

EGS 110C**Engineering Graphics, 3 credit hours, 30 lec., 30 lab. (Offered as needed)**

Use of instruments, lettering practice; geometric construction; multiview projection and conventions, auxiliary views, section views, axonometric and oblique projections, rotation, patterns and development, and methods of reproduction. Prerequisite: ETD 1100 or equivalent: prerequisite only applies to Architectural Drafting and Design students.

EGS 1130C**Descriptive Geometry, 3 credit hours, 30 lec., 30 lab. (Offered as needed)**

Basic principles of orthographic projection, auxiliary views and rotation as they apply to points, lines and planes in space; addition of coplanar and non-coplanar vectors; intersections and developments; and selected abstract, axonometric and oblique projection, and practical problems. Prerequisite: EGS 110C or equivalent.

EME 2040 Δ**Introduction to Educational Technology, 3 credit hours, 45 lec. (Fall, Spring Summer)**

This course will develop competencies necessary to integrate technology into classroom instruction. Students will survey a variety of instructional technology materials, software, and systems, as well as learn to use these in the classroom environment.

ENC 1101 Δ**English Composition I, 3 credit hours, 45 lec. (Fall, Spring, Summer)**

Instruction and intensive practice in expository and argumentative writing including a documented paper. Prerequisite: A passing score on a standardized test measuring communications/verbal achievement or successful completion of ENC 0080 and/or LIN 1670 with a grade of "C" or better.

ENC 1102**English Composition II, 3 credit hours, 45 lec. (Fall, Spring, Summer)**

Interpretative and critical reading of fiction (novel, novella, short story), drama, and poetry. Practice in the writing of analytic discourse. Practice in writing the research paper. Prerequisite: Completion of English Composition I or an equivalent course with a grade of "C" or better.

ENC 1104**CLAST Review: Essay Skills, 1 credit hour, 15 lec. (Offered as needed)**

A short course specifically designed to prepare students to write fifty-minute timed essays that conform to CLAST standards. The course is conducted as a self-study under the supervision of the CLAST Coordinator.

ENC 1105**CLAST Review: English Language Skills, 1 credit hour, 15 lec. (Offered as needed)**

A short course designed to prepare students to take or retake the CLAST English Language Skills sub-test. The course is conducted as a self-study utilizing the tutorial services in the Academic Success Center.

ENC 2210**Technical Report Writing, 3 credit hours, 45 lec. (Offered as needed)**

This course covers the fundamentals of technical report writing, mechanics, and style. Various types of reports are prepared, and criteria for evaluating the adequacy of the various components of these reports are utilized. The course also includes reading and analysis of technical literature as well as oral reporting. Prerequisite: passing score on placement test.

ENG 1001**Research Papers, 1 credit hour, 16 lab. (Fall, Spring, Summer)**

A learn-by-doing course in the methods of conducting library research and writing a documented paper. Students will work in the library on self-selected subjects under the supervision and guidance of the instructor in a tutorial relationship. For successful completion, each student will write a documented paper in accordance with a standard system.

NOTE: If this course is used to satisfy writing requirements for transfer course to OWCC, a minimum grade of "C" is required. Student may use this course to satisfy deficiency in 6,000 word Gordon Rule writing requirement, but it may not be used in lieu of traditional Gordon Rule courses, such as ENC 1101.

ENL 2000**English Literature I, 3 credit hours, 45 lec. (Offered as needed)**

A study of English literature from the Old English period, Beowulf, through the late Eighteenth century, the Age of Enlightenment, focusing on major works and their authors with an emphasis upon the literature as a significant reflection of and contribution to the political, cultural, social, religious, and economic milieu of each age. This course may be used as a Humanities credit. Prerequisite: ENC 1101.

ENL 2022**English Literature II, 3 credit hours, 45 lec. (Offered as needed)**

A study of English literature from the Romantics through the Twentieth century focusing on major works and their authors with an emphasis upon the literature as a significant reflection of and contribution to the political, cultural, social, religious, and economic milieu of each age. This course may be used as a Humanities credit. Prerequisite: ENC 1101.

ETD 1100***Introduction to Technical Drawing, 3 credit hours, 30 lec., 30 lab. (Offered as needed)**

A course in the fundamental principles of the graphic language (the language of industry) and is developed for students without previous mechanical drawing experience. Topics include: use and care of instruments, lettering, geometric construction, multiview projection, sketching techniques, inking, and methods of reproduction.

* This college credit course is not intended for transfer and may not be applied toward the A.A. degree.

Δ Technology-Across-the Curriculum Course

ETD 1111*

Drafting I, 6 credit hours, 15 lec., 150 lab. (Offered as needed)

The first of a sequence of courses in drafting which includes basic use of instruments, freehand lettering, geometric construction, orthographic projection, sections and conventions, conventional revolutions, dimensioning, inking, mechanical lettering, and methods of reproduction. Prerequisite: ETD 1100 and ETD 1710 or equivalent.

