variables of fitness, individual testing and consultation, and the organization of sport and fitness programs.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: READ 301 or equivalent

KINE 2149**Conditioning for Athletics**

A course designed to develop dynamic speed, coordination and balance as related to athletics.

Lecture Hrs = 1, Lab Hrs = 2

Pre/Corequisite: READ 300 or equivalent

KINE 2150**Conditioning for Athletics**

A course designed to develop dynamic power and flexibility for athletics.

Lecture Hrs = 1, Lab Hrs = 2

Prerequisite: KINE 2149

Pre/Corequisite: READ 300 or equivalent

KINE 2155**Water Safety**

Basic Lifeguarding is designed to: (1) train participants in basic water safety and rescue skills; (2) develop the skills necessary to obtain Basic Lifeguarding certification; and (3) prepare students for summer-time employment.

Required swimming skills: Students must be able to swim continuously 500 yards competently demonstrating the five basic strokes (crawl, back crawl, breaststroke, elementary backstroke and sidestroke). Students should be able to dive to a minimum depth of 9 feet and bring a 10-pound diving brick to the surface. Students should be able to dive to a depth of 5 feet and swim underwater for at least 15 yards and be able to tread water for 1 minute.

Lecture Hrs = 1, Lab Hrs = 2

Pre/Corequisite: READ 300 or equivalent

KINE 2183M**Basketball Team**

A course designed for individuals on athletic scholarships who participate in basketball.

Lecture Hrs = 1, Lab Hrs = 2

Prerequisite: KINE 1184M, Instructor's permission

Pre/Corequisite: READ 300 or equivalent

KINE 2184M**Basketball Team**

A course designed for individuals on athletic scholarships who participate in basketball.

Lecture Hrs = 1, Lab Hrs = 2

Prerequisite: KINE 2183M, Instructor's permission

Pre/Corequisite: READ 300 or equivalent

KINE 2185W**Tennis Team**

A course designed for individuals on athletic scholarships who participate in Tennis.

Lecture Hrs = 1, Lab Hrs = 2

Prerequisite: KINE 1186W, Instructor's permission

Pre/Corequisite: READ 300 or equivalent

KINE 2186W**Tennis Team**

A course designed for individuals on athletic scholarships who participate in Tennis.

Lecture Hrs = 1, Lab Hrs = 2

Prerequisite: KINE 2185W, Instructor's permission

Pre/Corequisite: READ 300 or equivalent

KINE 2187W**Volleyball Team**

A course designed for individuals on athletic scholarships who participate in volleyball.

Lecture Hrs = 1, Lab Hrs = 2

Prerequisite: KINE 1188W, Instructor's permission

Pre/Corequisite: READ 300 or equivalent

KINE 2188W**Volleyball Team**

A course designed for individuals on athletic scholarships who participate in volleyball.

Lecture Hrs = 1, Lab Hrs = 2

Prerequisite: KINE 2187W, Instructor's permission

Pre/Corequisite: READ 300 or equivalent

KINE 2356**Care and Prevention of Athletic Injuries**

Students will acquire knowledge regarding the signs and symptoms of injuries specific to each body part. Along with injury recognition, they will also learn how to treat and stabilize a variety of orthopedic injuries. To help students learn practical skills, hands-on learning labs will be utilized throughout the course in areas of wound management, splinting, vital signs, transporting athletes, modalities, and supportive taping techniques.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: READ 301 or equivalent

LGLA 1301**Legal Research and Writing**

This course provides a working knowledge of fundamentals of effective legal research and writing. Topics include law library techniques, computer assisted legal research, briefs, and legal memoranda.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 301 or ESOL 311 or equivalent

LGLA 1307**Introduction to Law and the Legal Professions**

This course provides an overview of the law and the legal professions. Topics include legal concepts, systems, and terminology; ethical obligations and regulations; professional trends and issues with particular emphasis on the paralegal.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 301 or ESOL 311 or equivalent

LGLA 1317**Law Office Technology**

Computer technology and software applications within the law office. Introductory.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: LGLA 1307, ENGL 1301

LGLA 1343**Bankruptcy**

This course presents fundamental concepts of bankruptcy law and procedure with emphasis on the paralegal's role. Topics include individual and business liquidation and reorganization.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: LGLA 1307, ENGL 1301

LGLA 1345**Civil Litigation**

This course presents fundamental concepts and procedures of civil litigation with emphasis on the paralegal's role. Topics include pretrial, trial, and post trial phases of litigation.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: LGLA 1307, ENGL 1301

LGLA 1351**Contracts**

This course presents fundamental concepts of contract law with emphasis on the paralegal's role. Topics include formation, performance, and enforcement of contracts under the common law and the Uniform Commercial Code.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: LGLA 1307, ENGL 1301

LGLA 1353**Wills, Trusts and Probate Administration**

This course presents fundamental concepts of the law of wills, trusts, and probate administration with emphasis on the paralegal's role.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: LGLA 1307, ENGL 1301

LGLA 1355**Family Law**

This course presents fundamental concepts of family law with emphasis on the paralegal's role. Topics include formal and informal marriages, divorce, annulment, marital property, and the parent-child relationship.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: LGLA 1307, ENGL 1301

LGLA 2301**Environmental Law**

This course presents fundamental concepts of environmental law with emphasis on the paralegal's role. Topics include terminology, creation of environmental law, and the application of statutes and government regulations to specific fact situations.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: LGLA 1307, ENGL 1301

LGLA 2303**Torts and Personal Injury Law**

This course presents fundamental concepts of tort law with emphasis on the paralegal's role. Topics include intentional torts, negligence, and strict liability.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: LGLA 1307, ENGL 1301

LGLA 2307**Law Office Management**

Basic principles and structure of management, administration and substantive systems in the law office. Includes law practice technology as applied to paralegals.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: LGLA 1307, ENGL 1301

LGLA 2309**Real Property**

This course presents fundamental concepts of real property law with emphasis on the paralegal's role. Topics include the nature of real property, rights and duties of ownership, land use, voluntary and involuntary conveyances, and the recording of and searching for real estate documents.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: LGLA 1307, ENGL 1301

LGLA 2311**Business Organizations**

Basic concepts of business organizations with emphasis on the paralegal's role. Includes law of agency, sole proprietorships, partnerships, corporations, and other emerging business entities.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: LGLA 1307, ENGL 1301

LGLA 2313**Criminal Law and Procedure**

Procedures from arrest to final disposition, principles of federal and state law, and the preparation of pleadings and motions as applied to paralegals.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: LGLA 1307, ENGL 1301

LGLA 2323**Intellectual Property**

Paralegal's role in creation, procurement, preparation, filing of and for patents, copyrights, and trademarks. Includes processes of intellectual property litigation.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: LGLA 1307, ENGL 1301

LGLA 2331**Advanced Legal Research and Writing**

Computerized research techniques and preparation of complex legal documents such as briefs, legal office memoranda, and citation forms.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: LGLA 1301, LGLA 1307, ENGL 1301

LGLA 2333**Advanced Legal Document Preparation**

Preparation of legal documents by paralegals based on hypothetical situations drawn from various areas including real estate, family law, contracts, litigation, and business organizations.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: 15 SCH of LGLA Coursework, POFI 1401, READ 301 or equivalent

LGLA 2337**Mediation**

Alternative dispute resolution. Emphasizes the role of the paralegal in mediation. Includes differences between mediation and arbitration, the process of mediation, and dispute resolution techniques.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: LGLA 1307, ENGL 1301

LGLA 2388**Internship - Legal Assistant/Paralegal**

A work-based learning experience that enables the student to apply specialized occupational theory, skills and concepts. A learning plan is developed by the college and the employer.

Lecture Hrs = 0, Lab Hrs = 0, External Hrs = 13

Prerequisite: 12 SCH of LGLA Coursework, ENGL 1302, SPCH 1315, POFI 1401, READ 301 or equivalent

LGLA 2389**Internship - Legal Assistant/Paralegal**

A work-based learning experience that enables the student to apply specialized occupational theory, skills and concepts. A learning plan is developed by the college and the employer. Capstone course to be taken toward end of program.

Lecture Hrs = 0, Lab Hrs = 0, External Hrs = 13

Prerequisite: 24 SCH of LGLA Coursework, ENGL 1302, SPCH 1315, POFI 1401

MATH 110**Mathematics for Allied Health**

Treats the area of mathematics of dosages and solutions, reflecting a major emphasis on the metric, apothecary, and household systems in terms of refresher math, instruction in reading dosage labels, measurements of parenteral dosages, and pediatric drug calculation.

Lecture Hrs = 1, Lab Hrs = 0

Prerequisite: MATH 310 or equivalent, READ 300 or equivalent

MATH 310**Basic Mathematics**

This course provides the basic arithmetic skills of addition, subtraction, multiplication, and division of whole numbers, fractions, and decimals; ratio and proportion, percent, measures, averages, exponents, square roots, problem solving, geometry, logic, and introduction to algebra. In this course a grade of "C" or higher prepares the student to take MATH 315. Credit for this course is not transferable.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: READ 300 or equivalent

MATH 315**Pre Algebra**

This course provides a transition from arithmetic to algebra. Algebraic concepts are introduced through traditional arithmetic topics including whole numbers, fractions, decimals, percents, geometric formulas, ratio and proportions, and signed numbers. Unit conversion and basic data analysis will also be studied. A grade of "C" or higher prepares the student to take MATH 320. Credit for this course is not transferable.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: MATH 310 or equivalent, READ 300 or equivalent

MATH 320**Introductory Algebra**

This course provides a strong emphasis on algebraic skills and concepts of the numbers of ordinary arithmetic and their properties; integers and rational numbers; polynomials in one or more variables; factoring; fractional expressions; solving systems of equations; graphs of linear equations; solving radical, linear and quadratic equations; inequalities; sets; and applied problems. This course prepares students to take MATH 330 or MATH 1332 when completed with a grade of "C" or higher. May not be applied toward a certificate or degree at Lee College. Credit for this course is not transferable.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: MATH 315 or equivalent, READ 300 or equivalent

MATH 330**Intermediate Algebra**

Covers these topics: real numbers and their properties, linear equations, system of equations, polynomials and functions, fractional expressions and equations, exponents, powers, roots, quadratic equations and functions, equations of second degree and their graphs, inequalities and sets, exponential and logarithmic functions, and problem solving. This course, when completed with a grade of "C" or higher, provides adequate preparation for MATH 1414. Credit for this course is not transferable.

Lecture Hrs = 3, Lab Hrs = 1

Prerequisite: MATH 320 or equivalent, READ 300 or equivalent

MATH 520**Pre Algebra and Introduction to Algebra**

This course provides a review of addition, subtraction, multiplication and division of integers and rational numbers with a strong emphasis on decimals, fractions, ratio, proportions, and percents. Also, a strong emphasis on algebraic skills and concepts of the real number system, solving equations and inequalities, exponents and polynomials, factoring, rational expressions, graphing linear equations, linear systems, roots and radicals, quadratic equations and applied problems. This course prepares students to take MATH 330 or MATH 530, when completed with a grade of "C" or higher. May not be applied toward a certificate or degree at Lee College. Will not transfer to another college or university.

Lecture Hrs = 5, Lab Hrs = 0

Prerequisite: MATH 310 or equivalent, READ 300 or equivalent

MATH 530**Introductory and Intermediate Algebra:****A Combined Course**

This course provides a strong emphasis on algebraic skills and concepts of the real number system, solving polynomials, factoring, rational expressions and equations, linear systems, roots and radicals, quadratic equations and inequalities, functions including exponents and logarithmic matrices, and problem solving. This course prepares students to take MATH 1414 when completed with a grade of "C" or higher. May not be applied toward a certificate or degree at Lee College. Will not transfer to another college or university.

Lecture Hrs = 5, Lab Hrs = 0

Prerequisite: MATH 315 or equivalent, READ 300 or equivalent

MATH 1316**Plane Trigonometry**

This course covers trigonometric functions, identities, equations, and applications.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: MATH 1414 or equivalent (C or better), ENGL 301 or equivalent

Pre/Corequisite: READ 302 or equivalent

MATH 1324**Finite Mathematics with Business Applications**

Includes such topics as sets, functions, linear and quadratic inequalities, linear programming, the simplex method, matrix algebra, counting techniques, probability, and decision making. A computer component may be included.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: MATH 1414 or equivalent (C or better), ENGL 301 or equivalent

Pre/Corequisite: READ 302 or equivalent

MATH 1332**Contemporary Mathematics I**

This course assists students in becoming familiar with certain mathematical topics: sets, logic, different numeration systems, number theory, the real numbers and their properties, mathematical systems, equations, inequalities, graphs, and functions.

Note: Students entering the University of Houston-Clear Lake, in the School of Human Sciences and Humanities (with the exception of education majors) may use MATH 1332 as an admission requirement instead of college algebra.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: MATH 320 or equivalent, ENGL 301 or equivalent, READ 302 or equivalent



MATH 1333**Contemporary Mathematics II**

This course assists students in becoming familiar with basic geometric terms and concepts. The student will be exposed to counting methods, introductory probability, statistics, consumer mathematics, computers and matrices and their applications.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: MATH 1332 (C or Better), ENGL 301 or equivalent, READ 302 or equivalent

MATH 1350**Fundamentals of Mathematics I**

This course covers concepts of sets, functions, numeration systems, number theory, and properties of the natural numbers, integers, rational, and real number systems with an emphasis on problem solving and critical thinking. This course is designed specifically for students who seek middle grade (4-8) teacher certification.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: MATH 1414 or equivalent (C or better), ENGL 301 or equivalent

Pre/Corequisite: READ 302 or equivalent

MATH 1351**Fundamentals of Mathematics II**

This course covers concepts of geometry, probability, and statistics, as well as applications of algebraic properties of real numbers to concepts of measurements with an emphasis on problem solving and critical thinking. This course is designed specifically for students who seek middle grade (4-8) teacher certification.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: MATH 1350

MATH 1414**College Algebra**

This course covers the study of quadratics; polynomial, rational, logarithmic, and exponential functions; systems of equations; progressions; sequences and series; and matrices and determinants.

Lecture Hrs = 4, Lab Hrs = 0

Prerequisite: MATH 330 or equivalent, ENGL 301 or equivalent

Pre/Corequisite: READ 302 or equivalent

MATH 1425**Calculus with Business Applications**

Includes such topics as limits and continuity, rates of change, slope, differentiation, the derivative, maxima and minima techniques, integration: definite and indefinite integration techniques.

Lecture Hrs = 4, Lab Hrs = 0

Prerequisite: MATH 1414 or equivalent (C or better), ENGL 301 or equivalent

Pre/Corequisite: READ 302 or equivalent

MATH 2305**Discrete Mathematics**

A study of set theory, relations, functions, matrices, number systems, number theory, difference equations, graphs and trees, combinatorics, probability, and Boolean Algebra.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: MATH 1414 or equivalent (C or better), ENGL 301 or equivalent

Pre/Corequisite: READ 302 or equivalent

MATH 2412**Precalculus**

This course covers the applications of algebra and trigonometry to the study of elementary functions and their graphs including polynomial, rational, exponential, logarithmic, and trigonometric functions and may include topics from analytical geometry.

Lecture Hrs = 4, Lab Hrs = 0

Prerequisite: MATH 1414 or equivalent (C or better), ENGL 301 or equivalent

Pre/Corequisite: READ 302 or equivalent

MATH 2413**Calculus I with Analytic Geometry**

This course includes limits, continuity of functions, algebraic and trigonometric function derivative of functions with application in related-rate and optimization problems, differentials, indeterminate forms, L'Hospital's Rule, Max-Min Theorems, Mean Value Theorem, Fundamental Theorem of Calculus, integration with applications to area, volumes, surface area, moments, centers of mass, work and hydrostatic force, and numerical integration.

