ENGINEERING TECHNOLOGY (EGT)

EGT 102 Programming for Engineering Technology Credits: 3
Typically Offered: Fall, Spring.
Course Description: Fundamental concepts about computers and approaches to computer programming including top-down design, selection control structures (if else, switch statements), repetition control structures (while, for, and do while loops), simple data types, arrays, strings, etc. Study of selected computer programming language.

EGT 103 Electronics Engineering Technology Fundamentals Credits: 1
Typically Offered: Fall, Spring.
Course Description: Introduction to electronics engineering technology concepts, OSHA safety, ethics, and career potentials. Study of teamwork, diversity and globalization, quality, timeliness, continuous improvement and lifelong learning.

EGT 105 Introduction to Architecture Credits: 3
Typically Offered: Fall, Spring.
Course Description: This course introduces to the student and understanding and appreciation of architecture and human built environment through a broad examination of cultural and aesthetic paradigms. The student will be informed of the historic legacy and value of architecture; how it impacts society today and daily lives. Three hours lecture.

EGT 110 ET Fundamentals and Critical Thinking Credits: 3
Typically Offered: Fall.
Course Description: Introduction to engineering technology concepts, ethics, career potentials, and critical thinking. Study of teamwork, diversity and globalization, quality, timeliness, continuous improvement and lifelong learning, methodology of critical thinking and required mathematics and physics knowledge. Three hours lecture.

EGT 202 Surveying I Credits: 3
Typically Offered: Fall.
Course Description: Introduction to the basic principles of plane surveying with applications to engineering and construction problems; uses laboratory periods for in-the-field applications of introductory surveying techniques. Relevant computer software will be used. Two hours lecture, three hours lab. **Prerequisite(s):** Credit or concurrent enrollment in both MAT 116 and MAT 119.

EGT 205 Computer-Aided Drafting I Credits: 3
Typically Offered: Fall, Spring.
Course Description: Techniques in drafting with computer applications. Students will use a CAD software to produce mechanical, electrical and/or architectural drawings and will explore other software with their applications. The emphasis is on orthographic projections, sections, auxiliary views, dimensioning, component libraries and the applications of drafting using descriptive geometry. Two hours lecture, three hours lab.

EGT 215 Computer-Aided Drafting II Credits: 3
Typically Offered: Fall, Spring.
Course Description: Advanced techniques in drafting with computer applications. Students expand their drafting skills by creating computer generated multi-detailed drawings using 3-D techniques. Architectural, structural, mechanical, and/or electrical applications will be discussed with emphasis in detailing, tolerances, and symbol libraries. Importing/exporting of files, customizing the CAD software, and productivity techniques will be used. Principles of drawing for residential structures using various construction materials and methods will be included. Two hours lecture, three hours lab. **Prerequisite(s):** EGT 205.

EGT 220 Engineering Materials Credits: 3
Typically Offered: Fall.
Course Description: An introduction to the relationship between structure, processing and properties of materials; including atomic structure, strain hardening and annealing, solidification, ferrous and non-ferrous alloys, ceramic materials, polymers, composite materials, behavior of materials, and protection against deterioration of materials.

EGT 225 Computer-Aided Manufacturing Credits: 3
Typically Offered: Spring.
Course Description: Application of computer assistance in manufacturing process; machine process control, inventory and material handling, robotics and automated assembly, product design and part grouping in relation to total manufacturing operation. **Prerequisite(s):** EGT 215.

EGT 260 Statics Credits: 3
Typically Offered: Fall.
Course Description: Fundamentals of statics; static equilibrium; topics of study include elements of statics in two and three dimensions; laws of equilibrium applied to structures and machines. **Prerequisite(s):** MAT 119.

EGT 265 Engineering Statics Credits: 3
Typically Offered: Fall.
Course Description: Composition and resolution of forces; equilibrium of force systems; application of the principles of statics to problems, including force analyses of simple structures. Centroids; moments of inertia. **Prerequisite(s):** MAT 167 and PHY 210.

EGT 283 Introduction to Research Methods in Engineering Technology Credits: 1-2
Typically Offered: Departmental Discretion.
Course Description: Introduction to basic research in engineering technology. Individual and team projects involving methods for solving engineering technology related research problems. **Prerequisite(s):** Department chairperson's approval.