ETD 1221*

Drafting II, 6 credit hours, 15 lec., 150 lab. (Offered as needed)

A course that continues and completes the student's study of the fundamentals intrinsic to all types of drafting. Topics covered include isometric, dimetric, trimetric, oblique, and perspective projection, auxiliary views, related mathematics, precision dimensioning and inking practices. Prerequisite: ETD 1111 or equivalent.

ETD 1310C* Δ

AutoCAD I, 3 credit hours, 30 lec, 30 lab. (Offered as needed)

A basic course on the use of AutoCAD Software to include; Introduction to AutoCAD, drawing commands, display and inquiry commands, modify commands, dimensioning and annotation, data exchange and output files. Prerequisite: ETD 1100 or equivalent.

ETD 1311C* Δ

AutoCAD II, 3 credit hours, 30 lec., 30 lab. (Offered as needed)

The second course in a series designed to develop skill and proficiency in the use of AutoCAD software to include: additional drawing commands, editing commands, modify commands, advanced display and inquiry commands, advanced dimensioning and annotation, advanced layering, block, attributes and X-Ref, paper space, UCS, data exchange and output files. Prerequisite: ETD 1310C* or equivalent.

ETD 1312C* Δ

AutoCAD LT I, 3 credit hours, 30 lec., 30 lab. (Offered as needed)

A basic course on the use of AutoCAD LT Software to include; Introduction to AutoCAD LT, drawing commands, display and inquiry commands, modify commands, dimensioning and annotation, data exchange and output files. Prerequisite: ETD 1100 or equivalent.

ETD 1313C* Δ

AutoCAD LT II, 3 credit hours, 30 lec., 30 lab. (Offered as needed)

The second course in a series designed to develop skill and proficiency in the use of AutoCAD LT software to include: additional drawing commands, editing commands, modify commands, advanced display and inquiry commands, advanced dimensioning and annotation, advanced layering, block, attributes and X-Ref, paper space, UCS, data exchange and output files. Prerequisite: ETD 1312C or equivalent.

ETD 1350C* Δ

AutoCAD 3-D Modeling, 3 credit hours, 30 lec., 30 lab. (Offered as needed)

A basic course in mechanical design using basic computer geometry techniques. Topics will include: orthographic projections, space relationships of points, lines, planes and revolution of objects. Additional coverage will include principles of surface generation, intersections, wire modeling, and solid modeling techniques. Prerequisite: ETD 1311C or equivalent.

ETD 1614*

Electromechanical Drafting, 3 credit hours, 30 lec., 30 lab. (Offered as needed)

A course in the fundamentals of electronics drafting covering such topics as: using electronic symbols, schematic diagrams, connection diagrams, block and logic diagrams, WW board drawings, chassis drawings, and pictorial drawings. Prerequisite: ETD 1111 or equivalent.

ETD 1653*

PCB Drafting, 3 credit hours, 15 lec., 60 lab. (Offered as needed)

A course to teach students principles of printed circuit board design, layout, and tape-on. Topics covered include: schematics logic, single side boards, multi-layer boards, art-masters, fabrication drawings, and silkscreen masters. Prerequisite: ETD 1310C or equivalent.

ETD 1654*

Intermediate Printed Circuit Board Drafting, 3 credit hours, 15 lec., 60 lab. (Offered as needed)

A course to teach students principles of printed design and documentation through the use of a computer. Prerequisite: ETD 1653 or equivalent.

ETD 1700*

Drafting III, 6 credit hours, 15 lec., 150 lab. (Offered as needed)

A course in the fundamentals of Mechanical and Machine Drafting. Topics covered include: Geometric dimensioning and true positional tolerancing; threads, nuts, bolts, screws, gears, cams and springs, drafting standards, and preparation of working drawings. Prerequisite: ETD 1311C, and ETD 2218 or equivalent.

ETD 1710*

Fundamentals of Dimensioning & Tolerancing, 4 credit hours, 60 lec. (Offered as needed)

A course designed to help students develop the basic fundamentals of dimensioning and tolerancing. Topics include: dimensioning systems such as; metric, decimal, fractional-inch, foot and inch, tolerancing methods, limits and tolerances, tolerancing accumulation, dimensioning practices, and standards fits. Prerequisite: for Drafting and Design student course should be taken with ETD 1100.

* This college credit course is not intended for transfer and may not be applied toward the A.A. degree.

Δ Technology-Across-the Curriculum Course

ETD 1801C*

Technical Illustration, 3 credit hours, 15 lec., 45 lab. (Offered as needed)

The purpose of this course is to help students develop the skills, knowledge, and attitudes necessary to be job entry-level qualified as technical illustrators. Prerequisites: ETD 1221 or EGS 1130C, and ETD 1311C.