Lecture Hrs = 4, Lab Hrs = 0

Prerequisite: MATH 2412 or equivalent (C or better)

MATH 2414**Calculus II with Analytic Geometry**

Transcendental functions, methods of integration conic sections, other plane curves, parametric equations, hyperbolic functions: definitions, identities, derivatives, and integrals; inverse hyperbolic functions; polar coordinates. Sequences, infinite series, convergence, power series, Taylor Polynomials, Taylor's Theorem, convergence of power series: Differentiation, integration, multiplication, and division; vectors.

Lecture Hrs = 4, Lab Hrs = 0

Prerequisite: MATH 2413 with a C or better

MATH 2415**Calculus III with Analytic Geometry**

Vector functions and motion, surfaces, cylindrical and spherical coordinate systems, and curve sketching. Limits and continuity of functions of two variable, partial derivatives, directional derivatives, gradient, surfaces, tangent planes, differential approximations, LaGrange multipliers, multiple integration, physical applications, triple integration, center of gravity, movement of inertia, line integrals, Green's Theorem, surface integrals, Gauss and Stokes Theorem, and differential equations.

Lecture Hrs = 4, Lab Hrs = 0

Prerequisite: MATH 2414 or equivalent (C or better)

MATH 2418**Linear Algebra**

Introductory course in linear algebra covering abstract ideas of vector spaces and linear transformations as well as applications of these concepts, systems of linear equations, matrices and determinants, quadratic forms, equivalence and similarity of matrices eigenvectors and eigenvalues, and the Gram-Schmidt procedure.

Lecture Hrs = 4, Lab Hrs = 0

Prerequisite: MATH 2413 with a C or better

MATH 2420**Differential Equations**

Integration of differential equations of the first order by elementary methods, geometry and integral curves, physical applications, properties of linear equations, simultaneous equations with applications, solutions by Laplace transforms and series.

Lecture Hrs = 4, Lab Hrs = 0

Prerequisite: MATH 2414 or equivalent (C or better)

MATH 2442**Elementary Statistics**

A study of collection and tabulation of data, bar charts, graphs, sampling, measures of central tendency and variability, correlation, index numbers, statistical distributions, probability, linear regression, and applications to various fields of study.

Lecture Hrs = 4, Lab Hrs = 0

Prerequisite: MATH 1414 or equivalent (C or better), ENGL 301 or equivalent

Pre/Corequisite: READ 302 or equivalent

MCHN 1343**Machine Shop Mathematics**

Designed to prepare the student with technical, applied mathematics that will be necessary in future machine shop-related courses.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: READ 300 or equivalent

MCHN 1391**Special Topics in Machinist/Machine Technologist: Machine Parts Met**

Topics address recently identified current events, skills, knowledge and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course was designed to be repeated multiple times to improve student proficiency. Topics will include mechanical field sketching thru basics blueprint. Practical experience in precision measuring and dimensioning for manufacturing.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: READ 300 or equivalent

MCHN 1416**Machine Tool Repair**

Basic repair of machine tools, disassembly, parts fabrication, and assembly of machine types, including related math, blueprint reading, and safety.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: MCHN 2445

Pre/Corequisite: READ 300 or equivalent

MCHN 1425**Millwright I**

An introduction to millwright technology. A study of common millwright tools and fasteners. Development of skills in basic layout procedures, gasket making and installation and oxygen/fuel cutting. Emphasis on safety in the accomplishment of these activities.

Lecture Hrs = 3, Lab Hrs = 3

Pre/Corequisite: READ 300 or equivalent

MCHN 1429**Millwright II**

An introduction to millwright tools including speciality power and precision tools. A study of the property of metals and in the installation of packings. Emphasis on safety in the accomplishment of these activities.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: MCHN 1425

Pre/Corequisite: READ 300 or equivalent

MCHN 1452**Intermediate Machining I**

Operation of drills, milling machines, lathes, and power saws. Introduction to precision measuring techniques.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: READ 300 or ESOL 310 or equivalent

MCHN 1454**Intermediate Machining II**

Development of job process plan to include operation of lathes, milling machines, drill press machines, and power saws. Set-up, layout, and tool maintenance is included. Emphasis on shop safety and preventative maintenance.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: MCHN 1452, READ 300 or equivalent

MCHN 2403**Fundamentals of Computer Numerical Controlled (CNC) Machine Contr**

An introduction to G and M codes (RS274-D) necessary to program Computer Numerical Controlled (CNC) machines.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: MCHN 1454, READ 300 or equivalent

MCHN 2405**Millwright III**

An introduction to bearings and seals. Identification of common bearings and seals. Emphasis on design and installation of seals and bearings, and couplings.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: MCHN 1425

Pre/Corequisite: READ 300 or equivalent

MCHN 2407**Millwright IV**

A study in the recognition and application of pumps. Emphasis on troubleshooting, repair, and installation of pumps.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: MCHN 1429

Pre/Corequisite: READ 300 or equivalent

MCHN 2412**Millwright V**

A study of the recognition and application of gearboxes. A review of drive installations using chain and belt drives. This course will focus on troubleshooting, repairing, and installing gearboxes, chain drives, and belt drives.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: MCHN 2407, READ 300 or equivalent

MCHN 2434**Operation of CNC Machining Centers**

A continuation of Fundamentals of CNC Machine Controls with an emphasis on machining centers.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: MCHN 1317, MCHN 2445, READ 300 or equivalent

MCHN 2441**Advanced Machining I**

An advanced study of lathe and milling operations. Emphasis on advanced cutting operations of the lathe and milling machines, including the use of carbide insert tooling, special tooling, bench assembly, and materials metallurgy.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: MCHN 1452, READ 300 or equivalent

MCHN 2445**Advanced Machining II**

Advanced milling, drilling, grinding, and lathe operations to close tolerance dimensions. Emphasis on job planning and advanced uses of precision measuring instruments.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: MCHN 1452, READ 300 or equivalent

MRKG 1311**Principles of Marketing**

Introduction to the marketing functions; identification of consumer and organizational needs; explanation of economic, psychological, sociological, and global issues; and description and analysis of the importance of marketing research.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: READ 301 or equivalent

MRKG 2333**Principles of Selling**

Overview of the selling process. Identification of the elements of the communication process between buyers and sellers. Examination of the legal and ethical issues of organizations which affect salespeople.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 301 or ESOL 311 or equivalent

MRMT 1167**Practicum (or Field Experience) - Medical Transcription/Transcriptionist**

Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student.

Lecture Hrs = 0, Lab Hrs = 0, External Lab = 8,

Insurance Fee

Prerequisite: MRMT 1307, READ 300 or equivalent

Pre/Corequisite: MRMT 2433

MRMT 1307**Medical Transcription I**

Fundamentals of medical transcription with hands-on experience in transcribing physician dictation including basic reports such as history and physicals, discharge summaries, consultations, operative reports, and other medical reports. Utilizes transcribing and information processing equipment compatible with industry standards. Designed to develop speed and accuracy.

Lecture Hrs = 1, Lab Hrs = 4

Prerequisite: HITT 1305, ITSC 1309, READ 300 or equivalent

MRMT 2433**Medical Transcription II**

Production of advanced reports of physician dictation with increasing speed and accuracy including history and physicals, consultations, discharge summaries, operative reports, and other medical reports.

Lecture Hrs = 3, Lab Hrs = 2

Prerequisite: MRMT 1307, READ 300 or equivalent

MUAP 1101**Strings - Violin**

Pre/Corequisite: READ 300 or equivalent

MUAP 1102**Strings - Violin**

Pre/Corequisite: READ 300 or equivalent

MUAP 1105**Strings - Viola**

Pre/Corequisite: READ 300 or equivalent

MUAP 1106**Strings - Viola**

Pre/Corequisite: READ 300 or equivalent

MUAP 1109**Strings - Cello**

Pre/Corequisite: READ 300 or equivalent

MUAP 1110**Strings - Cello**

Pre/Corequisite: READ 300 or equivalent

MUAP 1113**Strings - String Bass**

Pre/Corequisite: READ 300 or equivalent

MUAP 1114**Strings - String Bass**

Pre/Corequisite: READ 300 or equivalent

MUAP 1117**Woodwind - Flute**

Pre/Corequisite: READ 300 or equivalent

MUAP 1118**Woodwind - Flute**

Pre/Corequisite: READ 300 or equivalent

MUAP 1121**Woodwind - Oboe**

Pre/Corequisite: READ 300 or equivalent

MUAP 1122**Woodwind - Oboe**

Pre/Corequisite: READ 300 or equivalent

MUAP 1125**Woodwind - Bassoon**

Pre/Corequisite: READ 300 or equivalent

MUAP 1126**Woodwind - Bassoon**

Pre/Corequisite: READ 300 or equivalent

MUAP 1129**Woodwind - Clarinet**

Pre/Corequisite: READ 300 or equivalent

MUAP 1130**Woodwinds - Clarinet**

Pre/Corequisite: READ 300 or equivalent

MUAP 1133**Woodwind - Saxophone**

Pre/Corequisite: READ 300 or equivalent

MUAP 1134**Woodwind - Saxophone**

Pre/Corequisite: READ 300 or equivalent

MUAP 1137**Brass - Trumpet**

Pre/Corequisite: READ 300 or equivalent

MUAP 1138**Brass - Trumpet**

Pre/Corequisite: READ 300 or equivalent

MUAP 1141**Brass - French Horn**

Pre/Corequisite: READ 300 or equivalent

MUAP 1142
Brass - French Horn
Pre/Corequisite: READ 300 or equivalent

MUAP 1145
Brass - Trombone
Pre/Corequisite: READ 300 or equivalent

MUAP 1146
Brass - Trombone
Pre/Corequisite: READ 300 or equivalent

MUAP 1153
Brass - Tuba
Pre/Corequisite: READ 300 or equivalent

MUAP 1154
Brass - Tuba
Pre/Corequisite: READ 300 or equivalent

MUAP 1157
Percussion
Pre/Corequisite: READ 300 or equivalent

MUAP 1158
Percussion
Pre/Corequisite: READ 300 or equivalent

MUAP 1161
Strings - Classical Guitar
Pre/Corequisite: READ 300 or equivalent

MUAP 1162
Strings - Classical Guitar
Pre/Corequisite: READ 300 or equivalent

MUAP 1165
Organ
Pre/Corequisite: READ 300 or equivalent

MUAP 1166
Organ
Pre/Corequisite: READ 300 or equivalent

MUAP 1169
Piano
Pre/Corequisite: READ 300 or equivalent

MUAP 1170
Piano
Pre/Corequisite: READ 300 or equivalent

MUAP 1177
Harp
Pre/Corequisite: READ 300 or equivalent

MUAP 1178
Harp
Pre/Corequisite: READ 300 or equivalent

MUAP 1181
Voice
Pre/Corequisite: READ 300 or equivalent

MUAP 1182
Voice
Pre/Corequisite: READ 300 or equivalent

MUAP 1187
Strings - Bass Guitar
Pre/Corequisite: READ 300 or equivalent

MUAP 1188
Strings - Bass Guitar
Pre/Corequisite: READ 300 or equivalent

MUAP 1191
Strings - Electric Guitar
Pre/Corequisite: READ 300 or equivalent

MUAP 1192
Strings - Electric Guitar
Pre/Corequisite: READ 300 or equivalent

MUAP 1201
Strings - Violin
Pre/Corequisite: READ 300 or equivalent
Corequisite: MUEN 1123 or MUEN 2123

MUAP 1202
Strings - Violin
Pre/Corequisite: READ 300 or equivalent
Corequisite: MUEN 1123 or MUEN 2123

MUAP 1203
Violin - Freshman Major
Pre/Corequisite: READ 300 or equivalent

MUAP 1204
Violin - Freshman Major
Pre/Corequisite: READ 300 or equivalent

MUAP 1205
Strings - Viola
Pre/Corequisite: READ 300 or equivalent
Corequisite: MUEN 1123 or MUEN 2123

MUAP 1206
Strings - Viola
Pre/Corequisite: READ 300 or equivalent
Corequisite: MUEN 1123 or MUEN 2123

MUAP 1207
Viola - Freshman Major
Pre/Corequisite: READ 300 or equivalent

MUAP 1208
Viola - Freshman Major
Pre/Corequisite: READ 300 or equivalent

MUAP 1209
Strings - Cello
Pre/Corequisite: READ 300 or equivalent
Corequisite: MUEN 1123 or MUEN 2123

MUAP 1210
Strings - Cello
Pre/Corequisite: READ 300 or equivalent
Corequisite: MUEN 1123 or MUEN 2123

MUAP 1211
Cello - Freshman Major
Pre/Corequisite: READ 300 or equivalent

MUAP 1212
Cello - Freshman Major
Pre/Corequisite: READ 300 or equivalent

MUAP 1213
Strings - String Bass
Pre/Corequisite: READ 300 or equivalent
Corequisite: MUEN 1123 or MUEN 2123

MUAP 1214
Strings - String Bass
Pre/Corequisite: READ 300 or equivalent
Corequisite: MUEN 1123 or MUEN 2123

MUAP 1215
String Bass - Freshman Major
Pre/Corequisite: READ 300 or equivalent

MUAP 1216
String Bass - Freshman Major
Pre/Corequisite: READ 300 or equivalent

MUAP 1217
Woodwinds - Flute
Pre/Corequisite: READ 300 or equivalent
Corequisite: MUEN 1123, MUEN 2123, MUEN 1125, MUEN 2125, MUEN 1135, or MUEN 1235 (must select one or more)

MUAP 1218
Woodwinds - Flute
Pre/Corequisite: READ 300 or equivalent
Corequisite: MUEN 1123, MUEN 2123, MUEN 1125, MUEN 2125, MUEN 1135, or MUEN 1235 (must select one or more)

MUAP 1219
Flute - Freshman Major
Pre/Corequisite: READ 300 or equivalent

MUAP 1220
Flute - Freshman Major
Pre/Corequisite: READ 300 or equivalent

MUAP 1221
Woodwinds - Oboe
Pre/Corequisite: READ 300 or equivalent
Corequisite: MUEN 1123, MUEN 2123, MUEN 1125, MUEN 2125, MUEN 1135, or MUEN 1235 (must select one or more)

MUAP 1222
Woodwinds - Oboe
Pre/Corequisite: READ 300 or equivalent
Corequisite: MUEN 1123, MUEN 2123, MUEN 1125, MUEN 2125, MUEN 1135, or MUEN 1235 (must select one or more)

MUAP 1223
Oboe - Freshman Major
Pre/Corequisite: READ 300 or equivalent

MUAP 1224
Oboe - Freshman Major
Pre/Corequisite: READ 300 or equivalent

MUAP 1225
Woodwinds - Bassoon
Pre/Corequisite: READ 300 or equivalent
Corequisite: MUEN 1123, MUEN 2123, MUEN 1125, MUEN 2125, MUEN 1135, or MUEN 1235 (must select one or more)

MUAP 1226
Woodwinds - Bassoon
Pre/Corequisite: READ 300 or equivalent
Corequisite: MUEN 1123, MUEN 2123, MUEN 1125, MUEN 2125, MUEN 1135, or MUEN 1235 (must select one or more)

MUAP 1227
Bassoon - Freshman Major
Pre/Corequisite: READ 300 or equivalent

MUAP 1228
Bassoon - Freshman Major
Pre/Corequisite: READ 300 or equivalent

MUAP 1229
Woodwinds - Clarinet
Pre/Corequisite: READ 300 or equivalent
Corequisite: MUEN 1123, MUEN 2123, MUEN 1125, MUEN 2125, MUEN 1135, or MUEN 1235 (must select one or more)

