Engineering Technology (ENGT)

ENGT 2010. Introduction to Engineering Technology. 3 Hours.
Introduction to engineering and engineering technology disciplines that form the basis for a variety of career opportunities; engineering design as creative problem solving; lessons from design failures; professionalism and ethics; and problem solving using industry standard software.

ENGT 2500. Engineering Graphics for Design. 3 Hours.
An introduction to engineering design and three-dimensional visualization, geometric construction, graphical projection and sketching, descriptive geometry, and computer graphics.

ENGT 2510. Statistics in Engineering Technology. 3 Hours.
Study and application of probability theory in the solution of industrial and manufacturing problems. Topics include descriptive statistics, hypothesis testing, probability and the normal curve, inferential statistics, confidence intervals and computer applications.

ENGT 2520. Engineering Economics. 3 Hours.
Prerequisites: MATH 1111, 1112, or 1113. Deals with aspects of investment analysis relating to equipment justification, retirement and replacement in industry; includes the evaluation of decision alternatives using different economic criteria.

ENGT 2530. Statics. 3 Hours.
Prerequisite: PHYS 1111K or 2211K. Selected topics of statics including equilibrium conditions, summation of forces and moment of a force in 2D and 3D; centroid, distributed loads, internal forces in trusses, frames and machines, and shear and moment diagrams in beams.

ENGT 3100. Six Sigma and Lean Manufacturing. 3 Hours.
A combination of lean manufacturing and Six Sigma to learn how to use collaborative team effort to improve performance by systematically removing waste and reducing variation.

ENGT 3120. Plant Layout and Material Handling. 3 Hours.
A study of using material flow in facility design and facility location for optimization of facility performance.

ENGT 3130. Industrial Cost Control. 3 Hours.
Examination of the factors associated with cost measurement and control in both manufacturing and non-manufacturing industries.

ENGT 3140. Simulation Modeling of Industrial Systems. 3 Hours.
Prerequisite: CS 1340 or CS 1301 or MATH 2261. Study of computer simulation and modeling analysis and its application to manufacturing, industrial, inventory, and distribution systems, including the use of statistical techniques.

ENGT 3150. Supply Chain and Logistics Concepts. 3 Hours.
Principles of decision making and problem solving to reduce challenges and optimize solutions around purchasing, inventory, and transportation.

ENGT 3500. Engineering Graphics for Design II. 3 Hours.
Prerequisite: ENGT 2500 and MATH 1111. Detail and assembly drawings of machines and machine elements including the design and fabrication of machine parts using geometric dimensioning and tolerancing; parametric design and solid modeling software is used.

ENGT 3510. Advanced Statistics in Engineering Technology. 3 Hours.
Prerequisite: ENGT 2510. Use statistical theory to solve industrial and manufacturing problems, including chi-squared contingency tables and goodness of fit tests, regression analysis, one-way and two-way ANOVA, multiple range tests, and experimental design,.

ENGT 3520. Industrial Safety Engineering. 3 Hours.
Introduction to the principles and practices of accident prevention and industrial hygiene and safety with emphasis on OSHA requirements.

ENGT 3530. Introduction to Manufacturing Systems. 3 Hours.
Study of methods to analyze manufacturing systems and components including material flow and storage, information flow, capacities and times and duration of events. Topics include optimization and linear and dynamic systems, factory planning and scheduling.

ENGT 4100. Motion and Time Study. 3 Hours.
Prerequisite: ENGT 2510. Covers work measurements and methods including the use of standards, value engineering methods design, time studies and ergonomics and the use of scientific methods and graphical tools toe examine efficiency of work methods and to improve prductivity and performance.

ENGT 4110. Industrial Automation. 3 Hours.
A study of the applications of industrial automation systems, including identification of system requirements, equipment integration, motors, controllers, and sensors. Include lab fee.

ENGT 4120. Project Management. 3 Hours.
Study of the concepts and methodologies used in industrial and production environment that lead to successful project completion. Topics covered include project cycles roles, time-cost tradeoff, resource allocation, and performance measurement.

ENGT 4500. Technical Project Proposal. 1 Hour.
Taken the fall of senior year, this capstone project proposal course provides students with the opportunity to work with a faculty member or local business participant in collaboration with faculty member input to design a project that reflects the knowledge and skills developed from the curriculum. Includes lab fee.

ENGT 4510. Basic Electricity and Electronics. 3 Hours.
Prerequisite: PHYS 1112k or 2212K and MATH 2261. Introduction to the principals of electricity and electrons including applications and problem solving surrounding AC and DC circuits, series and parallel circuits, electrical components, magnetism and power. Includes lab fee.

ENGT 4520. Applied Thermodynamics. 3 Hours.
Prerequisites: PHYS 1112K or 2212K and MATH 2261. Application of thermodynamics to engineering systems for both steady and transient processes.

ENGT 4550. Technical Project Lab. 2 Hours.
A continuation of ENGT 4500 where student will complete their proposed hands-on project; students are expected to spend significant amount of time outside of a typical classroom environment. Includes lab fee.

ENGT 4950. Directed Study in Engineering Technology. 1-3 Hours.
Prerequisite: Junior standing; permission of instructor and Department Head. Supervised investigation of a specific problem and preparation of a final report agreed upon by student and instructor. Three hours may be substitute for ENGT 4980 and 4990. Includes lab fee.