

ENGINEERING TECHNOLOGY (ENGT)

ENGT 12005 APPLICATIONS IN COMPUTER-AIDED DESIGN 2 Credit Hours

Course for training on the use of a popular, computer-aided drafting and design software. Practice with the advanced features of the software applicable to modern design in the graphics, mechanical, industrial and electronics fields.

Prerequisite: None.

Schedule Type: Lecture

Contact Hours: 2 lecture

Grade Mode: Standard Letter

ENGT 22000 STATISTICAL PROCESS CONTROL 4 Credit Hours

Process variability, process monitoring, statistical methods using control charts for variables and attributes; acceptance sampling plans; process capability, process adjustment, process improvement.

Prerequisite: Special approval.

Schedule Type: Lecture

Contact Hours: 4 lecture

Grade Mode: Standard Letter

ENGT 22003 SUPERVISION AND LABOR RELATIONS 5 Credit Hours

Practical methods and techniques for improving supervision and labor relations in industry. Personnel and performance evaluation, implementing policy, labor contracts, collective bargaining, wage and salary administration.

Prerequisite: None.

Schedule Type: Lecture

Contact Hours: 5 lecture

Grade Mode: Standard Letter

ENGT 22006 ECONOMIC DECISION ANALYSIS 3 Credit Hours

Economic decision making for industrial engineering technology with applications emphasis, estimating economic elements, interest and economic equivalence, methods of comparing alternatives and evaluating replacement alternatives.

Prerequisite: None.

Schedule Type: Lecture

Contact Hours: 3 lecture

Grade Mode: Standard Letter

Attributes: TAG Engineering

ENGT 22010 COMPUTER INTEGRATED MANUFACTURING 3 Credit Hours

Planning, developing and implementing a strategy to control and coordinate all the engineering production and business operations within a manufacturing enterprise.

Prerequisite: None.

Schedule Type: Lecture

Contact Hours: 3 lecture

Grade Mode: Standard Letter

ENGT 23099 ENGINEERING TECHNOLOGY DESIGN PROJECT (ELR) 3 Credit Hours

A practical, hands-on experience that emphasizes the integration of analytical and design skills acquired in companion courses. Students work in teams under direct faculty supervision to pursue creative and challenging projects within the engineering discipline. Engineering communication (e.g., reports, oral presentations, portfolio development) are covered. The lecture sessions include discussions on professional and ethical responsibilities, including a respect for diversity.

Pre/corequisite: EERT 22014.

Schedule Type: Lecture, Project or Capstone

Contact Hours: 1 lecture, 2 other

Grade Mode: Standard Letter

Attributes: Experiential Learning Requirement

ENGT 30000 ADVANCED MANUFACTURING 3 Credit Hours

This course will introduce students to the concepts of advanced manufacturing technologies, processes and equipment. Covered topics include automation and process control, flexible manufacturing systems, and manufacturing using additive processes such as 3D printing. Students will learn hands on programming and operation of relevant equipment during the laboratory sessions.

Prerequisite: Junior standing.

Schedule Type: Combined Lecture and Lab

Contact Hours: 2 lecture, 2 lab

Grade Mode: Standard Letter

ENGT 31032 POWER TECHNOLOGY 3 Credit Hours

Principles of energy conversion and power application. Overview of basic heat engines, machines and transmission devices. Alternative energy systems and conservation techniques.

Prerequisite: PHY 12202 or PHY 13002 or PHY 13012.

Schedule Type: Laboratory, Lecture, Combined Lecture and Lab

Contact Hours: 2 lecture, 2 lab

Grade Mode: Standard Letter

ENGT 32002 MATERIALS AND PROCESSES II 3 Credit Hours

Advanced study and practice in materials and processes. Emphasis will be upon developing skills and knowledge in producing a product and conducting problem solving activities.

Prerequisite: MERT 12005.

Schedule Type: Lecture

Contact Hours: 3 lecture

Grade Mode: Standard Letter

ENGT 32006 ECONOMIC DECISION ANALYSIS FOR ENGINEERING TECHNOLOGY 3 Credit Hours

Economic decision making for engineering technology with applications emphasis, estimating economic elements, interest and economic equivalence, methods of comparing alternatives and evaluating replacement alternatives using Benefit/Cost Analysis, Present and Future Worth, Annual Worth, Internal Rate of Return etc. Practical applications of cost concepts and the application towards the different phases of manufacturing or project implementation.

Prerequisite: MATH 11010.

Schedule Type: Lecture

Contact Hours: 3 lecture

Grade Mode: Standard Letter

Attributes: TAG Engineering

ENGT 32101 POLYMERS I 3 Credit Hours

Description of various polymers, thermoplastics and thermosets. Processes used to produce products. Outline of polymer chemistry including methods of testing and identification.

Prerequisite: None.

Schedule Type: Lecture

Contact Hours: 3 lecture

Grade Mode: Standard Letter

ENGT 33000 INTRODUCTION TO PROGRAMMABLE LOGIC CONTROLLERS 3 Credit Hours

An introduction to Programmable Logic Controllers (PLC), focusing on understanding the principles of how PLCs work and providing practical information and skills about programming and troubleshooting a PLC system. Simulators relating to popular PLCs used in industry will be utilized for practicing programming and troubleshooting.