MUAP 1230**Woodwinds - Clarinet**

Pre/Corequisite: READ 300 or equivalent
 Corequisite: MUEN 1123, MUEN 2123, MUEN 1125, MUEN 2125, MUEN 1135, or MUEN 1235 (must select one or more)

MUAP 1231**Clarinet - Freshman Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 1232**Clarinet - Freshman Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 1233**Woodwinds - Saxophone**

Pre/Corequisite: READ 300 or equivalent
 Corequisite: MUEN 1123, MUEN 2123, MUEN 1125, MUEN 2125, MUEN 1135, or MUEN 1235 (must select one or more)

MUAP 1234**Woodwinds - Saxophone**

Pre/Corequisite: READ 300 or equivalent
 Corequisite: MUEN 1123, MUEN 2123, MUEN 1125, MUEN 2125, MUEN 1135, or MUEN 1235 (must select one or more)

MUAP 1235**Saxophone - Freshman Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 1236**Saxophone - Freshman Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 1237**Brass - Trumpet**

Pre/Corequisite: READ 300 or equivalent
 Corequisite: MUEN 1123, MUEN 2123, MUEN 1125, MUEN 2125, MUEN 1135, or MUEN 1235 (must select one or more)

MUAP 1238**Brass - Trumpet**

Pre/Corequisite: READ 300 or equivalent
 Corequisite: MUEN 1123, MUEN 2123, MUEN 1125, MUEN 2125, MUEN 1135, or MUEN 1235 (must select one or more)

MUAP 1239**Trumpet - Freshman Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 1240**Trumpet - Freshman Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 1241**Brass - French Horn**

Pre/Corequisite: READ 300 or equivalent
 Corequisite: MUEN 1123, MUEN 2123, MUEN 1125, MUEN 2125, MUEN 1135, or MUEN 1235 (must select one or more)

MUAP 1242**Brass - French Horn**

Pre/Corequisite: READ 300 or equivalent
 Corequisite: MUEN 1123, MUEN 2123, MUEN 1125, MUEN 2125, MUEN 1135, or MUEN 1235 (must select one or more)

MUAP 1243**French Horn - Freshman Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 1244**French Horn - Freshman Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 1245**Brass - Trombone**

Pre/Corequisite: READ 300 or equivalent
 Corequisite: MUEN 1123, MUEN 2123, MUEN 1125, MUEN 2125, MUEN 1135, or MUEN 1235 (must select one or more)

MUAP 1246**Brass - Trombone**

Pre/Corequisite: READ 300 or equivalent
 Corequisite: MUEN 1123, MUEN 2123, MUEN 1125, MUEN 2125, MUEN 1135, or MUEN 1235 (must select one or more)

MUAP 1247**Trombone - Freshman Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 1248**Trombone - Freshman Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 1253**Brass - Tuba**

Pre/Corequisite: READ 300 or equivalent
 Corequisite: MUEN 1123, MUEN 2123, MUEN 1125, MUEN 2125, MUEN 1135, or MUEN 1235 (must select one or more)

MUAP 1254**Brass - Tuba**

Pre/Corequisite: READ 300 or equivalent
 Corequisite: MUEN 1123, MUEN 2123, MUEN 1125, MUEN 2125, MUEN 1135, or MUEN 1235 (must select one or more)

MUAP 1255**Tuba - Freshman Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 1256**Tuba - Freshman Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 1257**Percussion**

Pre/Corequisite: READ 300 or equivalent
 Corequisite: MUEN 1123, MUEN 2123, MUEN 1125, MUEN 2125, MUEN 1135, or MUEN 1235 (must select one or more)

MUAP 1258**Percussion**

Pre/Corequisite: READ 300 or equivalent
 Corequisite: MUEN 1123, MUEN 2123, MUEN 1125, MUEN 2125, MUEN 1135, or MUEN 1235 (must select one or more)

MUAP 1259**Percussion - Freshman Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 1260**Percussion - Freshman Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 1261**Strings - Classical Guitar**

Pre/Corequisite: READ 300 or equivalent
 Corequisite: MUEN 1137

MUAP 1262**Strings - Classical Guitar**

Pre/Corequisite: READ 300 or equivalent
 Corequisite: MUEN 1137

MUAP 1263**Classical Guitar - Freshman Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 1264**Classical Guitar - Freshman Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 1265**Organ**

Pre/Corequisite: READ 300 or equivalent

MUAP 1266**Organ**

Pre/Corequisite: READ 300 or equivalent

MUAP 1267**Organ - Freshman Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 1268**Organ - Freshman Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 1269**Piano**

Pre/Corequisite: READ 300 or equivalent
 Corequisite: MUEN 1141, MUEN 2142, MUEN 1142, MUEN 2142, MUEN 1152, MUEN 1135, or MUEN 2135 (must select one or more)

MUAP 1270**Piano**

Pre/Corequisite: READ 300 or equivalent
 Corequisite: MUEN 1141, MUEN 2142, MUEN 1142, MUEN 2142, MUEN 1152, MUEN 1135, or MUEN 2135 (must select one or more)

MUAP 1271**Piano - Freshman Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 1272**Piano - Freshman Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 1277**Harp**

Pre/Corequisite: READ 300 or equivalent

MUAP 1278**Harp**

Pre/Corequisite: READ 300 or equivalent

MUAP 1279**Harp - Freshman Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 1280**Harp - Freshman Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 1281**Voice**

Pre/Corequisite: READ 300 or equivalent
 Corequisite: MUEN 1141, MUEN 2141, MUEN 1142, MUEN 2142, or MUEN 1152 (must select one or more)

MUAP 1282**Voice**

Pre/Corequisite: READ 300 or equivalent
 Corequisite: MUEN 1141, MUEN 2141, MUEN 1142, MUEN 2142, or MUEN 1152 (must select one or more)

MUAP 1283**Voice - Freshman Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 1284**Voice - Freshman Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 1287**Strings - Bass Guitar**

Pre/Corequisite: READ 300 or equivalent
 Corequisite: MUEN 1137

MUAP 1288**Strings - Bass Guitar**

Pre/Corequisite: READ 300 or equivalent
 Corequisite: MUEN 1137

MUAP 1289**Bass Guitar - Freshman Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 1290**Bass Guitar - Freshman Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 1291**Strings - Electric Guitar**

Pre/Corequisite: READ 300 or equivalent
 Corequisite: MUEN 1137

MUAP 1292**Strings - Electric Guitar**

Pre/Corequisite: READ 300 or equivalent
 Corequisite: MUEN 1137

MUAP 1293**Electric Guitar - Freshman Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 1294**Electric Guitar - Freshman Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 2101**Strings - Violin**

Pre/Corequisite: READ 300 or equivalent

MUAP 2102**Strings - Violin**

Pre/Corequisite: READ 300 or equivalent

MUAP 2105**Strings - Viola**

Pre/Corequisite: READ 300 or equivalent

MUAP 2106**Strings - Viola**

Pre/Corequisite: READ 300 or equivalent

MUAP 2109**Strings - Cello**

Pre/Corequisite: READ 300 or equivalent

MUAP 2110**Strings - Cello**

Pre/Corequisite: READ 300 or equivalent

MUAP 2113**Strings - String Bass**

Pre/Corequisite: READ 300 or equivalent

MUAP 2114**Strings - String Bass**

Pre/Corequisite: READ 300 or equivalent

MUAP 2117**Woodwinds - Flute**

Pre/Corequisite: READ 300 or equivalent

MUAP 2118**Woodwinds - Flute**

Pre/Corequisite: READ 300 or equivalent

MUAP 2121**Woodwinds - Oboe**

Pre/Corequisite: READ 300 or equivalent

MUAP 2122**Woodwinds - Oboe**

Pre/Corequisite: READ 300 or equivalent

MUAP 2125**Woodwinds - Bassoon**

Pre/Corequisite: READ 300 or equivalent

MUAP 2126**Woodwinds - Bassoon**

Pre/Corequisite: READ 300 or equivalent

MUAP 2129**Woodwinds - Clarinet**

Pre/Corequisite: READ 300 or equivalent

MUAP 2130**Woodwinds - Clarinet**

Pre/Corequisite: READ 300 or equivalent

MUAP 2133**Woodwinds - Saxophone**

Pre/Corequisite: READ 300 or equivalent

MUAP 2134**Woodwinds - Saxophone**

Pre/Corequisite: READ 300 or equivalent

MUAP 2137**Brass - Trumpet**

Pre/Corequisite: READ 300 or equivalent

MUAP 2138**Brass - Trumpet**

Pre/Corequisite: READ 300 or equivalent

MUAP 2141**Brass - French Horn**

Pre/Corequisite: READ 300 or equivalent

MUAP 2142**Brass - French Horn**

Pre/Corequisite: READ 300 or equivalent

MUAP 2145**Brass - Trombone**

Pre/Corequisite: READ 300 or equivalent

MUAP 2146**Brass - Trombone**

Pre/Corequisite: READ 300 or equivalent

MUAP 2153**Brass - Tuba**

Pre/Corequisite: READ 300 or equivalent

MUAP 2154**Brass - Tuba**

Pre/Corequisite: READ 300 or equivalent

MUAP 2157**Percussion**

Pre/Corequisite: READ 300 or equivalent

MUAP 2158**Percussion**

Pre/Corequisite: READ 300 or equivalent

MUAP 2161**Strings - Classical Guitar**

Pre/Corequisite: READ 300 or equivalent

MUAP 2162**Strings - Classical Guitar**

Pre/Corequisite: READ 300 or equivalent

MUAP 2165**Organ**

Pre/Corequisite: READ 300 or equivalent

MUAP 2166**Organ**

Pre/Corequisite: READ 300 or equivalent

MUAP 2169**Piano**

Pre/Corequisite: READ 300 or equivalent

MUAP 2170**Piano**

Pre/Corequisite: READ 300 or equivalent

MUAP 2177**Harp**

Pre/Corequisite: READ 300 or equivalent

MUAP 2178**Harp**

Pre/Corequisite: READ 300 or equivalent

MUAP 2181**Voice**

Pre/Corequisite: READ 300 or equivalent

MUAP 2182**Voice**

Pre/Corequisite: READ 300 or equivalent

MUAP 2187**Strings - Bass Guitar**

Pre/Corequisite: READ 300 or equivalent

MUAP 2188**Strings - Bass Guitar**

Pre/Corequisite: READ 300 or equivalent

MUAP 2191**Strings - Electric Guitar**

Pre/Corequisite: READ 300 or equivalent

MUAP 2192**Strings - Electric Guitar**

Pre/Corequisite: READ 300 or equivalent

MUAP 2201**Strings - Violin**

Pre/Corequisite: READ 300 or equivalent
 Corequisite: MUEN 1123 or MUEN 2123

MUAP 2202**Strings - Violin**

Pre/Corequisite: READ 300 or equivalent
Corequisite: MUEN 1123 or MUEN 2123

MUAP 2203 Ω**Violin - Sophomore Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 2204 Ω**Violin - Sophomore Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 2205**Strings - Viola**

Pre/Corequisite: READ 300 or equivalent
Corequisite: MUEN 1123 or MUEN 2123

MUAP 2206**Strings - Viola**

Pre/Corequisite: READ 300 or equivalent
Corequisite: MUEN 1123 or MUEN 2123

MUAP 2207 Ω**Viola - Sophomore Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 2208 Ω**Viola - Sophomore Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 2209**Strings - Cello**

Pre/Corequisite: READ 300 or equivalent
Corequisite: MUEN 1123 or MUEN 2123

MUAP 2210**Strings - Cello**

Pre/Corequisite: READ 300 or equivalent
Corequisite: MUEN 1123 or MUEN 2123

MUAP 2211 Ω**Cello - Sophomore Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 2212 Ω**Cello - Sophomore Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 2213**Strings - String Bass**

Pre/Corequisite: READ 300 or equivalent
Corequisite: MUEN 1123 or MUEN 2123

MUAP 2214**Strings - String Bass**

Pre/Corequisite: READ 300 or equivalent
Corequisite: MUEN 1123 or MUEN 2123

MUAP 2215 Ω**String Bass - Sophomore Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 2216 Ω**String Bass - Sophomore Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 2217**Woodwinds - Flute**

Pre/Corequisite: READ 300 or equivalent
Corequisite: MUEN 1123, MUEN 2123, MUEN 1125, MUEN 2125, MUEN 1135, or MUEN 1235 (must select one or more)

MUAP 2218**Woodwinds - Flute**

Pre/Corequisite: READ 300 or equivalent
Corequisite: MUEN 1123, MUEN 2123, MUEN 1125, MUEN 2125, MUEN 1135, or MUEN 1235 (must select one or more)

MUAP 2219 Ω**Flute - Sophomore Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 2220 Ω**Flute - Sophomore Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 2221**Woodwinds - Oboe**

Pre/Corequisite: READ 300 or equivalent
Corequisite: MUEN 1123, MUEN 2123, MUEN 1125, MUEN 2125, MUEN 1135, or MUEN 1235 (must select one or more)

MUAP 2222**Woodwinds - Oboe**

Pre/Corequisite: READ 300 or equivalent
Corequisite: MUEN 1123, MUEN 2123, MUEN 1125, MUEN 2125, MUEN 1135, or MUEN 1235 (must select one or more)

MUAP 2223 Ω**Oboe - Sophomore Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 2224 Ω**Oboe - Sophomore Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 2225**Woodwinds - Bassoon**

Pre/Corequisite: READ 300 or equivalent
Corequisite: MUEN 1123, MUEN 2123, MUEN 1125, MUEN 2125, MUEN 1135, or MUEN 1235 (must select one or more)

MUAP 2226**Woodwinds - Bassoon**

Pre/Corequisite: READ 300 or equivalent
Corequisite: MUEN 1123, MUEN 2123, MUEN 1125, MUEN 2125, MUEN 1135, or MUEN 1235 (must select one or more)

MUAP 2227 Ω**Bassoon - Sophomore Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 2228 Ω**Bassoon - Sophomore Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 2229**Woodwinds - Clarinet**

Pre/Corequisite: READ 300 or equivalent
Corequisite: MUEN 1123, MUEN 2123, MUEN 1125, MUEN 2125, MUEN 1135, or MUEN 1235 (must select one or more)

MUAP 2230**Woodwinds - Clarinet**

Pre/Corequisite: READ 300 or equivalent
Corequisite: MUEN 1123, MUEN 2123, MUEN 1125, MUEN 2125, MUEN 1135, or MUEN 1235 (must select one or more)

MUAP 2231 Ω**Clarinet - Sophomore Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 2232 Ω**Clarinet - Sophomore Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 2233**Woodwinds - Saxophone**

Pre/Corequisite: READ 300 or equivalent
Corequisite: MUEN 1123, MUEN 2123, MUEN 1125, MUEN 2125, MUEN 1135, or MUEN 1235 (must select one or more)

MUAP 2234**Woodwinds - Saxophone**

Pre/Corequisite: READ 300 or equivalent
Corequisite: MUEN 1123, MUEN 2123, MUEN 1125, MUEN 2125, MUEN 1135, or MUEN 1235 (must select one or more)

MUAP 2235 Ω**Saxophone - Sophomore Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 2236 Ω**Saxophone - Sophomore Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 2237**Brass - Trumpet**

Pre/Corequisite: READ 300 or equivalent
Corequisite: MUEN 1123, MUEN 2123, MUEN 1125, MUEN 2125, MUEN 1135, or MUEN 1235 (must select one or more)

MUAP 2238**Brass - Trumpet**

Pre/Corequisite: READ 300 or equivalent
Corequisite: MUEN 1123, MUEN 2123, MUEN 1125, MUEN 2125, MUEN 1135, or MUEN 1235 (must select one or more)

MUAP 2239 Ω**Trumpet - Sophomore Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 2240 Ω**Trumpet - Sophomore Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 2241**Brass - French Horn**