EGT 290 ET Practicum/Co-op Credits: 3
Typically Offered: Spring.
Course Description: Intended for advanced students working full-time or part-time for a company in a job related to their major, which reinforces and extends knowledge and skills. Requires periodic progress reports, supervisor evaluation and a formal final report addressing the experience and the educational benefits derived.

EGT 302 Electronic Surveying Credits: 4
Typically Offered: Spring.
Course Description: Land surveying work utilizing electronic surveying equipment including but not limited to: total station with data collector, topographic surveying utilizing data collection down-loaded into software program utilizing AutoCAD for topographic contouring, utilization of collected data for microstation mapping, utilization of GPS equipment for traversing and also techniques of GIS mapping. **Prerequisite(s):** EGT 202 and credit or concurrent enrollment in EGT 205.

EGT 310 Environmental Regulations and Pollution Abatement Technology Credits: 3
Typically Offered: Fall.
Course Description: Studies existing and upcoming environmental regulations and pollution abatement technology as it pertains to soil, solid waste, air, and water. Laboratory exercises include case studies at pollution abatement facilities and the degree of efficiency and effectiveness of these systems. Two hours lecture, three hours lab. **Prerequisite(s):** EGT 102, CET 105, and CHE 104.

EGT 325 Machine Parts and Mechanical Design Credits: 3
Typically Offered: Spring.
Course Description: Introduction to the design and analysis of machine elements, such as shafting, springs, screws, belts, brakes, clutches, gears, and bearings. Emphasis on materials, loads, stress, strain, deflection, and quality. **Prerequisite(s):** EGT 260.

EGT 345 3D Modeling and Design Processes Credits: 3
Typically Offered: Spring.
Course Description: This course will investigate the creation and manipulation of three-dimensional forms and environments using experimental methods - primarily digitally based methods coupled with new forms of output such as 3D printing. Two hours lecture, three hours lab. **Prerequisite(s):** EGT 215.

EGT 350 Technical Report Writing Credits: 3
Typically Offered: Spring.
Course Description: Studies various forms of reports; includes practical projects in preparing reports of various lengths and degrees of complexity and oral presentation of report material; emphasizes clear communication of technical ideas. **Prerequisite(s):** ENG 104.

EGT 356 Fluids and Hydraulics Credits: 3
Typically Offered: Spring.
Course Description: Introduction to fluid mechanics including fluid statics and elementary fluid dynamics; includes energy equations of steady flow, steady flow of incompressible fluids in pipes, and open channel flow. Three hours lecture. **Prerequisite(s):** PHY 110 and credit or concurrent enrollment in MAT 147.

EGT 370 Financial Aspects of Engineering Projects Credits: 2
Typically Offered: Spring.
Course Description: Principles of engineering decision making process, including simple and compound interest calculations, equivalence, present worth, uniform annual cost, rate of return, depreciation, equipment replacement, and competing projects. **Prerequisite(s):** MAT 116.

EGT 390 ET Seminar Credits: 2
Typically Offered: Fall.
Course Description: Provide the students with the basic knowledge and skills needed as an employee and prepare them to be workforce ready. The course covers personal finance, time management, job hunting skills, basic business structure, employee characters, etc.

EGT 400 Dynamics Credits: 3
Typically Offered: Departmental Discretion.
Course Description: Motion of a particle; kinetics of rigid bodies; work and energy; impulse and momentum; impact. **Prerequisite(s):** EGT 265.

EGT 440 Thermodynamics Credits: 3
Typically Offered: Departmental Discretion.
Course Description: Fluid properties, work and heat, first law, second law, entropy, applications to vapor, and ideal gas processes. **Prerequisite(s):** EGT 260 or PHY 210.

EGT 450 Independent Research/Project Credits: 1-4
Typically Offered: Fall, Spring, Summer.
Course Description: Investigation of a research problem, project, or topic on an individual conference basis. **Prerequisite(s):** Declared engineering technology major, a minimum of 2.5 GPA in major field, and department chairperson's approval.

EGT 490 Engineering Technology Internship Credits: 1-4
Typically Offered: Fall, Spring, Summer.
Course Description: Intended for advanced students working full-time or part-time for a company in a job related to their major, which reinforces and extends knowledge and skills. Requires periodic progress reports, supervisor evaluation and a formal final report addressing the experience and the educational benefits derived. May be repeated for a maximum of 4 credit hours. **Prerequisite(s):** Junior or Senior standing, declared engineering technology major, a minimum of 2.5 GPA, and department chairperson's approval.