ETD 1811C Δ

Corel Draw I, 3 credit hours, 30 lec., 30 lab. (Offered as needed)

Class will focus on organization of two-dimensional space in regard to the plane. Study and hands-on projects both in artistic media and on computer will include the following: Comprehensive usage of this vector-based drawing program to create professional artwork – from single logos to intricate technical illustrations. Topics such as perspective and the creation of depth on the two dimensional surface will be included as well. Students will investigate the use of computer graphics disciplines emphasizing illustration and the principles of color and design. Students will also be expected to complete five individual projects related to the coursework. The presentation of these projects to the class will include both written and visual materials. Students will generate a portfolio of computer art and are encouraged to broaden perspectives and to think creatively. Class will serve as introduction to use of Corel Draw.

ETD 1842C*

Computer Rendering I, 3 credit hours, 30 lec. 30 lab. (Offered as needed)

A basic course in rendering techniques using accuren-render software. Topics include: The walkabout window, AutoCAD views, move in the Ray Trace View, viewing the model, Rendering the model, assigning materials, lighting your model and printing. Prerequisite: ETD 1350C.

ETD 2011*

Industrial Print Reading, 1 credit hour. (Offered as needed)

The beginning level aspects of reading industrial prints such as drawing notes, title blocks, revision blocks, legends, schedules, multiviews, and parts list.

ETD 2218*

Geometric Dimensioning & Tolerancing, 4 credit hours, 60 lec. (Offered as needed)

An introductory course in geometric dimensioning and tolerancing using the geometric method nationally accepted according to ASMEY14.5M. Topics covered include: definition and terms, symbols, datum referencing, locational tolerancing, form tolerancing, profile tolerancing, orientation and runout tolerancing, and math for positional tolerancing. Prerequisites: ETD 1710 and ETD 1221 or equivalent.

ETD 2219*

Advanced Geometric Dimensioning & Tolerancing, 4 credit hours, 60 lec. (Offered as needed)

An advanced course in geometric dimensioning and tolerancing using the geometric method nationally accepted according to ASMEY14.5M. Topics covered include: definitions and terms, symbols, datum referencing, locational tolerancing, form tolerancing, profile tolerancing, orientation and runout tolerancing, math for positional tolerancing, quality assurance methods and techniques, and manufacturing methods and techniques. Prerequisite: ETD 2218 or equivalent.

ETD 2250*

Tolerance Stacks I, 4 credit hours, 60 lec. (Offered as needed)

A course for engineers, designers, inspectors and other engineering personnel. This course consists of learning how to perform tolerance accumulation studies within a part or assembly to include: Coordinate dimension stacks and stacks involving geometric tolerancing. Prerequisite: ETD 2218 or equivalent.

ETD 2251*

Tolerance Stacks II, 4 credit hours, 60 lec. (Offered as needed)

A second course for engineers, designers, inspectors and other engineering personnel. The course continues the learning and add more advanced concepts relative to performing tolerance accumulation studies within a part or assembly to include: coordinate dimension stacks and stacks involving geometric tolerancing. Prerequisite: ETD 2219 and ETD 2250 or equivalent.

ETD 2328C* Δ

Introduction to MicroStation, 3 credit hours, 30 lec., 30 lab. (Offered as needed)

A basic course in mechanical design using basic computer geometry techniques. Topics will include orthographic projections, space relationships of points, lines, planes and revolution of objects. Additional coverage will include principles of surface generation, intersections, wire modeling, and solid modeling techniques. Prerequisite: ETD 1100 or EGS 1110C or equivalent.

ETD 2352C* Δ

AutoCAD III, 3 credit hours, 30 lec., 30 lab. (Offered as needed)

An advanced course designed to help students develop proficiency in the area of computer aided drafting and systems drafting. Topics covered include: transfer drawings, digitized drawings, explanatory drawings, multiview projections, exploded assemblies, pictorial drawings, auxiliary views, sections, details, geometric dimensioning and tolerancing, and CADD concepts. Prerequisites: ETD 1311 and ETD 1221 or EGS 1130C.

* This college credit course is not intended for transfer and may not be applied toward the A.A. degree.

Δ Technology-Across-the Curriculum Course

ETD 2355C* Δ**AutoCAD 3-D Modeling II, 3 credit hours, 30 lec., 30 lab. (Fall, Spring)**

An advanced course in mechanical design using advanced computer techniques. Contents will include: 3D concepts, wire modeling, surface generation techniques, and solid modeling techniques. Prerequisite: ETD 1350C or equivalent.

ETD 2356C***MicroStation II, 3 credit hours, 30 lec., 30 lab. (Offered as needed)**

A second course in mechanical design using basic and intermediate computer geometry techniques. Topics will include: Orthographic projections, space relationships of points, lines, planes and revolution of objects. Additional coverage will include principles of surface generation, intersections, wire modeling, and solid modeling techniques. Prerequisites: ETD 2328C or equivalent.

ETD 2365C***Mechanical Desktop I, 3 credit hours, 30 lec., 30 lab., (Offered as needed)**

A basic course in Parametric Solid Design, using AutoCAD Mechanical Desktop Software. Topics include: Basic concepts of Parametric Sketching, Part Creation, Surface Creation and Editing, Basic Concepts of Combining Parts. Prerequisite: ETD1350C or equivalent.