Pre/Corequisite: READ 300 or equivalent
Corequisite: MUEN 1123, MUEN 2123, MUEN 1125, MUEN 2125, MUEN 1135, or MUEN 1235 (must select one or more)

MUAP 2242**Brass - French Horn**

Pre/Corequisite: READ 300 or equivalent
Corequisite: MUEN 1123, MUEN 2123, MUEN 1125, MUEN 2125, MUEN 1135, or MUEN 1235 (must select one or more)

MUAP 2243 Ω**French Horn - Sophomore Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 2244 Ω**French Horn - Sophomore Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 2245**Brass - Trombone**

Pre/Corequisite: READ 300 or equivalent
 Corequisite: MUEN 1123, MUEN 2123, MUEN 1125, MUEN 2125, MUEN 1135, or MUEN 1235 (must select one or more)

MUAP 2246**Brass - Trombone**

Pre/Corequisite: READ 300 or equivalent
 Corequisite: MUEN 1123, MUEN 2123, MUEN 1125, MUEN 2125, MUEN 1135, or MUEN 1235 (must select one or more)

MUAP 2247 Ω**Trombone - Sophomore Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 2248 Ω**Trombone - Sophomore Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 2253**Brass - Tuba**

Pre/Corequisite: READ 300 or equivalent
 Corequisite: MUEN 1123, MUEN 2123, MUEN 1125, MUEN 2125, MUEN 1135, or MUEN 1235 (must select one or more)

MUAP 2254**Brass - Tuba**

Pre/Corequisite: READ 300 or equivalent
 Corequisite: MUEN 1123, MUEN 2123, MUEN 1125, MUEN 2125, MUEN 1135, or MUEN 1235 (must select one or more)

MUAP 2255 Ω**Tuba - Sophomore Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 2256 Ω**Tuba - Sophomore Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 2257**Percussion**

Pre/Corequisite: READ 300 or equivalent
 Corequisite: MUEN 1123, MUEN 2123, MUEN 1125, MUEN 2125, MUEN 1135, or MUEN 1235 (must select one or more)

MUAP 2258**Percussion**

Pre/Corequisite: READ 300 or equivalent
 Corequisite: MUEN 1123, MUEN 2123, MUEN 1125, MUEN 2125, MUEN 1135, or MUEN 1235 (must select one or more)

MUAP 2259 Ω**Percussion - Sophomore Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 2260 Ω**Percussion - Sophomore Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 2261**Strings - Classical Guitar**

Pre/Corequisite: READ 300 or equivalent
 Corequisite: MUEN 1137

MUAP 2262**Strings - Classical Guitar**

Pre/Corequisite: READ 300 or equivalent
 Corequisite: MUEN 1137

MUAP 2263 Ω**Classical Guitar - Sophomore Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 2264 Ω**Classical Guitar - Sophomore Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 2265**Organ**

Pre/Corequisite: READ 300 or equivalent

MUAP 2266**Organ**

Pre/Corequisite: READ 300 or equivalent

MUAP 2267 Ω**Organ - Sophomore Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 2268 Ω**Organ - Sophomore Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 2269**Piano**

Pre/Corequisite: READ 300 or equivalent
 Corequisite: MUEN 1141, MUEN 2142, MUEN 1142, MUEN 2142, MUEN 1152, MUEN 1135, or MUEN 2135 (must select one or more)

MUAP 2270**Piano**

Pre/Corequisite: READ 300 or equivalent
 Corequisite: MUEN 1141, MUEN 2142, MUEN 1142, MUEN 2142, MUEN 1152, MUEN 1135, or MUEN 2135 (must select one or more)

MUAP 2271 Ω**Piano - Sophomore Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 2272 Ω**Piano - Sophomore Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 2277**Harp**

Pre/Corequisite: READ 300 or equivalent
 Corequisite: MUEN 1123 or MUEN 2123

MUAP 2278**Harp**

Pre/Corequisite: READ 300 or equivalent
 Corequisite: MUEN 1123 or MUEN 2123

MUAP 2279 Ω**Harp - Sophomore Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 2280 Ω**Harp - Sophomore Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 2281**Voice**

Pre/Corequisite: READ 300 or equivalent
 Corequisite: MUEN 1141, MUEN 2141, MUEN 1142, MUEN 2142, or MUEN 1152 (must select one or more)

MUAP 2282**Voice**

Pre/Corequisite: READ 300 or equivalent
 Corequisite: MUEN 1141, MUEN 2141, MUEN 1142, MUEN 2142, or MUEN 1152 (must select one or more)

MUAP 2283 Ω**Voice - Sophomore Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 2284 Ω**Voice - Sophomore Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 2287**Strings - Bass Guitar**

Pre/Corequisite: READ 300 or equivalent
 Corequisite: MUEN 1137

MUAP 2288**Strings - Bass Guitar**

Pre/Corequisite: READ 300 or equivalent
 Corequisite: MUEN 1137

MUAP 2289 Ω**Bass Guitar - Sophomore Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 2290 Ω**Bass Guitar - Sophomore Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 2291**Strings - Electric Guitar**

Pre/Corequisite: READ 300 or equivalent
 Corequisite: MUEN 1137

MUAP 2292**Strings - Electric Guitar**

Pre/Corequisite: READ 300 or equivalent
 Corequisite: MUEN 1137

MUAP 2293 Ω**Electric Guitar - Sophomore Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 2294 Ω**Electric Guitar - Sophomore Major**

Pre/Corequisite: READ 300 or equivalent

MUAP 2299**Music Conducting**

Private study of strings, woodwinds, brass, percussion, guitar, organ, piano, voice, harp, and music conducting is offered for credit.
 Lecture Hrs = 1, Lab Hrs = 1
 Pre/Corequisite: READ 300 or equivalent

MUEN 1123**Baytown Symphony Orchestra**

Open to all Lee College students. Required of instrumental majors when feasible. Study and performance of standard orchestral literature. One three-hour rehearsal plus one hour of section rehearsal and individual assistance per week. Admission by audition or instructor's consent. May be repeated for credit.
 Lecture Hrs = 3, Lab Hrs = 1
 Pre/Corequisite: READ 300 or equivalent

MUEN 1125**Concert Band**

An instrumental class, organized for the study and performance of wind ensemble and concert band, including literature that is both historical and contemporary. Admission by audition or instructor's consent. May be repeated for credit.
 Lecture Hrs = 3, Lab Hrs = 1
 Pre/Corequisite: READ 300 or equivalent

MUEN 1133**Woodwind Ensemble**

Open to all Lee College students. Study of literature for small woodwind ensembles (4 or more students). Admission by audition or instructor's consent.

Lecture Hrs = 1, Lab Hrs = 1

Pre/Corequisite: READ 300 or equivalent

MUEN 1134**Brass Ensemble**

Open to all Lee College students. Study of literature for small brass ensembles (4 or more students). Admission by audition or instructor's consent.

Lecture Hrs = 1, Lab Hrs = 1

Pre/Corequisite: READ 300 or equivalent

MUEN 1135**Jazz Ensemble**

Practice and performance of various jazz idioms. Admissions by audition or instructor's consent. May be repeated for credit.

Lecture Hrs = 2, Lab Hrs = 2

Pre/Corequisite: READ 300 or equivalent

MUEN 1137**Guitar Ensemble**

Study and performance of guitar ensemble literature (4 or more students). Admission by audition or instructor's consent. May be repeated for credit.

Lecture Hrs = 1, Lab Hrs = 1

Pre/Corequisite: READ 300 or equivalent

MUEN 1138**Percussion Ensemble**

Ensemble experience presenting balance between basic percussive techniques used individually and in sectional performance requirements, (4 or more students). Admission by audition or instructor's consent.

Lecture Hrs = 1, Lab Hrs = 1

Pre/Corequisite: READ 300 or equivalent

MUEN 1141**Lee College Concert Choir**

Open to all students of Lee College. Study and performance of various types and styles of choral literature. Concerts given on and off campus each semester. Admission by audition or instructor's consent. May be repeated for credit.

Lecture Hrs = 3, Lab Hrs = 1

Pre/Corequisite: READ 300 or equivalent

MUEN 1142**Baytown Community Chorus**

Open to all Lee College students. Study and performance of major choral literature. One four-hour class per week. Admission by audition or instructor's consent. May be repeated for credit.

Lecture Hrs = 3, Lab Hrs = 1

Pre/Corequisite: READ 300 or equivalent

MUEN 1152**Chamber Choir**

A vocal ensemble class organized for the study and performance of madrigal literature primarily from the 16th and 17th centuries. May be repeated for credit.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: READ 300 or equivalent

MUEN 1153

(Continuation of MUEN 1152). The study of vocal chamber ensemble class organized for the study and performance of madrigal literature primarily from the 16th and 17th centuries.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: MUEN 1152

MUEN 1154**Swing Choir**

The study of swing, popular and jazz vocal idioms in a small vocal chamber ensemble for the study and performance of contemporary literature.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 300 or equivalent

MUEN 2123**Baytown Symphony Orchestra**

Open to all Lee College students. Required of instrumental majors when feasible. Study and performance of standard orchestral literature. One three-hour rehearsal plus one hour of section rehearsal and individual assistance per week. Admission by audition or instructor's consent. May be repeated for credit.

Lecture Hrs = 3, Lab Hrs = 1

Pre/Corequisite: READ 300 or equivalent

MUEN 2125**Concert Band**

An instrumental class, organized for the study and performance of wind ensemble and concert band, including literature that is both historical and contemporary. Admission by audition or instructor's consent. May be repeated for credit.

Lecture Hrs = 3, Lab Hrs = 1

Pre/Corequisite: READ 300 or equivalent

MUEN 2133**Woodwind Ensemble**

Open to all Lee College students. Study of literature for small woodwind ensembles (4 or more students). Admission by audition or instructor's consent. May be repeated for credit.

Lecture Hrs = 1, Lab Hrs = 1

Pre/Corequisite: READ 300 or equivalent

MUEN 2134**Brass Ensemble**

Open to all Lee College students. Study of literature for small brass ensembles (4 or more students). Admission by audition or instructor's consent. May be repeated for credit.

Lecture Hrs = 1, Lab Hrs = 1

Pre/Corequisite: READ 300 or equivalent

MUEN 2135**Jazz Ensemble**

Practice and performance of various jazz idioms. Admission by audition or instructor's consent. May be repeated for credit.

Lecture Hrs = 2, Lab Hrs = 2

Pre/Corequisite: READ 300 or equivalent

MUEN 2138**Percussion Ensemble**

Ensemble experience presenting balance between basic percussive techniques used individually and in sectional performance requirements, (4 or more students). Admission by audition or instructor's consent. May be repeated for credit.

Lecture Hrs = 1, Lab Hrs = 1

Pre/Corequisite: READ 300 or equivalent

MUEN 2141**Lee College Concert Choir**

Open to all students of Lee College. Study and performance of various types and styles of choral literature. Concerts given on and off campus each semester. Admission by audition or instructor's consent. May be repeated for credit.

Lecture Hrs = 3, Lab Hrs = 1

Pre/Corequisite: READ 300 or equivalent

MUEN 2142**Baytown Community Chorus**

Open to all Lee College students. Study and performance of major choral literature. One four-hour class per week. Admission by audition or instructor's consent. May be repeated for credit.

Lecture Hrs = 3, Lab Hrs = 1

Pre/Corequisite: READ 300 or equivalent

MUSB 1305**Survey of the Music Business**

An overview of the music industry including song-writing, live performance, the record industry, music merchandising, contracts and licenses, and career opportunities. Upon completion of course, students will be able to explain basic music industry principles including copyright, publishing, and performance rights; explain the business of live performance to include artist management, unions and guilds, entertainment agencies, venues, and concessions; identify the record industry systems from record producers, recording studios, manufacturing production, and distribution companies; summarize the use of contracts and licenses in the music industry; and discuss career opportunities in the music industry.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: READ 300, ESOL 310, or equivalent

MUSB 2350**Commercial Music Project**

The primary objective of this course is to apply the skills learned in other Commercial Music courses. This is a hands-on project oriented course aimed at helping students create a portfolio of their work. Artists and their music will be the focus. Each student must design and complete his/her own project with instructor approval.

Lecture Hrs = 1, Lab Hrs = 4

Pre/Corequisite: MUSC 2448 and READ 300, ESOL 310, or equivalent

MUSC 1323**Audio Electronics**

Basic concepts in electricity, Ohm's Law, circuit analysis and troubleshooting audio problems. Includes soldering techniques and equipment maintenance.

Lecture Hrs. = 2, Lab Hrs. = 2

Pre/Corequisite: READ 300, ESOL 310, or equivalent and MATH 320 or equivalent

MUSC 1331**MIDI I**

Exploration of the history and evolution of Musical Instrument Digital Interface (MIDI) systems and applications. Includes the MIDI language and applications in the studio environment using software-based sequencing programs.

Lecture Hrs. = 2, Lab Hrs. = 3

Pre/Corequisite: MUSI 1301 or 1311 and READ 300, ESOL 310, or equivalent

MUSC 1335**Commercial Music Software**

Specialized training in commercial music software applications.

Lecture Hrs. = 2, Lab Hrs. = 4

Prerequisite: MUSC 1427

Pre/Corequisite: READ 300, ESOL 310, or equivalent

MUSC 1396**Special Topics in Recording Arts Technology/Technician**

Topics address recently identified current events, skills, knowledges, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course was designed to be repeated multiple times to improve student proficiency.

Lecture Hrs. = 2, Lab Hrs. = 2

Prerequisite: MUSC 1427

Pre/Corequisite: READ 300, ESOL 310, or equivalent

MUSC 1405**Live Sound I**

An overview of the field of live sound. Includes principles of live sound and the theory and interconnection of the components of a sound reinforcement system.

Lecture Hrs. = 2, Lab Hrs. = 6

Prerequisite: READ 301 or ESOL 311 or equivalent

MUSC 1427**Audio Engineering I**

Overview of the recording studio. Includes basic studio electronics and acoustic principles, waveform properties, microphone concepts and miking techniques, studio set up and signal flow, recording console theory, signal processing concepts, recorder principles and operation, and an overview of mixing and editing.

Lecture Hrs. = 3, Lab Hrs. = 2

Pre/Corequisite: READ 300, ESOL 310, or equivalent

MUSC 2355**MIDI II**

Advanced MIDI concepts and techniques. Includes synchronizing MIDI and audio devices and advanced sequencer operation.

Lecture Hrs. = 2, Lab Hrs. = 4

Prerequisite: MUSC 1331, MUSC 1427

Pre/Corequisite: READ 300, ESOL 310, or equivalent

MUSC 2386**Internship - Recording Arts Technology/Technician**

Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student.

Lecture Hrs. = 0, Lab Hrs. = 0, External Hrs. = 11

Prerequisite: MUSC 2447, MUSB 1305

Pre/Corequisite: READ 300, ESOL 310, or equivalent

MUSC 2402**Sound Systems Technician**

Technical and non-technical skills necessary to perform duties of a sound systems technician. Includes business and customer relationships, advanced signal flow, system packaging, system integration, system protection/maintenance, electrical distribution for audio systems, and rigging from a sound systems technician's perspective.

Lecture Hrs. = 3, Lab Hrs. = 2

Pre/Corequisite: MUSC 1427 and READ 301 or ESOL 311 or equivalent

MUSC 2403**Live Sound II**

Overview of stage monitor systems. Includes monitor systems set-up and operation and stage management. Also covers interactivity between sound management, performance quality, and audience experience.

Lecture Hrs. 2, Lab Hrs. = 6

Prerequisite: MUSC 1405 and READ 301 or ESOL 311 or equivalent

MUSC 2427**Audio Engineering II**

Implementation of the recording process, microphones, audio console, multitrack recorder, and signal processing devices.