Prerequisite: EERT 12010 or EERT 22014 or EERT 32003.

Schedule Type: Laboratory, Lecture

Contact Hours: 2 lecture, 2 lab

Grade Mode: Standard Letter

ENGT 33010 COMPUTER HARDWARE FOR ANIMATION 3 Credit Hours

Students will gain a complete, step-by-step approach for learning the fundamentals of supporting and troubleshooting computer hardware. Throughout this course, students will learn the technical skills for PC configuration and troubleshooting. Finally, the students will be exposed to the concepts of Animation and Design through exploring Deep learning concepts, GPUs benchmark tests, peripherals and gaming platforms.

Prerequisite: Junior standing.

Schedule Type: Laboratory, Lecture, Combined Lecture and Lab

Contact Hours: 2 lecture, 2 lab

Grade Mode: Standard Letter

ENGT 33016 PC/NETWORK ENGINEERING AND TROUBLESHOOTING 3 Credit Hours

Covers the service, maintenance, upgrade and optimization of personal computers. Specification, installation and maintenance of local area networks are covered. Students learn communication protocols and network architecture.

Prerequisite: EERT 22014 or EERT 32003.

Schedule Type: Laboratory, Lecture, Combined Lecture and Lab

Contact Hours: 3 other

Grade Mode: Standard Letter

ENGT 33095 SPECIAL TOPICS IN ENGINEERING TECHNOLOGY 1-4 Credit Hours

Special topics of immediate interest in engineering technology.

Prerequisite: Junior standing.

Schedule Type: Lecture

Contact Hours: 1-4 lecture

Grade Mode: Standard Letter

ENGT 33225 INDUSTRIAL CONTROL SYSTEMS 3 Credit Hours

The application of electronics to the control of industrial machines and processes. Includes laboratory.

Prerequisite: PHY 12202 or PHY 13002 or PHY 13012.

Schedule Type: Laboratory, Lecture, Combined Lecture and Lab

Contact Hours: 2 lecture, 2 lab

Grade Mode: Standard Letter

ENGT 33363 MATERIALS SCIENCE AND TECHNOLOGY 3 Credit Hours

Study of nature and family of engineering materials, focuses on understanding the relationships among structure, properties, processing, and applications of materials.

Prerequisite: Junior standing.

Schedule Type: Lecture

Contact Hours: 3 lecture

Grade Mode: Standard Letter

ENGT 42003 LEAN AND SIX SIGMA FOR COMPETITIVE MANUFACTURING 3 Credit Hours

Designed to provide a better understanding of the components and underlying philosophy of Theory of Constraints, Lean, and Six Sigma and how the elements and philosophies work together to support competitive manufacturing systems.

Prerequisite: None.

Schedule Type: Lecture

Contact Hours: 3 lecture

Grade Mode: Standard Letter

ENGT 42195 TRAINING TOPICS IN TECHNOLOGY 1-4 Credit Hours

(Repeatable for credit) Specialized advanced instruction oriented primarily to the theoretical base and application of current technology developed by experts in the specific technology. This course requires substantial base knowledge.

Prerequisite: Special approval.

Schedule Type: Lecture

Contact Hours: 1-4 lecture

Grade Mode: Standard Letter

ENGT 43092 ENGINEERING TECHNOLOGY PRACTICUM (ELR) 1-3 Credit Hours

(Repeatable for credit) Supervised work experience in an engineering technology related field. Student may work 10 hours per week for 15 weeks, or 150 work hours total per 15-week semester.

Prerequisite: Junior standing; department approval.

Schedule Type: Practical Experience

Contact Hours: 3-9 other

Grade Mode: Satisfactory/Unsatisfactory

Attributes: Experiential Learning Requirement

ENGT 43096 INDIVIDUAL INVESTIGATION IN APPLIED SCIENCE AND TECHNOLOGY 1-3 Credit Hours

(Repeatable for credit) Work study of an individual nature on a topic in a field of applied science and technology.

Prerequisite: Junior standing; and special approval.

Schedule Type: Individual Investigation

Contact Hours: 1-3 other

Grade Mode: Standard Letter-IP

ENGT 43099 ENGINEERING TECHNOLOGY CAPSTONE (ELR) 3 Credit Hours

This course provides students with an integrative experience, where they can apply their knowledge and skills acquired through the coursework in Engineering Technology. Students will learn how to fit in their competencies in a real-world scenario and reach toward their educational and/or career goals. Emerging trends, challenges, and opportunities in the career fields pertinent to Engineering Technology will also be addressed. Students will maintain an electronic portfolio as part of their learning.

Prerequisite: Senior standing.

Schedule Type: Project or Capstone

Contact Hours: 3 other

Grade Mode: Standard Letter

Attributes: Experiential Learning Requirement

ENGT 43700 COMPUTER-INTEGRATED MANUFACTURING 3 Credit Hours

Study of the computer-integrated manufacturing system as it relates to product design, estimating inventory, machining and assembly, quality control and distribution.

Prerequisite: MERT 12001.

Schedule Type: Laboratory, Lecture, Combined Lecture and Lab

Contact Hours: 3 lecture, 2 lab

Grade Mode: Standard Letter