ETD 2366C***Mechanical Desktop II, 3 credit hours, 30 lec., 30 lab., (Offered as needed)**

The second course in a series designed to develop skill and proficiency in Parametric Solid Design, using AutoCAD Mechanical Desktop Software. Topics include: Creating Drawing Views, Creating Table Driver Parts, Creating Shells; and assembling parts. Prerequisite: ETD 2365C or equivalent.

ETD 2534***Construction Drafting, 6 credit hours, 30 lec., 120 lab. (Offered as needed)**

A course to prepare students to develop shop drawings for large construction projects. Topics covered include: steel, precast concrete, prestressed concrete, poured-in-place concrete, and heavy timber construction projects. Prerequisites: EGS 1110C or ETD 1111 or equivalent.

ETD 2542***Structural Drafting, 3 credit hours, 15 lec., 60 lab. (Offered as needed)**

A course in the fundamentals of structural drafting including: an overview of structural drafting, prestressed concrete drafting, structural steel drafting, and poured on-site concrete drafting. Prerequisite: TAR 2121C or equivalent.

ETD 2543C***Structural Drafting II, 3 credit hours, 15 lec., 60 lab. (Offered as needed)**

An advanced course in structural drafting covering prestressed concrete drafting, structural steel drafting, and poured-on-site concrete drafting for large commercial and industrial buildings as well as bridges, parking decks, towers, and stadiums. Prerequisite: ETD 2542 or equivalent.

ETD 2655***Advanced Printed Circuit Board Drafting, 3 credit hours, 15 lec., 60 lab. (Offered as needed)**

A course to teach students advanced principles of printed design and documentation through the use of a computer. Prerequisites: ETD 1654 or equivalent.

ETD 2705***Advanced Mechanical Drafting, 3 credit hours, 30 lec., 30 lab hours. (Offered as needed)**

An advanced course covering mechanical drafting, machine design, advanced dimensioning and tolerancing, and working drawings according to MIC and ASME standards. Prerequisites: ETD 1700, ETD 2218, or equivalent.

ETD 2802C***Technical Illustration II, 3 credit hours, 30 lec., 30 lab. (Offered as needed)**

The purpose of this course is to help students develop advanced skills, knowledge, and attitudes necessary as technical illustrators, to include oblique, and axiometric projections, perspective and exploded pictorial drawings, and related techniques. Prerequisites: ETD 1801C and ETD 1311C or equivalent.

ETD 2843C* Δ**Computer Rendering II, 3 credit hours, 30 lec., 30 lab., (Offered as needed)**

An advanced course in rendering techniques using accurender software. Topics include: Radiosity, landscape for realism, decals, backgrounds, environments, panoramas and animation. Prerequisite: ETD 1842C, Corequisite: ETD 2355C.

ETD 2905***Independent Study – Drafting, 1 credit hour (Fall, Spring, Summer)**

Practical treatment of special geometry, graphics, and design. Emphasis on individual work projects utilizing such graphical techniques as orthographic projection, perspective drawing, auxiliary views, topographic drawing, and graphing. Prerequisites: EGS 1110C and ETD 1111 or permission of instructor. This course may be taken up to four (4) times for credit.

ETG 1110***Electronics Computations, 4 credit hours, 60 lec. (Offered as needed)**

This course is designed to provide practical application of computations relating directly to electronics. It provides active, intensive application of basic mathematical theories and formulas to the analysis and solution of real world electronics problems. Prerequisite: MAT 1033A or equivalent.

* This college credit course is not intended for transfer and may not be applied toward the A.A. degree.

Δ Technology-Across-the Curriculum Course

ETG 1941***Internship I – Technical Education, 3 credit hours, 225 lab hours (Offered as needed)**

On-the-job training in the Applied Associate of Science Degree program in which the student is actively enrolled. The student works under a qualified supervision on a job related to his/her degree program. The supervisor will rate the student's performance, knowledge, comprehension, dependability, initiative, cooperativeness, and total performance. A project paper or approved project will be submitted by the student two weeks prior to the end of the semester.

ETG 1942***Internship II – Technical Education, 3 credit hours, 225 lab hours (Offered as needed)**

On-the-job training in the Applied Associate of Science Degree program in which the student is actively enrolled. The student works under a qualified supervisor on a job related to his/her degree program. The supervisor will rate the student's performance, knowledge, comprehension, dependability, initiative, cooperativeness, and total performance. A project paper or approved project will be submitted by the student two weeks prior to the end of the semester. On the job experience is built upon experiences gained through course ETG 1941. Prerequisite: ETG 1941.

ETG 1943***Internship III – Technical Education, 3 credit hours, 225 lab hours (Offered as needed)**

On-the-job training in the Applied Associate of Science Degree program in which the student is actively enrolled. The student works under a qualified supervisor on a job related to his/her degree program. The supervisor will rate the student's performance, knowledge, comprehension, dependability, initiative, cooperativeness, and total performance. A project paper or approved project will be submitted by the student two weeks prior to the end of the semester. On the job experience is built upon experiences gained through this course ETG 1942. Prerequisite: ETG 1942.