Lecture Hrs. = 2, Lab Hrs. = 6

Prerequisite: MUSC 1427

Pre/Corequisite: READ 300, ESOL 310, or equivalent

MUSC 2447**Audio Engineering III**

Advanced practice of procedures and techniques in recording and manipulating audio. Includes digital audio editing, advanced recording techniques, and advanced engineering projects.

Lecture Hrs. = 2, Lab Hrs. = 6

Prerequisite: MUSC 2427, MUSC 1331, MUSC 1335

Pre/Corequisite: READ 300, ESOL 310, or equivalent

MUSC 2448**Audio Engineering IV**

The role of the producer. Includes recording, mixing, arranging, analyzing projects, session planning, communication, budgeting, business aspects, technical considerations, and music markets. Covers advanced techniques in recording, mixing, and editing.

Lecture Hrs. = 2, Lab Hrs. = 6

Prerequisite: MUSC 2447, 2355

Pre/Corequisite: READ 300, ESOL 310, or equivalent

MUSC 2453**Live Sound III**

Advanced concepts of live sound engineering for front-of-house mix. Includes techniques required to build and maintain a live sound mix for an audience.

Lecture Hrs. = 2, Lab Hrs. = 4

Prerequisite: MUSC 2403 and READ 301 or ESOL 311 or equivalent

MUSC 2459**Sound System Optimization**

System optimization. Includes related acoustic principles and system alignment procedures. Emphasizes system equalization, time/phase alignment, subsystem integration, loudspeaker management systems, ear training, and industry-standard acoustic analysis software.

Lecture Hrs. = 3, Lab Hrs. = 2

Prerequisite: MUSC 2402 and READ 301 or equivalent

MUSI 1116**Elementary Sight Singing & Ear Training I**

Singing tonal music in treble, bass, alto, and tenor clefs. Aural study, including dictation, of rhythm, melody, and diatonic harmony. Open to other students with instructor's consent. Development of aural and sight-singing skills through study of scales, musical intervals, varying chord structures, and rhythms. (Fall semester only). Tutorial lab required.

Lecture Hrs = 1, Lab Hrs = 2

Pre/Corequisite: READ 300 or equivalent

Corequisite: MUSI 1311

MUSI 1117**Elementary Sight Singing & Ear Training II**

Singing tonal music in treble, bass, alto, and tenor clefs. Aural study, including dictation, of rhythm, melody, and diatonic harmony. Open to other students with instructor's consent. Development of aural and sight-singing skills through study of scales, musical intervals, varying chord structures, and rhythms. (Spring semester only). Tutorial lab required.

Lecture Hrs = 1, Lab Hrs = 2

Prerequisite: MUSI 1116, READ 300 or equivalent

Corequisite: MUSI 1312

MUSI 1181**Class Piano**

Open to all students, including music majors preparing for the proficiency examination. Guidelines for this course and subsequent levels of the course may require that the student register instead for MUAP applied lessons in piano. Additional information may be obtained from the instructor. Degree seeking students are required to enroll in piano study until proficiency requirements are met.

Lecture Hrs = 0, Lab Hrs = 2

Pre/Corequisite: READ 300 or equivalent

MUSI 1182**Class Piano**

Open to all students, including music majors preparing for the proficiency examination. Guidelines for this course and subsequent levels of the course may require that the student register instead for MUAP applied lessons in piano. Additional information may be obtained from the instructor. Degree seeking students are required to enroll in piano study until proficiency requirements are met.

Lecture Hrs = 0, Lab Hrs = 2

Pre/Corequisite: READ 300 or equivalent

MUSI 1183**Beginning Voice Class**

Open to all Lee College students. Study of correct vocal production: posture, vowels, consonants, dynamics, phrasing and other information pertinent to the subject.

Lecture Hrs = 0, Lab Hrs = 2

Pre/Corequisite: READ 300 or equivalent

MUSI 1184**Intermediate Voice Class**

Open to all Lee College students. Continued development of physical and musical aspects of singing at the intermediate level.

Lecture Hrs = 0, Lab Hrs = 2

Pre/Corequisite: READ 300 or equivalent

MUSI 1192**Guitar Class**

For beginning guitar students. Study of basic guitar techniques, chords and repertoire.

Lecture Hrs = 0, Lab Hrs = 2

Pre/Corequisite: READ 300 or equivalent

MUSI 1193**Guitar Class**

For beginning guitar students. Study of basic guitar techniques, chords and repertoire.

Lecture Hrs = 0, Lab Hrs = 2

Pre/Corequisite: READ 300 or equivalent

MUSI 1263**Jazz Improvisation**

Class groups discussing topics in the area of jazz with special emphasis on its development and the contributions jazz has made to American culture. Improvisation on the students' instruments is an integral part of the course. May be repeated for credit.

Lecture Hrs = 1, Lab Hrs = 2

Pre/Corequisite: READ 300 or equivalent

MUSI 1301**Fundamentals of Music**

Open to all students at Lee College. Designed to prepare students for freshman study in music theory or to familiarize the non-music major with the meaning of musical notation and the harmonic, melodic, and rhythmic structure of music.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: READ 300 or equivalent

MUSI 1306**Music Appreciation**

A music listening course designed for the non-music major. Students explore music through its basic elements, forms, styles, and major composers. Music majors should enroll in MUSI 1307.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: READ 300 or equivalent

MUSI 1307**Survey of Music Literature**

Open to all students and required of music majors and minors. It includes a study of various masterpieces in music, a study of the major composers, a study of stylistic characteristics of historical eras. Included also will be an introduction to score reading and music research techniques. Concert attendance is required. Performance/Lecture Series attendance is required. (Offered SPRING semester only).

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: READ 300 or equivalent

MUSI 1308**Music Literature I - Church Music**

Survey of the principal musical forms and cultural periods as illustrated in the literature of major composers in the renaissance, baroque, and classical periods, specifically applicable to the study of sacred music, including the history and use of hymnody, introduction to the lectionary, score study, and conducting, rehearsal planning and techniques and general stylistic practices.

Lecture Hrs = 2, Lab Hrs = 2

Pre/Corequisite: READ 300 or equivalent

MUSI 1309**Music Lit. II - Church Music**

Survey of the principal musical forms and cultural periods as illustrated in the literature of major composers in the romantic, 20th century, and modern periods, specifically applicable to the continued study of sacred music, including the history and use of hymnody, introduction to the lectionary, score study, and conducting, rehearsal planning and techniques, and general stylistic practices.

Lecture Hrs = 2, Lab Hrs = 2

Pre/Corequisite: READ 300 or equivalent and MUSI 1308

MUSI 1310**Contemporary American Music**

General survey of various styles of American Music. Topics may include jazz, ragtime, folk, rock, and contemporary art music.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: READ 300 or equivalent

MUSI 1311**Music Theory I**

Theoretical analysis and writing of tonal melody using diatonic harmony. Analysis and writing of small compositional forms. Open to all students with consent of instructor. (Offered Fall semester only). Tutorial lab required.

Lecture Hrs = 3, Lab Hrs = 1

Pre/Corequisite: READ 300 or equivalent

Corequisite: MUSI 1116

MUSI 1312**Music Theory II**

Theoretical analysis and writing of tonal melody using diatonic harmony. Introduction to secondary dominant chords and modulation to closely related keys. Analysis and writing of small composition forms. Open to all students with consent of instructor. Tutorial lab required. (Offered Spring semester only).

Lecture Hrs = 3, Lab Hrs = 1

Prerequisite: MUSI 1311 and READ 300 or equivalent

Corequisite: MUSI 1117

MUSI 2116**Advanced Sight Singing and Ear Training I**

Singing more difficult tonal music including modal, ethnic and 20th century materials. Aural study, including dictation, or more complex rhythm, melody, chromatic harmony and extended tertian structures. Transfer students admitted by examination. Open to all students with consent of instructor. Tutorial lab required. (Offered Fall semester only).

Lecture Hrs = 1, Lab Hrs = 2

Prerequisite: MUSI 1117, READ 300 or equivalent

Corequisite: MUSI 2311

MUSI 2117**Advanced Sight Singing and Ear Training II**

Singing more difficult tonal music including modal, ethnic and 20th century materials. Aural study, including dictation, or more complex rhythm, melody, chromatic harmony and extended tertian structures. Transfer students admitted by examination. Open to all students with consent of instructor. Tutorial lab required. (Offered Spring semester only).

Lecture Hrs = 1, Lab Hrs = 2

Prerequisite: MUSI 2116, READ 300 or equivalent

Corequisite: MUSI 2312

MUSI 2181**Class Piano**

Open to all students, including music majors preparing for the proficiency examination. Guidelines for this course and subsequent levels of the course may require that the student register instead for MUAP applied lessons in piano. Additional information may be obtained from the instructor. Degree seeking students are required to enroll in piano study until proficiency requirements are met.

Lecture Hrs = 0, Lab Hrs = 2

Pre/Corequisite: READ 300 or equivalent

MUSI 2182**Class Piano**

Open to all students, including music majors preparing for the proficiency examination. Guidelines for this course and subsequent levels of the course may require that the student register instead for MUAP applied lessons in piano. Additional information may be obtained from the instructor. Degree seeking students are required to enroll in piano study until proficiency requirements are met.

Lecture Hrs = 0, Lab Hrs = 2

Pre/Corequisite: READ 300 or equivalent

MUSI 2183**Advanced Voice Class**

Concert and recital preparation.

Lecture Hrs = 0, Lab Hrs = 2

Note: Instructor's consent required to register for this course

Prerequisite: READ 300 or equivalent

MUSI 2189**Music Cooperative**

In conjunction with seminars or on-campus instruction, students will study various aspects of music unique to their interests or career objectives. Limited to 1 credit hour per semester. Course can be taken up to three times.

Lecture Hrs = 1, Lab Hrs = 0, External Hrs = 2

Prerequisite: COMM 2324, COMM 2220

MUSI 2311**Music Theory III**

Advanced harmony part writing and keyboard analysis and writing of more advanced tonal harmony including chromaticism and extended tertian structures. Introduction to 20th century compositional procedures and survey of the traditional large forms of composition. Open to all students with consent of instructor. Transfer students admitted by examination. Study of 18th and 19th century harmonic practices, advanced harmonic techniques; complex choral vocabulary; all secondary dominants; leading tone chords and altered chords.

Lecture Hrs = 3, Lab Hrs = 1

Prerequisite: MUSI 1312 and READ 300 or equivalent

Corequisite: MUSI 2116

MUSI 2312**Music Theory IV**

Advanced harmony part writing and keyboard analysis and writing of more advanced tonal harmony including chromaticism and extended tertian structures. Introduction to 20th century compositional procedures and survey of the traditional large forms of composition. Open to all students with consent of instructor. Transfer students admitted by examination. Continued study of 18th and 19th century harmonic practices, advanced harmonic techniques; complex choral vocabulary; altered chords; distant modulations, and introduction to contrapuntal techniques. (Offered SPRING semester Only).

Lecture Hrs = 3, Lab Hrs = 1

Prerequisite: MUSI 2311 and READ 300 or equivalent

Corequisite: MUSI 2117

NDTE 1401**Film Interpretation of Weldments**

A study of radiographic film, including exploration of radiographic basics, interpretation, and causes and effects of discontinuities.

Lecture Hrs = 3, Lab Hrs = 3

Pre/Corequisite: READ 300 or equivalent

NDTE 1410**Liquid Penetrant/Magnetic Particle Testing**

A theoretical study and practical application of the non-destructive testing techniques of penetrant and magnetic particle testing required by quality assurance and test personnel including proper test technique, or combination of techniques and interpretation, evaluation of test results.

Lecture Hrs = 3, Lab Hrs = 3

Pre/Corequisite: READ 300 or equivalent

NDTE 2411**Preparation For Welding Inspection**

General principles of welding inspection including welding processes, terms and definitions, welding discontinuities, duties and responsibilities of inspectors, destructive and nondestructive testing, quality assurance/quality control, welding codes and blueprints, procedures, and case studies. An overview of welding tools and equipment, metallurgy, chemistry, and joint design.

Lecture Hrs = 3, Lab Hrs = 3

Pre/Corequisite: READ 300 or equivalent

OSHT 1301**Introduction to Safety and Health**

An introduction to the basic concepts of safety and health.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: READ 300 or equivalent

OSHT 1309**Physical Hazards Control**

A study of the physical hazards in industry and the methods of workplace design and redesign to control these hazards. Emphasis on the regulation codes and standards associated with the control of physical hazards.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: READ 300 or equivalent

OSHT 1313**Accident Prevention, Inspection, and Investigation**

Principles and practices providing a basis for understanding the nature of occupational hazard recognition, accident prevention, loss reduction, inspection techniques, and accident investigation analysis.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: READ 300 or equivalent

OSHT 1316**Material Handling**

Proper methods for material handling and storage including safety practices, proper equipment usage, engineering controls, personal protective equipment, and motor fleet safety.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 300 or ESOL 310 or equivalent

OSHT 1321**Fire Protection Systems**

Study of fire protection systems and their applications with emphasis on the National Fire Protection Association codes.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 300 or ESOL 310 or equivalent

OSHT 2309**Safety Program Management**

Examine the major safety management issues that effect the workplace including safety awareness, loss control, regulatory issues, and human behavior modification.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 300 or equivalent and OSHT 1301

OSHT 2401**OSHA Regulations - General Industry**

A study of Occupational Safety and Health Administration (OSHA) regulations pertinent to general industry.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: READ 300 or equivalent and OSHT 1301

PFPB 1305**Basic Blueprint Reading for Pipefitters**

Reading and interpreting working drawings. Includes symbols and abbreviations and the use of sketching techniques to create isometric and multiview drawings of piping and piping components.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: PFPB 1350

Pre/Corequisite: READ 300 or equivalent

PFPB 1350**Plumbing and Pipefitting Equipment and Safety**

Safe use of hand tools, power tools, rigging, and power equipment used in the plumbing trade for installation of different plumbing systems.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: READ 300 or equivalent

PFPB 1408**Basic Pipefitting Skills**

Mathematical operations necessary to calculate laying lengths of threaded pipe fabrication. Identification and use of hand tools and power tools. Identification of pipe, pipe fittings, flanges, and fasteners used in the trade.

Lecture Hrs = 3, Lab Hrs = 3

Pre/Corequisite: READ 300 or equivalent

PFPB 2343**Pipe Practices**

Identification, installation, and testing of steam traps and steam trap station components. Valve identification, application, and maintenance. Identification, storage, and handling of in-line specialties. Hydrostatic testing of process piping.

Lecture Hrs = 2, Lab Hrs = 2

Prerequisite: PFPB 2408

Pre/Corequisite: READ 300 or equivalent

PFPB 2349**Field Measuring, Sketching, and Layout**

Use, care, and setup of transit and level. Includes field dimensioning, sketching, and layout of future process piping. Emphasizes advanced trade math including the use of trigonometric functions and tables.

Lecture Hrs = 2, Lab Hrs = 2

Pre/Corequisite: READ 300 or equivalent

PFPB 2407**Pipe Fabrication and Installation I**

Pipe fabrication procedures of threaded, socketweld, and butt-weld pipe joints. Includes pipe and tube bending with hand benders, saddling in and saddling on pipe braces to pipe headers, and fabrication and installation of pipe supports.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: PFPB 1408

Pre/Corequisite: READ 300 or equivalent

PFPB 2408**Piping Standards and Materials**

Identification, description, and application of piping standards and specifications. Includes identification and use of various metallic and non-metallic piping materials, identification and installation of valves, and material take-offs.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: PFPB 2401

Pre/Corequisite: READ 300 or equivalent

PFPB 2441**Pipe Fabrication and Installation II**

Advanced pipe fabrication procedures of threaded, socketweld, and butt-weld pipe joints. Layout and fabrication of vertical, horizontal, and rolling off-sets using 45-degree fitting and odd-angle fittings.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: PFPB 2401

Pre/Corequisite: READ 300 or equivalent

PFPB 2449**Field Measuring, Sketching, and Layout**

Use, care, and setup of transit and level. Includes field dimensioning, sketching, and layout of future process piping. Emphasizes advanced trade math including the use of trigonometric functions and tables. This is a continuation of PFPB 2349.

Lecture Hrs = 3, Lab Hrs = 3

Pre/Corequisite: PFPB 2349, READ 300 or equivalent

PHIL 1301**Introduction to Philosophy**

An introduction to the basic issues in philosophy, including: reality, justice, morality, freedom and responsibility, and the good life. We approach these issues through the original writings of selected classical, modern, and contemporary philosophers.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: ENGL 301 or equivalent, READ 302 or equivalent

PHIL 1304**Introduction to World Religions**

An introduction to selected world religions, including but not limited to: Hinduism; Buddhism; Jainism; Sikhism; Taoism; Confucianism; Shinto; Judaism; and Christianity.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: ENGL 301 or equivalent, READ 302 or equivalent

PHIL 2303**Introduction to Logic**

This course covers the nature and methods of clear and critical thinking skills and methods of reasoning, such as deduction, induction, scientific reasoning, and fallacies.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: ENGL 301 or equivalent, READ 302 or equivalent

PHIL 2306**Introduction to Ethics**

An intermediate level philosophy course which covers moral theory (what's right) and ethical theory (what's good). The course also covers specific issues such as: religion, spirituality, and moral purpose; environmental ethics; feminist ethics; and the use of science and technology.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: ENGL 301, ESOL 320, or equivalent and READ 302, ESOL 312, or equivalent

PHYS 1401**College Physics I: Mechanics and Heat**

Physics 1401 and 1402 are designed to meet the needs of students who need one year of algebra/trigonometry - based physics. An introduction to the concepts and problems of classical mechanics and heat and thermodynamics, enriched with modern physics concepts.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: READ 302 or equivalent

Pre/Corequisite: MATH 1414 or equivalent, TECM 1341

PHYS 1402**College Physics II: Sound, Electricity, Magnetism, Light, & Modern Physics**

Physics 1401 and 1402 are designed to meet the needs of students who need one year of algebra/trigonometry - based physics. Completes one year of physics. Includes an introduction to the concepts and problems of wave motion, sound, electricity and magnetism, light, and modern physics.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: PHYS 1401, READ 302 or equivalent

PHYS 1405**General Physics I**

An elementary course in fundamental concepts of mechanics, heat, gravitation and sound with emphasis on the scientific approach to solving problems. For elementary education, liberal arts, and other non-science majors and students.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: READ 302 or equivalent

Pre/Corequisite: MATH 320, TECM 1341 or equivalent

PHYS 1407**General Physics II**

An elementary course in fundamental concepts of electricity, magnetism, light, and modern physics with emphasis on the scientific approach to solving problems. For elementary education, liberal arts, and other non-science majors and students.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: READ 302 or equivalent

Pre/Corequisite: MATH 320, TECM 1341 or equivalent

PHYS 1411**Introductory Astronomy I**

An introductory course, will concentrate on the origin, life, and fate of the solar system, the various bodies in the solar system (planets, satellites, meteors, comets, and asteroids), the solar system mechanics. Theories about the structure and origin of the solar system, with emphasis on recent discoveries will be included.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: MATH 1414 or equivalent, READ 302 or equivalent

PHYS 1412**Introductory Astronomy II**

An introductory course, will concentrate on the origin, life and fate of the stars and the universe, the various objects in the universe, the exploration of the universe by astronomers, and the understanding of the principles that lie behind the functioning of the universe. Discussion of atomic spectra, nuclear energy, and astronomical tools (such as optical, radio, and other telescopes and image enhancers) as they provide knowledge about distant objects will be included. Recent discoveries about quasars, black holes, and cosmology will be emphasized.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: PHYS 1411

PHYS 1415**Physical Science**

This course emphasizes the fundamental principles in physics, chemistry, geology, astronomy, meteorology, and environmental science. Emphasis is placed on the interrelationships among these various fields of science using an inquiry approach.

Lecture Hrs = 3, Lab Hrs = 3

Pre/Corequisite: MATH 320 or equivalent,

READ 302 or equivalent

PHYS 2425**Mechanics and Heat**

Principles of mechanics, thermodynamics, kinetic theory of gases, and mechanics of solids and fluids; also engineering applications of physical principles by means of computer numerical methods; primarily for science, mathematics, and engineering students.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: MATH 2413

PHYS 2426**Electricity, Optics and Waves**

Principles of electricity and magnetism, geometrical and physical optics, wave motion and sound, and introductory quantum theory; primarily for physical science, mathematics, and engineering majors.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: PHYS 2425

POFI 1341**Computer Applications II**

Continued study of current computer terminology and technology. Advanced skill development in computer hardware, software applications, and procedures. Advanced functions of word processing, spreadsheets, database documents, and presentation software are emphasized.

Lecture Hrs = 3, Lab Hrs = 1

Prerequisite: POFI 1401 or equivalent

Pre/Corequisite: READ 301 or equivalent

POFI 1349**Spreadsheets**

Spreadsheet software for business applications.

Lecture Hrs = 3, Lab Hrs = 1

Prerequisite: POFT 1321, POFI 1401

Pre/Corequisite: READ 301 or equivalent

POFI 1401**Computer Applications I**

Overview of computer office applications including current terminology and technology. Introduction to computer hardware, software applications, and procedures. This course provides a brief introduction to word processing, spreadsheet, presentation, and database terminology and concepts.

Lecture Hrs = 3, Lab Hrs = 3

Pre/Corequisite: READ 301 or equivalent

POFI 2301**Word Processing**

In-depth coverage of word processing software focusing on business applications.

Lecture Hrs = 3, Lab Hrs = 1

Pre/Corequisite: READ 301 or equivalent

POFI 2331**Desktop Publishing for the Office**

In-depth coverage of desktop publishing terminology, text editing, and use of design principles to create publishing material using word processing desktop publishing features. Emphasis on layout techniques, graphics, multiple page displays, and business application.

Lecture Hrs = 3, Lab Hrs = 1

Pre/Corequisite: READ 301 or equivalent

POFI 2340**Advanced Word Processing**

Advanced applications in merging, macros, graphics, and desktop publishing. Includes extensive formatting for technical documents. Emphasis on business applications.

Lecture Hrs = 3, Lab Hrs = 1

Prerequisite: POFI 2301

Pre/Corequisite: READ 301 or equivalent

POFT 1127**Introduction to Keyboarding**

Skill development in keyboarding with emphasis on alphabet, number, and symbol keys by touch. Skills can be applied to computers, typewriters, and other equipment with keyboards.

Lecture Hrs = 0, Lab Hrs = 3

Pre/Corequisite: READ 300 or equivalent

POFT 1132**Workplace Diversity**

Gender, cultural background, age, and other factors affecting coworker/client relationships. Includes behavioral expectations and standards in the business environment. An overview of workplace diversity.

Lecture Hrs = 1, Lab Hrs = 0

Pre/Corequisite: READ 301 or equivalent

POFT 1301**Business English**

Introduction to a practical application of basic language usage skills with emphasis on fundamentals of writing and editing for business.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: READ 301 or equivalent

POFT 1309**Administrative Office Procedures I**

Study of current office procedures, duties, and responsibilities applicable to an office environment.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: READ 301 or equivalent

POFT 1321**Business Math**

Instruction in the fundamentals of business mathematics including analytical and problem-solving skills for critical thinking in business applications.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: READ 301 or equivalent

POFT 1329**Beginning Keyboarding**

Skill development in the operation of the keyboard by touch applying proper keyboarding techniques. Emphasis on development of acceptable speed and accuracy levels and formatting basic documents.

Lecture Hrs = 3, Lab Hrs = 1

Pre/Corequisite: READ 301 or equivalent

POFT 1349**Administrative Office Procedures II**

In-depth coverage of office applications with special emphasis on decision making, goal setting, management theories, and critical thinking.

Only offered during Fall Semester.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: POFT 1309

Pre/Corequisite: READ 301 or equivalent

POFT 1364**Practicum (or Field Experience) - Administrative Assistant and Secretarial**

Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student.

Lecture Hrs = 0, Lab Hrs = 0, External Hrs = 31

Pre/Corequisite: READ 301 or equivalent

POFT 1365**Practicum (or Field Experience) - Administrative Assistant and Secretarial Science, General**

Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student.

Lecture Hrs = 0, Lab Hrs = 0, External Hrs = 31

Pre/Corequisite: READ 301 or equivalent

POFT 2301**Intermediate Keyboarding**

A continuation of keyboarding skills in document formatting, emphasizing speed, and accuracy. Emphasis on proofreading, editing, and following instructions, and keying documents from various copy.

Lecture Hrs = 3, Lab Hrs = 1

Pre/Corequisite: READ 301 or equivalent

POFT 2312**Business Correspondence & Communication**

Development of writing and presentation skills to produce effective business communications. Skill development in practical applications which emphasize the improvement of writing skills necessary for effective business communication. Emphasis is given to developing business letters, reports, memos, and employment communications; improving writing, speaking, and listening skills; and to preparing attractive business documents.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: READ 301 or equivalent and POFT 1301 or ENGL 1301

POFT 2331**Administrative Systems**

Advanced concepts of project management and office procedures utilizing integration of previously learned office skills. (Spring only)

Lecture Hrs = 3, Lab Hrs = 1

Prerequisite: Completion of Office Assistant and Administrative Assistant Certificates

Pre/Corequisite: READ 301 or equivalent

POFT 2364**Practicum (or Field Experience) - Administrative Assistant and Secretary**

Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student.

Lecture Hrs = 0, Lab Hrs = 0, External Hrs = 21

Pre/Corequisite: READ 301 or equivalent

PSYC 2301**Introduction to Psychology**

A survey of the fields of general psychology; the biological and psychological basis of human behavior, intelligence, motivation, emotion, learning, personality, memory, and psychopathology.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: ENGL 301 or equivalent, READ 302 or equivalent

PSYC 2308 Ω**Child Psychology**

A study of the physical, mental, and emotional development of the individual from birth through adolescence. Emphasis on the nature of individual differences and the correct integration of behavior patterns into a socially desirable and well-adjusted personality.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: PSYC 2301, READ 302 or equivalent, ENGL 301 or equivalent

PSYC 2314 Ω**Life Span Growth and Development**

The study of the relationship of the physical, emotional, social, and mental factors of growth and development throughout the life span from birth to death.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: PSYC 2301, READ 302 or equivalent, ENGL 301 or equivalent

PSYC 2316 Ω**Psychology of Personality**

Personality psychology deals with the struggle to understand human nature and its determinants. The complexity of human nature demands investigation of a number of points of view. This course will expose students to the major personality theories (e.g., psychodynamic, humanistic, existential, cognitive, behavioral) and their underlying philosophical assumptions.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: PSYC 2301, READ 302 or equivalent, ENGL 301 or equivalent

PSYC 2317**Statistics for Behavioral Sciences**

A course designed to provide a background in statistics for students in psychology and the social sciences. Includes elementary probability theory, measures of central tendency, variability, correlation and regression, the normal curve of probability, and statistical inference.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: PSYC 2301, READ 302 or equivalent, ENGL 301 or equivalent

PSYC 2318**Juvenile Delinquency**

Nature and extent of delinquency; comparison of explanatory models and theories; evaluation of prevention, control, and treatment programs. Same as SOCI 2339.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: PSYC 2301, READ 302 or equivalent, ENGL 301 or equivalent

PSYT 1313**Psychology of Personal Adjustment**

Development of personal, social, and work adjustment skills.

Lecture Hrs = 2, Lab Hrs = 2

PSYT 1325**Death and Dying**

Study of the cultural and social norms, values, beliefs, and activities associated with the dying and their survivors. Topics include theories, communication skills, and activities to assist with coping for the dying and their survivors.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: READ 300 or equivalent

PTAC 1302**Introduction to Process Technology**

Introduction to chemical and refinery plant operations. Topics include process technician duties, responsibilities and expectations; plant organizations; plant process and utility systems; and the physical and mental requirements of the process technician.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 301 or ESOL 311 or equivalent

PTAC 1308**Safety, Health, and Environment I**

Development of knowledge and skills to reinforce the attitudes and behaviors required for safe and environmentally sound work habits. Emphasis on safety, health, and environmental issues in the performance of all job tasks and regulatory compliance issues.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 301 or ESOL 311 or equivalent

PTAC 1332**Process Instrumentation I**

Study of the instruments and instrument systems used in the process industry including terminology, primary variables, symbology, control loops, and basic troubleshooting.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 301 or ESOL 311 or equivalent

PTAC 1410**Process Technology I - Equipment**

Instruction in the use of common process equipment.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: READ 301 or ESOL 311 or equivalent

PTAC 2314**Principles of Quality**

Study of the background and application of quality concepts. Topics include team skills, quality tools, statistics, economics and continuous improvement.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 301 or ESOL 311 or equivalent

PTAC 2420**Process Technology II - Systems**

Study of the interrelation of process equipment as process systems including related scientific principles.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: PTAC 1410, READ 301 or equivalent

PTAC 2438**Process Technology III Operations**

This course combines systems into operational processes with emphasis on operations under various conditions.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: PTAC 1410 and READ 301, ESOL 311, or equivalent

PTAC 2446**Process Troubleshooting**

Instruction in the different types of troubleshooting techniques, procedures, and methods used to solve process problems. Topics include application of data collection and analysis, cause-effect relationships, and reasoning.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: PTAC 1410 and READ 301, ESOL 311, or equivalent

READ 300**Beginning College Reading Skills**

A course designed for individuals whose reading development has been delayed. Emphasis is on vocabulary development, interpretation, and evaluation of basic sentence and paragraph patterns, articulative training, and concept development necessary for effective reading. It is required of all students whose Computerized Placement Test score is below 46.

Lecture Hrs = 3, Lab Hrs = 0

READ 301**Intermediate College Reading Skills**

Improvement of reading habits and skills. Includes a study of the theory and mechanics of good reading. Emphasis is on developing vocabulary and improving comprehension through computer assisted instruction and classroom discussion. It is required of all students whose Computerized Placement Test score is between 46-61.

Lecture Hrs = 3, Lab Hrs = 1

Prerequisite: READ 300 or ESOL 310 or equivalent

READ 302**Advanced College Reading Skills**

This course is designed to improve reading effectiveness at the adult level. Emphasis is placed on skills relating to vocabulary, comprehension, and reading speed. It is suggested for college students, business and professional people, and other adults who recognize a need for greater efficiency in reading and required for those students whose Computerized Placement Test score is between 62-81.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 301 or ESOL 311 or equivalent

RNSG 1146**Legal and Ethical Issues for Nurses**

Study of the laws and regulations related to the provision of safe and effective professional nursing care; attention given to the development of a framework for addressing ethical issues; and topics to include confidentiality, the Nursing Practice Act, professional boundaries, ethics and health care legislation. This course lends itself to a blocked approach.

Lecture Hrs = 1, Lab Hrs = 0

Prerequisite: Admission to RN or RNT Program, RNSG 1162, RNSG 1251, RNSG 2160, RNSG 2213, SPNL 1301

Corequisite: RNSG 2121, RNSG 2432, RNSG 2263

RNSG 1162**Clinical-Nursing-Registered Nurse Training**

A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Progression: student must pass RNSG 1251 and RNSG 1162 concurrently to progress to next nursing level.