ETG 1944***Internship IV – Technical Education, 3 credit hours, 225 lab hours (Offered as needed)**

On-the-job training in the Applied Associate of Science Degree program in which the student is actively enrolled. The student works under a qualified supervisor on a job related to his/her degree program. The supervisor will rate the student's performance, knowledge, comprehension, dependability, initiative, cooperativeness, and total performance. A project paper or approved project will be submitted by the student two weeks prior to the end of the semester. On the job experience is built upon experiences gained through course ETG 1943. Prerequisite: ETG 1943.

ETG 2905***Independent Study – Electronics, 1 credit hour (Offered as needed)**

Directed study and individual projects designed to meet the needs of students interested in a specialized area of electronics for which present course availability is limited. This course may be taken up to four (4) times for credit. Instructor or department chair approval is required.

ETI 1411***Advanced Manufacturing Processes, 3 credit hours, 45 lec. (Offered as needed)**

This course presents the numeric and computer numeric control of various machining processes and the use of computer programming in the machine shop. Included are shop safety, program preparation, milling, drilling, subroutines, coordinate systems and other related topics.

ETI 1710***Occupational Safety, 3 credit hours, 45 lec. (Offered as needed)**

A basic course in occupational safety and health covering such topics as: theories of accident causation; workplace hazards; hazard analysis and prevention; accident reporting; OSHA, ergonomics; product safety; workers' compensation; and stress on the job.

ETI 1713***Implementing Total Safety, 3 credit hours, 45 lec. (Offered as needed)**

A course on implementing the total Safety Management (TSM) approach to workplace safety and health. Major topics include the TSM Steering Committee, TSM Facilitator, and improvement project teams (IPTs).

ETI 1715***Environmental Safety, 3 credit hours, 45 lec. (Offered as needed)**

A course on protecting the environment from hazardous processes, products, and by-products of business and industry. The primary focus of the course is the ISO 14000 standard.

ETI 2110***Quality Tools I, 3 credit hours, 45 lec. (Offered as needed)**

This is a comprehensive course designed to increase the students' knowledge and skill in all aspects of quality control. The course provides a variety of the basic skills that contribute to the outgoing quality in the mechanical trades. Included are quality functions, quality personnel, shop mathematics, understanding blueprints, measuring tools, their use and other related topics.

ETI 2111***Quality Control II, 3 credit hours, 45 lec. (Offered as needed)**

This course is a continuation of Quality Tools I with an emphasis on inspection methods and layout techniques. Included also are quality costs, planning, probability, statistical control and other related topics.

* This college credit course is not intended for transfer and may not be applied toward the A.A. degree.

ETI 2117*

Introduction to Total Quality, 3 credit hours, 45 lec. (Offered as needed)

This course covers the fundamentals of Total Quality including the following: quality culture, customer focus, employee empowerment, team building, decision making, problem solving, conflict management, quality tools, benchmarking, continuous improvement, quality function deployment, Statistical Process Control, Just-In-Time Manufacturing, and Implementing Total Quality.

ETI 2118*

Implementing Total Quality, 3 credit hours, 45 lec. (Offered as needed)

This course covers all 20 steps required to implement Total Quality in any type of organization. Emphasis is placed on specific requirements for implementation, the critical role of executive level leaders, and variation among organizations. Prerequisite: ETI 2117.

ETI 2131*

Statistical Process Control, 3 credit hours, 45 lec. (Offered as needed)

A course covering the fundamentals of SPC. Major topics include: rationale for SPC, inhibitors of SPC, management's role in SPC, the quality tools, and control charts.

ETI 2940*

Directed Work Study-Industrial-Technical, 1 credit hour, 45 lab. (Offered as needed)

Directed experience in instructional, laboratory and/or materials assistance in a designated industrial-technical area. This course may be taken up to four (4) times for credit. Department chair approval required.

FAD 1123

Adults in a Changing Society, 3 credit hours, 45 lec. (Fall, Spring, Summer)

A course focusing on personal development and traditional or nontraditional career options available to adults in today's changing society.

FRE 1120

French I, 4 credit hours, 60 lec. (Fall term only)

Pronunciation and grammatical structures of French, with emphasis upon balanced development of all four skills—listening, speaking, reading, and writing. Covers all basic structures of the language.

FRE 1121

French II, 4 credit hours, 60 lec. (Spring term only)

Pronunciation and grammatical structures of French, with emphasis upon balanced development of all four skills – listening, speaking, reading and writing. Covers all basic structures of the language. Prerequisite: FRE 1120 or its equivalent.

FRE 2200

French III, 4 credit hours, 60 lec. (Fall term only)

Intermediate level review of grammar, readings in French Literature, and development of conversational and writing skills. Prerequisite: FRE 1121 or its equivalent.

FRE 2201

French IV, 4 credit hours, 60 lec. (Spring term only)

Completion of intermediate level review of grammar, readings in French literature, and development of conversational and writing skills. Prerequisite: FRE 2200 or its equivalent.

GEA 1000‡

World Regional Geography, 3 credit hours, 45 lec. (Offered as needed)

The course introduces the student to geographic regional studies. It will combine the concepts of physical geography and cultural, economic, and human geography as it applies to the differing regions of the world. It will show the relationships between the regional environment and the people who live there, between settlement patterns, economic patterns and cultural patterns within each region; and, using current events, it will show the impact of other phenomena upon those regions and their people. Relationships between the various regions will be highlighted, again using current events as the triggering element.

GEB 1011

Introduction to Business, 3 credit hours, 45 lec. (Fall, Spring, Summer)

Designed to give students a broad understanding of the nature of business and a preliminary idea of the various areas of business specialization.

GEB 1940*

Internship-Business, 3 credit hours, 90 lab. (Offered as needed)

On-the-job training in the Associate of Science/Applied Science Option program in which the student is enrolled. The student is under the supervision at work of a qualified supervisor. The supervisor will rate the student's performance, knowledge, comprehension, dependability, initiative, cooperativeness, and total performance. A project paper or approved project will be submitted by the student three weeks prior to the close of the semester. May be repeated four times for a total of 12 credit hours.

GEB 2441

Business Ethics, 3 credit hours, 45 lec. (Offered as needed)

This course addresses the legal, moral, and societal issues of ethical conduct in the business environment. Actual case studies are used to illustrate appropriate relationships among employers, employees, customers, stockholders, and other business stakeholders. Topics include: codes of ethics, laws and regulations related to ethics, conflict of interest, and moral philosophies associated with ethical conduct.

* This college credit course is not intended for transfer and may not be applied toward the A.A. degree.

‡ This college credit course qualifies as having an international and/or diversity focus for Teacher Education Programs common prerequisites.

GLY 1001**Earth Science, 4 credit hours, 60 lec. (Fall, Spring, Summer)**

Survey of processes, materials and structure of the solid earth, oceanography, meteorology, and the relation of the earth to other planets. Intended for physical science general education requirement. Practical exercises in mineral and rock identification.

GLY 1001L**Earth Science Lab, 1 credit hour, 30 lab. (Fall, Spring, Summer)**

Laboratory experiences pertaining to the physical environment: observation, measurement, data analysis, mapping, map interpretation, properties of earth materials. This is an optional course serving students who transfer to universities which require a laboratory course to satisfy the General Education requirement in Physical Science. Pre- or corequisite: GLY 1001, OCE 1005C, or MET 1010.

GLY 1010C**Physical Geology, 4 credit hours, 45 lec., 30 lab. (Offered as needed)**

A study of the materials, surface feature, structure and processes of the solid earth. Labs in identification of rocks and minerals. Landforms will be analyzed from topographic and geologic maps. Actual landforms and processes will be studied on field trips and exercises.

GLY 1100C**Historical Geology, 4 credit hours, 45 lec., 30 lab. (Offered as needed)**

A study of the history of the earth, including the origin of continents, mountains and ocean basins as recorded in rocks and fossils. A survey of the fossil record and changes in animal and plant life throughout geological time will also be studied.

GRA 1121C* Δ**Desktop Publishing I, 3 credit hours, 30 lec., 30 lab. (Offered as needed)**

This beginning level publishing course on a Macintosh desktop computer will acquaint students with various software programs, clip-art, digital camera usage, and scanning; students will learn to produce flyers, ads, certificates, business cards, and other printed material.

GRA 1122C* Δ**Desktop Publishing II, 3 credit hours, 30 lec., 30 lab. (Offered as needed)**

This course is a continuation of Desktop Publishing I; the primary focus will be on the use of the software program *Pagemaker* for more advanced applications on a Macintosh computer. Prerequisite: GRA 1121C.

GRA 1123C* Δ**Desktop Publishing III, 3 credit hours, 30 lec., 30 lab. (Offered as needed)**

This course is a continuation of Desktop Publishing II. Advanced *Pagemaker* skills will be covered, including creation of Adobe PDF files. This is not a course for beginners. Prerequisites: GRA 1122C.

GRA 2100C* Δ**Computer Graphics I, 4 credit hours, 30 lec., 60 lab. (Offered as needed)**

This course provides instruction and practical exercises in the use of graphics software *Photoshop* to create, modify and generate color graphics to produce illustrations and charts on a Macintosh desktop publishing system.

GRA 2140C* Δ**Multimedia I, 4 credit hours, 30 lec., 60 lab. (Fall, Spring, Summer)**

An introductory course covering basic principles of design affecting interactive multimedia presentations. Students will learn an interactive media authoring software application and its interaction with other supporting software applications. Students will produce a complete interactive CD-ROM title. Prerequisites: ART 2602C and ART 1600C.