Lecture Hrs = 0, Lab Hrs = 0, Clinical Hrs = 6,

Insurance Fee

Prerequisite: Admission to RN or RNT Program, RNSG 1343, RNSG 1362, RNSG 2161, RNSG 2201, BIOL 2421, RN only: ENGL 1302, Humanities, Oral Communication, and Computer Literacy electives

Pre/Corequisite: SPNL 1301

Corequisite: RNSG 1251, RNSG 2160, RNSG 2213

RNSG 1205**Nursing Skills I**

Study of the concepts and principles essential for demonstrating competence in the performance of nursing procedures. Topics include knowledge, judgment, skills, and professional values within a legal/ethical framework. This course lends itself to a blocked approach. Progression: student must pass RNSG 1209 and RNSG 1205 concurrently to progress.

Lecture Hrs = 1, Lab Hrs = 4

Prerequisite: Admission to RN Program.

Pre/Corequisite: BIOL 2402, PSYC 2314

Corequisite: RNSG 1209, RNSG 1341, RNSG 1361

RNSG 1209**Introduction to Nursing**

Overview of nursing and the role of the professional nurse as a provider of care, coordinator of care, and member of a profession. Topics include knowledge, judgment, skills and professional values with a legal/ethical framework. This course lends itself to a blocked approach. Progression: student must pass RNSG 1209 and RNSG 1205 concurrently to progress.

Lecture Hrs = 2, Lab Hrs = 0, Testing Fee

Prerequisite: Admission to RN Program

Pre/Corequisite: BIOL 2402, PSYC 2314

Corequisite: RNSG 1205, RNSG 1341, RNSG 1361

RNSG 1251**Care of the Childbearing Family**

Study of concepts related to the provision of nursing care for childbearing families. Topics may include selected complications. Topics include knowledge, judgment, skills, and professional values within a legal/ethical framework. This course lends itself to a blocked approach. Progression: student must pass RNSG 1251 and RNSG 1162 concurrently to progress to next nursing level.

Lecture Hrs = 2, Lab Hrs = 0, Testing Fee

Prerequisite: Admission to RN or RNT Program, RNSG 1343, RNSG 1362, RNSG 2161, RNSG 2201, BIOL 2421, RN only: ENGL 1302, Humanities, Computer Literacy, and Oral Communication electives

Pre/Corequisite: SPNL 1301

Corequisite: RNSG 1162, RNSG 2160, RNSG 2213

RNSG 1301**Pharmacology**

Introduction to the science of pharmacology with emphasis on the actions, interactions, adverse effects, and nursing implications of each drug classification. Topics include the roles and responsibilities of the nurse in safe administration of medications within a legal/ethical framework. This course lends itself to either a blocked or integrated approach. In addition, the course focuses on the basic concepts and terminology used in the study of pharmacology. Pharmacokinetics for major drug classifications is emphasized as well as drug administration routes. Note that the RN Math Requirement that is a prerequisite for this course can be satisfied by (a) passing the math portion of one of the TSI approved tests; (b) successfully completing MATH 320, (c) earning a grade of C or better in MATH 110, or (d) earning a grade of C or better in any college-level math course attempted.

Lecture Hrs = 3, Lab Hrs = 0.

Prerequisite: RN Math Requirement, READ 302 or equivalent.

Pre/Corequisite: BIOL 2401 or BIOL 2404

RNSG 1341**Common Concepts of Adult Health**

Study of the general principles of caring for selected adult clients and families in structured settings with common medical-surgical health care needs related to each body system. Emphasis on knowledge judgment, skills, and professional values within a legal/ethical framework. This course lends itself to a blocked approach. Progression: student must pass RNSG 1341 and RNSG 1361 concurrently to progress to next nursing level.

Lecture Hrs = 3, Lab Hrs = 0, Testing Fee

Prerequisite: Admission to RN Program

Pre/Corequisite: BIOL 2402, PSYC 2314,

Corequisite: RNSG 1205, RNSG 1209, RNSG 1361

RNSG 1343 Ω**Complex Concepts of Adult Health**

Integration of previous knowledge and skills related to common adult health needs into the continued development of the professional nurse as a provider of care, coordinator of care, and member of a profession in the care of adult clients/families in structured health care settings with complex medical-surgical health care needs associated with each body system. Emphasis on knowledge, judgments, skills, and professional values within a legal/ethical framework. This course lends itself to a blocked approach. Progression: student must pass RNSG 1343 and RNSG 1362 concurrently to progress to next nursing level.

Lecture Hrs = 3, Lab Hrs = 0, Testing Fee

Prerequisite: Admission to RN Program, RNSG 1205, RNSG 1209, RNSG 1341, RNSG 1361, BIOL 2402, PSYC 2314, or Admission to RNT Program, RNSG 2207, BIOL 2421

Pre/Corequisite RN program only: BIOL 2421

Corequisite: RNSG 1362, RNSG 2161, RNSG 2201

RNSG 1361**Clinical-Nursing-Registered Nurse Training**

A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Progression: student must pass RNSG 1341 and RNSG 1361 concurrently to progress to next nursing level.

Lecture Hrs = 0, Lab Hrs = 0, Clinical Hrs = 9,
Insurance Fee

Prerequisite: Admission to RN Program

Pre/Corequisite: BIOL 2402, PSYC 2314

Corequisite: RNSG 1205, RNSG 1209, RNSG 1341

RNSG 1362**Clinical-Nursing-Registered Nurse Training**

A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Progression: student must pass RNSG 1343 and RNSG 1362 concurrently to progress to next level.

Lecture Hrs = 0, Lab Hrs = 0, Clinical Hrs = 9,
Insurance Fee

Prerequisite: Admission to RN Program, RNSG 1205, RNSG 1209, RNSG 1341, RNSG 1361, BIOL 2402, PSYC 2314, or Admission to RNT Program, RNSG 2207, BIOL 2421

Pre/Corequisite RN program only: BIOL 2421

Corequisite: RNSG 1343, RNSG 2161, RNSG 2201

RNSG 2121**Management of Client Care**

Exploration of leadership and management principles applicable to the role of the nurse as a provider of care, coordinator of care, and member of a profession. Includes application of knowledge, judgment, skills, and professional values within a legal/ethical framework. This course lends itself to a blocked approach.

Lecture Hrs = 0, Lab Hrs = 0, Clinical Hrs = 4,
Insurance Fee

Prerequisite: Admission to RN or RNT Program, RNSG 1162, RNSG 1251, RNSG 2160, RNSG 2213, RNSG 2432, RNSG 2263, SPNL 1301

Corequisite: RNSG 1146

RNSG 2160**Clinical-Nursing-Registered Nurse Training**

A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Progression: student must pass RNSG 2213 and RNSG 2160 concurrently to progress to the next nursing level.

Lecture Hrs = 0, Lab Hrs = 0, Clinical Hrs = 6,
Insurance Fee

Prerequisite: Admission to RN or RNT Program, RNSG 1343, RNSG 1362, RNSG 2161, RNSG 2201, BIOL 2421 RN only, ENGL 1302; Humanities, Computer Literacy, and Oral Communication electives

Pre/Corequisite: SPNL 1301

Corequisite: RNSG 1162, RNSG 1251, RNSG 2213

RNSG 2161**Clinical-Nursing-Registered Nurse Training**

A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Progression: student must pass RNSG 2201 and RNSG 2161 concurrently to progress to next nursing level.

Lecture Hrs = 0, Lab Hrs = 0, Clinical Hrs = 6,
Insurance Fee

Prerequisite: Admission to RN Program, RNSG 1205, RNSG 1209, RNSG 1341, RNSG 1361, BIOL 2402, PSYC 2314, or Admission to RNT Program, RNSG 2207, BIOL 2421

Pre/Corequisite: BIOL 2421 RN only

RNSG 2201**Care of Children and Families**

Study of concepts related to the provision of nursing care for children and their families, emphasizing judgment, and professional values within legal/ethical framework. This course lends itself to a blocked approach. Progression: student must pass RNSG 2201 and RNSG 2161 concurrently to progress to next nursing level.

Lecture Hrs = 2, Lab Hrs = 0, Testing Fee

Prerequisite: Admission to RN program, RNSG 1205, RNSG 1209, RNSG 1341, RNSG 1361, BIOL 2402, PSYC 2314, or Admission to RNT Program RNSG 2207, BIOL 2421

Pre/Corequisite RN only: BIOL 2421

Corequisite: RNSG 1343, RNSG 1362, RNSG 2161

RNSG 2207**Transition to Nursing Practice**

Introduction to selected concepts related to the role of the professional nurse as a provider of care, coordinator of care, and member of the profession. Review of trends and issues impacting nursing and health care today and in the future. Topics include knowledge, judgment, skill, and professional values within a legal/ethical framework. This course lends itself to a blocked approach.

Lecture Hrs = 2, Lab Hrs = 0

Prerequisite: Admission to RNT Program

RNSG 2213**Mental Health Nursing**

Principles and concepts of mental health, psychopathology, and treatment modalities related to the nursing care of clients and their families. This course lends itself to a blocked approach. In addition, the student will utilize the nursing process to identify common disruptions in growth and developmental patterns as they relate to the client's optimal levels of health. Progression: student must pass RNSG 2213 and RNSG 2160 concurrently to progress to next nursing level.

Lecture Hrs = 2, Lab Hrs = 0, Testing Fee

Prerequisite: Admission to RN or RNT Program, RNSG 1343, RNSG 1362, RNSG 2161, RNSG 2201, BIOL 2421 RN only: ENGL 1302; Humanities, Computer Literacy, and Oral Communication electives

Pre/Corequisite: SPNL 1301

Corequisite: RNSG 1162, RNSG 1251, RNSG 2160

RNSG 2263 Ω**Clinical-Nursing-Registered Nurse Training**

A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Progression: student must pass RNSG 2432 and RNSG 2263 concurrently to progress.

Lecture Hrs = 0, Lab Hrs = 0, Clinical Hrs = 12,
Insurance Fee

Prerequisite: Admission to RN or RNT Program, RNSG 1162, RNSG 1251, RNSG 2160, RNSG 2213, SPNL 1301

Corequisite: RNSG 1146, RNSG 2432

RNSG 2432**Enhanced Concepts of Adult Health I**

Enhanced concepts and skills for developing professional competencies in complicated nursing care situations involving adult clients/families with multiple body system problems. Emphasizes critical thinking, clinical reasoning, and determining legal/ethical values for optimization of client care in intermediate and acute care settings. This course lends itself to a blocked approach. Progression: student must pass RNSG 2432 and RNSG 2263 concurrently to progress.

Lecture Hrs = 4, Lab Hrs = 0, Testing Fee

Prerequisite: Admission to RN or RNT Program, RNSG 1162, RNSG 1251, RNSG 2160, RNSG 2213, SPNL 1301

Corequisite: RNSG 1146, RNSG 2263

RTVB 1321**TV Field Production**

Pre-production, production, and post-production process involved in field television production. Topics include field camera setup and operation, field audio, television directing, and in-camera or basic continuity editing with an emphasis on underlying principles of video technology.

Lecture Hrs = 2, Lab Hrs = 2

Prerequisite: MUSC 1427

Pre/Corequisite: READ 300, ESOL 310, or equivalent

SCIT 1414**Applied General Chemistry I**

Applications of general chemistry emphasizing industry-related laboratory skills and competencies including laboratory safety and report writing. Addresses supporting chemical theories including atomic and molecular structure, nomenclature, chemical reactivity, gas laws, acids and bases, and solutions.

Lecture Hrs = 3, Lab Hrs = 3

Pre/Corequisite: READ 301 or equivalent

SGNL 1401**Beginning American Sign Language**

Fingerspelling and basic training skills in sign language with an emphasis on expressive communication. For students with little or no previous experience in sign language.

Lecture Hrs = 3, Lab Hrs = 3

Pre/Corequisite: READ 300 or equivalent

SGNL 1402**Advanced American Sign Language**

Continuation of SGNL 1401. Intermediate and advanced skills in sign language with an emphasis on American Sign Language in terms of expressive and receptive communication.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: SGNL 1401, READ 300 or equivalent

SGNL 2301**American Sign Language III:****Conversation, Interpreting, Literature, Folklore**

A review and application of conversational skills in American Sign Language. Interpreting from signing to voice and voice to signing. An introduction to American Sign Language literature and folklore.

Lecture Hrs = 3, Lab Hrs = 2

Prerequisite: SGNL 1402, READ 300 or equivalent

SGNL 2302**American Sign Language IV:****Conversation, Interpreting, Literature, Folklore**

A continuation of SGNL 2301

Lecture Hrs = 3, Lab Hrs = 2

Prerequisite: SGNL 2301

SOCI 1301 Ω**Introductory Sociology**

The principles of social organization including the study of social groups, culture, social change, personality population, rural and urban communities, social class and caste systems, and social institutions such as the family, recreation and religion.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: ENGL 301 or equivalent, READ 302 or equivalent

SOCI 1306**Social Problems**

Social disorganization and reorganization with emphasis on the following topics: mental illness, suicide, drug addiction, alcoholism, sex deviation, crime, gambling, minority groups, divorce, and retirement.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: ENGL 301 or equivalent, READ 302 or equivalent

SOCI 2301 Ω**Marriage and the Family**

A sociological examination of marriage and family life. Problems of courtship, mate selection, divorce, and marriage adjustment in modern American society.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: ENGL 301 or equivalent, READ 302 or equivalent

SOCI 2319 Ω**Multi-Cultural Studies**

This course focuses on the conflicts, dilemmas, and social problems that arise in multicultural societies. Special emphasis is placed on issues such as racism, sexism, and the 'politics of identity.' The course also examines a variety of remedies for the problems noted above. These include: the expansion of civil rights, affirmative action, and recognition of minority cultures.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: SOCI 1301, ENGL 301 or equivalent, READ 302 or equivalent

SOCI 2336**Criminology**

Crime as a form of deviant behavior. Nature and extent of crime; past and present theories. Evaluation of prevention, control, and treatment programs.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: ENGL 301 or equivalent, READ 302 or equivalent

SOCI 2339**Juvenile Delinquency**

Nature and extent of delinquency; competing explanatory models and theories; evaluation of prevention, control, and treatment programs. Same as PSYC 2318.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: ENGL 301 or equivalent, READ 302 or equivalent

SOCW 2361**Introduction to Social Work**

Philosophy and techniques of social work, survey of its fields, and the historical development of United States system are discussed.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: ENGL 301 or equivalent, READ 302 or equivalent

SOCW 2362**Social Welfare as a Social Institution**

This is an introduction to the study of modern social work, within the context of institution of social welfare, the underlying philosophy and ethics of social work, and the major divisions and types of social work together with their methods and objectives.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: ENGL 301 or equivalent, READ 302 or equivalent

SPAN 1411**Beginning Spanish**

For students with little or no previous knowledge of Spanish. Vocabulary and grammar are taught through a variety of cognitive teaching methods including the use of patterned response drills, memorization of mini-dialogues, and the analysis of contextually related readings. Proper pronunciation is stressed throughout the course.

Lecture Hrs = 3, Lab Hrs = 3

Pre/Corequisite: READ 300 or equivalent

SPAN 1412**Intermediate Spanish**

Continuation of SPAN 1411.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: SPAN 1411, READ 300 or equivalent

SPAN 2311**Spanish - Reading, Conversation, Composition and Grammar Review**

Emphasis on oral fluency, grammar, composition, and the reading of modern Spanish prose.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: SPAN 1412, READ 300 or equivalent

SPAN 2312**Spanish - Reading, Conversation, Composition and Grammar Review**

Continuation of SPAN 2311.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: SPAN 2311 or equivalent transfer credit in Spanish

SPCH 1145**Forensic Workshop**

A laboratory course for students wishing to participate in debate, forensic, and interpretation tournaments. All speech tournament activities will be covered. One hour each semester.