GRA 2141C* Δ**Multimedia II, 4 credit hours, 30 lec., 60 lab. (Offered as needed)**

An advanced course covering principles of design affecting interactive multimedia presentations. Students will learn advanced functions of an interactive media authoring software application and supporting software. Students will produce a finished interactive CD-ROM title. Prerequisite: GRA 2140C.

GRA 2144C* Δ**Web Design/Graphics, 4 credit hours, 30 lec., 60 lab. (Offered as needed)**

This course covers the designing, preparation, and the publishing of Home Pages using Hyper Text Markup Language (HTML) for the World Wide Web on the Internet, using *Netscape* as the browser. This course is taught from a graphics point-of-view using a Macintosh.

GRA 2145C* Δ**Advanced Web Design/Graphics, 4 credit hours, 30 lec., 60 lab., (Offered as needed)**

An advanced course where students will study an industry standard WYSIWYG web site development tool. Students will produce more sophisticated user interactivity and page layout in a large website project. This course is presented from a graphic perspective. Prerequisite: GRA 2144C.

GRA 2156C* Δ**Computer Graphics II, 4 credit hours, 30 lec., 60 lab. (Offered as needed)**

This course is a continuation of Computer Graphics I. Advanced *Photoshop* techniques and processes will be covered using a Power Macintosh desktop computer. This is not a beginning level course and requires prior knowledge/experience with *Adobe Photoshop*. Prerequisite: GRA 2100C.

* This college credit course is not intended for transfer and may not be applied toward the A.A. degree.

Δ Technology-Across-the Curriculum Course

GRA 2164C* Δ

Advanced Graphic Projects, 4 credit hour, 30 lec., 60 lab. (Offered as needed)

This course is designed for the advanced graphics student. The student will call upon skills/knowledge previously gained in other courses and software programs to produce several QTVR projects. This course will be considered a capstone in the progression of learning and is not a beginning level course. Prerequisite: GRA 2100C.

GRA 2173C* Δ

Projects in Graphic Design, 3 credit hours, 30 lec., 30 lab. (Offered as needed)

An advanced course utilizing the student's full complement of skills and abilities. The student will work under the advisement of the faculty member to produce a large multifaceted project of their own design. Prerequisites: GRA 1121C, ART 1600C, GRA 2100C, and ART 2602C.

GRA 2210C* Δ

Pre-Press Assembly, 4 credit hours, 30 lec., 60 lab. (Offered as needed)

Classroom and lab experiences using a computer to prepare both spot and process color images, colorize artwork, and print separations; students will produce an 8-page booklet from beginning to end. Prerequisites: GRA 1122C and GRA 2100C.

GRA 2900* Δ

Independent Study – Graphic Art, 1 credit hour, 30 lab. (Offered as needed)

Practical treatment of Graphics/Printing Technology. Emphasis on individual work projects.

GRA 2905* Δ

Independent Study – Graphics/Printing, 1 credit hour, 45 lab. (Offered as needed)

The student will initiate independent computer related work, utilizing various software and hardware. The course may be taken four times for credit.

GRA 2949* Δ

Directed Work Study – Graphics/Printing, 1 credit hour, 45 lab. (Offered as needed)

The student will complete computer-related work utilizing various computer-related hardware and software under the direct guidance of an instructor. This course may be taken four times for credit.

HFT 2210*

Hospitality Management I, 3 credit hours, 45 lec. (Offered as needed)

An introductory study of problems originating in the operation and administration of various segments of the hospitality industry. Prerequisite: MAN 2021.

HFT 2211*

Hospitality Management II, 3 credit hours, 45 lec. (Offered as needed)

A continuing study of the hospitality industry. Prerequisites: MAN 2021, HFT 2210.

HFT 2940*

Hospitality Management – Internship I, 3 credit hours, 90 lab. (Offered as needed)

A management internship program providing on-the-job management experiences in various phases of the hospitality industry.

HFT 2941*

Hospitality Management – Internship II, 3 credit hours, 90 lab. (Offered as needed)

A management internship program providing on-the-job management experiences in various phases of the hospitality industry.

HIM 1000*

Introduction to Health Information Management, 3 credit hours, 45 lec. (Fall)

Orientation to medical records history and professional associations. Confidentiality, filing, retrieving, indexing, numbering, storage and content of the medical record is also discussed. The course includes job search skills and professional job performance.

HIM 1270C*

Medical Billing, 2 credit hours, 15 lec., 30 lab. (Fall, Spring, Summer)

Introduction to computerized medical billing and reimbursement through various payors. Correct completion of HCFA 1500 forms will be emphasized. Prerequisite: HIM 1282, knowledge of basic computer & keyboarding skills.

HIM 1282*

Basic Coding for Medical Records, 4 credit hours, 60 lec. (Summer)

Development of nomenclature and classification systems and an introduction to ICD-9-CM and CPT coding. Introduces the student to Ambulatory Payment Classifications (APCs) and Diagnostic Related Groups (DRGs). Prerequisites: HSC 1531, BSC 1080.