Lecture Hrs = 1, Lab Hrs = 2

Pre/Corequisite: READ 300 or equivalent

SPCH 1311**Introduction to Speech Communication**

Theories and practice of communication in interpersonal, small group, and public speech.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 300 or equivalent

Pre/corequisite: ENGL 301 or equivalent

SPCH 1315**Principles of Public Speaking**

Preparation and delivery of various types of speeches. Emphasis upon such fundamental principles as self-confidence, poise, directness, posture, stress, voice, and articulation. Speech types considered include announcements and expository, persuasive, after-dinner, and radio speeches.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 300 or ESOL 310 or equivalent

SPCH 1318**Interpersonal Communication**

Designed for the student who wants to improve communication skills in one-to-one settings in small groups. A study and practice of effective interpersonal concepts and techniques. Includes subjects such as listening, assertive communication and dealing appropriately with conflict. Emphasis on self improvement.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 300 or ESOL 310 or equivalent

SPCH 1321**Business and Professional Communication**

Business and Professional Communication applies the techniques of oral communication to business and professional settings that people might encounter in business situations. Discussion and practical application include: methods and theory; problem-solving; the research, organization, and presentation of speeches; trends in media; interviewing.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 300 or ESOL 310 or equivalent

SPCH 1342**Voice and Diction**

Open to all students interested in improving their diction. Development of the voice and proper diction. Coaching of the individual student, with the aid of audio taping and an audio journal. Same as DRAM 2336.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 300 or ESOL 310 or equivalent

SPCH 2333**Discussion & Small Group Communication**

Discussion and small group theories and techniques as they relate to group process and interaction.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 301 or equivalent, ENGL 301 or equivalent, and one of the following - SPCH 1311, 1315, 1318, or 1321

SPCH 2335**Argumentation and Debate**

Theories and practice in argumentation and debate including analysis reasoning, organization, evidence, and refutation.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 302 or equivalent, ENGL 301 or equivalent, and one of the following: SPCH 1311, 1315, 1318, or 1321.

SPCH 2341**Oral Interpretation**

Introduction to the study and application of the oral performance of literature. Preparation and oral reading of various types of literature, exercises in arranging and adapting literature, choral speaking, practice in phrasing, vocal quality, rhythm and bodily responses. Literature will be analyzed and researched with sensitivity to the sociological, political, and anthropological forces that shaped the literature.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 300 or ESOL 310 or equivalent

SPNL 1301**Health Care Spanish**

Development of practical Spanish communication skills for the health care employee including medical terminology, greetings, common expressions, commands, and phrases normally used within a hospital or a physician's office.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 302 or equivalent

SRVY 1413**Plane Surveying**

An introductory overview of surveying equipment and measurement techniques with emphasis on leveling and traversing.

Lecture Hrs = 3, Lab Hrs = 3

Pre/Corequisite: READ 301, ESOL 311, or equivalent

TECA 1303**Family, School and Community**

A study of the child in relation to the family, school and community. Topics include parent education and participation in the learning process, family and community lifestyles, child abuse, and contemporary family issues. This course includes a minimum of 15 contact hours of field experience with children, infancy through age 12, in varied settings with diverse populations. The course aligns with the State Board for Educators Certification Pedagogy and Professional Responsibilities standards.

Lecture Hrs = 3, Lab Hrs = 2, Insurance Fee

Prerequisite: READ 301 or equivalent

TECA 1311**Educating Young Children**

An introduction to the education of young children, including developmentally appropriate practices and programs, theoretical and historical perspectives, ethics, and professional responsibilities, and current issues. The course includes a minimum of 15 contact hours of field experience with children, infancy through age 12, in varied settings with diverse populations. The course aligns with the State Board of Educators Certification Pedagogy and Professional Responsibilities standards.

Lecture Hrs = 3, Lab Hrs = 2, Insurance Fee

Prerequisite: READ 301 or ESOL 311 or equivalent

TECA 1318**Wellness of the Young Child**

A study of factors that impact the well-being of the young child, including healthy behavior, food, nutrition, fitness, and safety practices that focus on local and national standards, as well as legal implications of relevant policies and regulations. The course includes a minimum of 15 contact hours of field experience with children, infancy through age 12 in varied settings with diverse populations. The course aligns with the State Board of Educators Certification Pedagogy and Professional Responsibilities standards.

Lecture Hrs = 3, Lab Hrs = 2, Insurance Fee

Prerequisite: READ 301 or ESOL 311 or equivalent

TECA 1354**Child Growth and Development**

A study of the principles of normal child growth and development from conception to adolescence. Focus on physical, cognitive, social, and emotional domains of development.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 301 or ESOL 311 or equivalent

TECM 1341**Technical Algebra**

Application of linear equations, simultaneous equations, and quadratic equations relevant to technical occupations.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: MATH 310 or equivalent, READ 300 or equivalent

TECM 1349**Technical Math Applications**

Fundamentals of trigonometry and geometry as used in a variety of technical settings. Topics include the use of plane and solid geometry to solve areas and volumes encountered in industry.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: READ 300 or ESOL 310 or equivalent

VNSG 1161**Clinical - Licensed Vocational Nurse (LVN) Training**

A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional.

Lecture Hrs = 0, Lab Hrs = 0, External Lab = 6,

Insurance Fee

Pre/Corequisite: BIOL 2404, (B or Better)

Corequisite: VNSG 1226, VNSG 1304, VNSG 1423, VNSG 1429

Prerequisite: ADM to VN Program

VNSG 1219**Leadership and Professional Development**

Study of the importance of professional growth. Topics include the role of the licensed vocational nurse in the multi-disciplinary health care team, professional organizations, and continuing education.

Lecture Hrs = 2, Lab Hrs = 1, Testing Fee

Prerequisite: HITT 1305, VNSG 1227, VNSG 1234, VNSG 1331, VNSG 1360, VNSG 1432

Corequisite: VNSG 1330, VNSG 2361, VNSG 2431 Pre-requisite: ADM to VN Program

VNSG 1226**Gerontology**

Overview of the normal physical, psychosocial, and cultural aspects of the aging process. Addresses common disease processes of aging. Exploration of attitudes towards care of the older adult.

Lecture Hrs = 2, Lab Hrs = 0

Prerequisite: BIOL 2404 (B or better), VNSG 1423, VNSG 1304, VNSG 1331, VNSG 1227, VNSG 1161

Corequisite: HITT 1305, VNSG 1429, VNSG 1234, VNSG 1432, VNSG 1360

Prerequisite: ADM to VN Program

VNSG 1227**Essentials of Medication Administration**

General principles of medication administration including determination of dosage, preparation, safe administration, and documentation of multiple forms of drugs. Instruction includes various systems of measurement.

Lecture Hrs = 0, Lab Hrs = 4,

Pre/Corequisite: BIOL 2404, (B or Better)

Corequisite: VNSG 1161, VNSG 1304, VNSG 1331, VNSG 1423

Prerequisite: ADM to VN Program

VNSG 1234**Pediatrics**

Study of childhood diseases and childcare from infancy through adolescence. Focus on the care of the well and the ill child utilizing the nursing process.

Lecture Hrs = 2, Lab Hrs = 0

Prerequisite: BIOL 2404, (B or Better), VNSG 1161, VNSG 1226, VNSG 1304, VNSG 1423, VNSG 1429

Co/Prerequisite: HITT 1305, VNSG 1227, VNSG 1331, VNSG 1360, VNSG 1432

Prerequisite: ADM to VN Program

VNSG 1304**Foundations of Nursing**

Introduction to the nursing profession including history, standards of practice, legal and ethical issues, and role of the vocational nurse. Topics include mental health, therapeutic communication, cultural and spiritual diversity, nursing process, and holistic awareness. This course will also include introduction to the principles of nutrition.

Lecture Hrs = 3, Lab Hrs = 0,

Pre/Corequisite: BIOL 2404, (B or Better)

Corequisite: VNSG 1161, VNSG 1226, VNSG 1423, VNSG 1429

Prerequisite: ADM to VN Program

VNSG 1330**Maternal-Neonatal Nursing**

Utilization of the nursing process in the assessment and management of the childbearing family. Emphasis on the bio-psycho-socio-cultural needs of the family during the phases of pregnancy, childbirth, and the neonatal period including abnormal conditions. This course will also include disorders of the female reproductive system.

Lecture Hrs = 3, Lab Hrs = 0

Prerequisite: HITT 1305, VNSG 1227, VNSG 1234, VNSG 1331, VNSG 1360, VNSG 1432

Corequisite: VNSG 1219, VNSG 2361, VNSG 2431

Prerequisite: ADM to VN Program

VNSG 1331**Pharmacology**

Fundamentals of medications and their diagnostic, therapeutic, and curative effects. Includes nursing interventions utilizing the nursing process.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: BIOL 2404 (B or Better)

Corequisite: VNSG 1161, VNSG 1227, VNSG 1304, VNSG 1423

Prerequisite: ADM to VN Program

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VNSG 1360**Clinical - Licensed Vocational Nurse (LVN) Training**

A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional.
Lecture Hrs = 0, Lab Hrs = 0, External Lab = 18, Insurance Fee

Prerequisite: VNSG 1161, VNSG 1226, VNSG 1304, VNSG 1432, VNSG 1402, VNSG 1429, BIOL 2404 (B or Better)

Corequisite: VNSG 1227, VNSG 1234, VNSG 1331, VNSG 1432, HITT 1305

Prerequisite: ADM to VN Program

VNSG 1423**Basic Nursing Skills**

Mastery of entry level nursing skills and competencies for a variety of health care settings. Utilization of the nursing process as the foundation for all nursing interventions.

Lecture Hrs = 2, Lab Hrs = 6, Lab Fee

Pre/Corequisite: BIOL 2404, (B or Better)

Corequisite: VNSG, 1161, VNSG 1226, VNSG 1304, VNSG 1429

Prerequisite: ADM to VN Program

VNSG 1429**Medical-Surgical Nursing I**

Application of the nursing process to the care of adult patients experiencing medical-surgical conditions along the health-illness continuum in a variety of health care settings. This course will focus on the health care needs of the adult client with disorders of the respiratory, Medical Surgical, Integumentary/ immune systems and cancer.

Lecture Hrs = 4, Lab Hrs = 1, Testing Fee

Prerequisite: BIOL 2404, (B or Better), VNSG 1423, VNSG 1304, VNSG 1331, VNSG 1227, VNSG 1161

Corequisite: HITT 1305, VNSG 1226, VNSG 1234, VNSG 1432, VNSG 1360

Prerequisite: ADM to VN Program

VNSG 1432**Medical-Surgical Nursing II**

Continuation of Medical-Surgical Nursing I with application of the nursing process to the care of adult patients experiencing medical-surgical conditions along the health-illness continuum in a variety of health care settings. This course will focus on the health care needs of the adult client with disorders of the endocrine, gastrointestinal, nervous, cardiovascular, eye and ear, and genitourinary systems.

Lecture Hrs = 3, Lab Hrs = 2, Testing Fee

Prerequisite: VNSG 1423, VNSG 1304, VNSG 1226, VNSG 1429, BIOL 2404 (B or Better); VNSG 1161

Corequisite: HITT 1305, VNSG 1331; VNSG 1227, VNSG 1234, VNSG 1360

Prerequisite: ADM to VN Program

VNSG 2361**Clinical - Licensed Vocational Nurse (LVN) Training**

A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional.
Lecture Hrs = 0, Lab Hrs = 0, External Lab = 15, Insurance, Testing Fee

Prerequisite: HITT 1305, VNSG 1227, VNSG 1234, VNSG 1331, VNSG 1360, and VNSG 1432

Corequisite: VNSG 1219, VNSG 1330, VNSG 2431

Prerequisite: ADM to VN Program

VNSG 2431**Advanced Nursing Skills**

Mastery of advanced level nursing skills and competencies in a variety of health care settings utilizing the nursing process as a problem-solving tool.

Lecture Hrs = 4, Lab Hrs = 1

Prerequisite: VNSG 1227, VNSG 1234, VNSG 1331, VNSG 1360, VNSG 1432, HITT 1305

Pre/Corequisite: VNSG 1219, VNSG 1330, VNSG 2361

Prerequisite: ADM to VN Program

WLDG 1291**Special Topics in Welder/Welding Technologist: Intro. to Gas Metal Arc**

Topics address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course was designed to be repeated multiple times to improve student proficiency. A study of the principles of Gas Metal Arch Welding, setup and use of GMAW equipment, and safe use of tools/equipment. Instruction in various joint designs.

Lecture Hrs = 1, Lab Hrs = 2

WLDG 1323**Welding Safety, Tools, and Equipment**

An introduction to welding careers and safety practice, including welding safety; OSHA and the Hazardous Communication Act; Material Safety Data Sheets (MSDS); basic mathematics; measuring systems; shop operations; use and care of precision measuring tools; and the use and care of hand and power tools. Instruction on various types of welding equipment and processes, basic welding gases, fluxes, rods, electrodes, symbols, and blueprints. Also includes metal preparation, joint design and oxy-fuel cutting.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: READ 300 or equivalent

WLDG 1327**Welding Codes**

An in-depth study of welding codes and their development in accordance with structural standards, welding processes, destructive and nondestructive test methods. Includes API 1104 and ASME Sections V and IX.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: READ 300 or equivalent

WLDG 1337**Introduction to Metallurgy**

A study of ferrous and nonferrous metals from the ore to the finished product. Emphasis on metal alloys, heat treating, hard surfacing, welding techniques, forging, foundry processes, and mechanical properties of metal including hardness, machinability and ductility.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: READ 300 or equivalent

WLDG 1428**Introduction to Shielded Metal Arc Welding (SMAW)**

An introduction to shielded metal arc welding process. Emphasis placed on power sources, electrode selection, oxy-fuel cutting, and various joint designs. Instruction provided in SMAW fillet welds in various positions.

Lecture Hrs = 3, Lab Hrs = 3

Pre/Corequisite: READ 300 or equivalent

WLDG 1434**Introduction to Gas Tungsten Arc Welding (GTAW)**

An introduction to the principles of gas tungsten arc welding (GTAW), setup/use of GTAW equipment, and safe use of tools and equipment. Welding instruction in various positions on joint designs.

Lecture Hrs = 3, Lab Hrs = 3

Pre/Corequisite: READ 300 or equivalent

WLDG 1435**Introduction to Pipe Welding**

An introduction to welding of pipe using the shielded metal arc welding process (SMAW), including electrode selection, equipment setup, and safe shop practices. Emphasis on weld positions 1G and 2G using various electrodes.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: WLDG 2443

Pre/Corequisite: READ 300 or equivalent

WLDG 2331**Advanced Blueprint Interpretation and Cost Analysis**

A continuation of the Blueprint for Welders course. Emphasis placed on inspection cost analysis, and estimating, including instruction in basic drafting skills.

Lecture Hrs = 3, Lab Hrs = 0

Pre/Corequisite: READ 300 or equivalent

WLDG 2443**Advanced Shielded Metal Arc Welding (SMAW)**

Advanced topics based on accepted welding codes. Training provided with various electrodes in shielded metal arc welding processes with open V-groove joints in all positions.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: WLDG 1428

Pre/Corequisite: READ 300 or equivalent

WLDG 2451**Advanced Gas Tungsten Arc Welding (GTAW)**

Advanced topics in GTAW welding, including welding in various positions and directions.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: WLDG 1434

Pre/Corequisite: READ 300 or equivalent

WLDG 2453**Advanced Pipe Welding**

Advanced topics involving welding of pipe using the shielded metal arc welding (SMAW) process. Topics include electrode selection, equipment setup, and safe shop practices. Emphasis on weld positions 5G and 6G using various electrodes.

Lecture Hrs = 3, Lab Hrs = 3

Prerequisite: WLDG 1435

Pre/Corequisite: READ 300 or equivalent