HIM 2283C*

Advanced Coding for Medical Records with Lab, 5 credit hours, 60 lec. 30 lab. (Fall)

Advanced instruction in coding/ICD-9-CM diagnoses, and procedures in ICD-9-CM and CPT both manually and automated. Provides sequencing guidelines and rules and regulations in both the hospital and physician office setting. Prerequisites: HIM 1282, knowledge of basic computer and keyboarding skills.

HIM 2433*

Pathophysiology, 4 credit hours, 60 lec. (Fall)

Introduction to the nature, cause, and treatment of disease entities and the body's defense mechanisms. Commonly used drugs will also be introduced.

* This college credit course is not intended for transfer and may not be applied toward the A.A. degree.

Δ Technology-Across-the Curriculum Course

HLP 1081**Wellness: Practice and Theory, 3 credit hours, 45 lec. (Fall, Spring, & Summer)**

A course designed to promote wellness through assessment, instruction and fitness programs which, if applied, will enable the individual to achieve and/or maintain a high quality of health and fitness throughout life. Based on assessment test results a physical examination by a physician may be recommended.

HSA 1101**Introduction to Health Care, 2 credit hours, 15 lec., 30 lab. (Offered as needed)**

Introduction to the health care delivery system and health related occupations. Also safety, security, and infection control procedures will be discussed.

HSC 1100**Health Education, 3 credit hours, 45 lec. (Offered as needed)**

A systematic and comprehensive coverage of basic factual material, concepts, terminology, and important trends in major health areas of concern today.

HSC 1400**First Aid, 3 credit hours, 45 lec. (Offered as needed)**

Preparation to meet emergencies that occur in the school, home or on the highway. Instruction and practice in dressing and bandaging, care of wounds, shock, bone and joint injuries, cardiopulmonary resuscitation, transportation of the injured, oral poisoning and other medical emergencies.

HSC 1531**Medical Terminology, 3 credit hours, 45 lec. (Offered as needed)**

An introduction to prefixes, suffixes, root words, combining forms, Latin and Greek forms, spelling, and pronunciation, with emphasis on building a working medical vocabulary based on body systems.

HUM 1020†**Humanities – Introduction, 3 credit hours, 45 lec. (Fall, Spring, Summer)**

Techniques, forms, and basic evaluative tools related to music, the visual arts, poetry, drama, the dance, film, and philosophy or religion. Art works are utilized as much as possible. Prerequisite: recommend one semester of English Composition.

HUM 1905**Independent Study – Arts and Humanities, 1 credit hour (Offered as needed)**

A defined independent study which is pursued under supervision of a faculty directing teacher and recorded through departmental procedures. Designed to permit a student to pursue nonscheduled academic and laboratory work which may be of a specialized or advanced nature and not available through classes or courses available on a college schedule. Departmental approval is required.

NOTE: If this course is used to satisfy writing requirements for transfer courses to OWCC, a 6,000 word paper with a minimum grade of "C" is required. This course may be taken up to four (4) times for credit.

HUM 2700‡**Humanities – Foreign Study, 3 credit hours, 15 lec., 60 lab. (Offered as needed)**

A variable humanities content course designed to allow students first-hand learning experiences outside the United States.

HUM 2905**Directed Work Study – Art Humanities, 1 credit hour, 45 hours (Offered as needed)**

Directed experience in instructional, laboratory and/or materials assistance in a designated Arts-Humanities area. This course may be taken up to four (4) times for credit.

HUM 2906**Tutorial – Arts and Humanities, 1 credit hour, 30 lab. (Offered as needed)**

A program which awards credit recognition to outstanding students who volunteer to assist or tutor other students having remedial and specific academic or laboratory needs in a designated subject. Student tutors are recommended by faculty teaching a designed course and are supervised through the Counseling Office. May be taken four (4) times for credit.

HUM 2920**Humanities Colloquium – 1 credit hour, 5 lec., 20 lab. (Fall, Spring, Summer)**

Humanities Colloquium is a lab designed to introduce students to critical visual and listening skills to become an intelligent arts consumer. Initial lecture sessions are devoted to discussions of the elements of analysis of art works, music pieces, theatre performances, and dance presentations. Students will be required to attend selected OWCC Visual and Performance Arts presentations and to write a short critical review of each. Topics may vary.

HUN 2410A***Child Nutrition and Health, 3 credit hours, 45 lec. (Offered as needed)**

Methods of meeting physical needs of young children through nutrition and good health practices. Recognition of childhood diseases and care of the handicapped child.

HUN 2201 Δ**Nutrition, 3 credit hours, 45 lec. (Fall, Spring, Summer)**

The role of nutrients in maintenance of physiological well-being. Application of nutrition principles to the individual and family as well as to some selected problems.

* This college credit course is not intended for transfer and may not be applied toward the A.A. degree.

Δ Technology-Across-the Curriculum Course

† Courses listed with this symbol contain an oral communication component and may be used to satisfy the Speaking-Across-the-Curriculum requirement.

‡ This college credit course qualifies as having an international and/or diversity focus for Teacher Education Programs common prerequisites.