

# ETI: ENGINEERING TECH INDUST

Courses	Credit(s)	Contact	Lab
ETI 1110. INTRODUCTION TO QUALITY ASSURANCE. INTRODUCTION TO QUALITY ASSURANCE This course defines the role of quality in an industrial environment. Topics include the use of quality management techniques, quality philosophies, process development, techniques used for evaluation, approaches used on continuous operations, methods used to control quality, the responsibility of quality assurance during engineering, and manufacturing, and the International Organization for Standardization (ISO) series of standards.	3	3	0
ETI 1151C. PRINT READING FOR TRADES. PRINT READING FOR TRADES This course provides a comprehensive and practical approach to reading prints as associated to current engineering and manufacturing practice with an emphasis of standardization (ASME, ISO, CADD, AWS). Major topics include: CADD practices used to create drawings, using scales and precision measuring equipment, manufacturing materials and processes, 2D and 3D dimensioning print views, GD&T, welding processes and representations, and electrical diagrams and schematics. (Special Fee: \$60.00).	3	2	2
ETI 1486C. INTRODUCTION TO AUTOMATED WAREHOUSING. INTRODUCTION TO AUTOMATED WAREHOUSING An industrial technology overview course covering the basic knowledge and skills needed for supply chain technicians to successfully work in an automated distribution center. Introduction to the troubleshooting and maintenance of electro-mechanical systems is a major focus of this course. (Special Fee: \$55.00).	3	3	1
ETI 1622. CONCEPTS OF LEAN MANUFACTURING AND SIX SIGMA. CONCEPTS OF LEAN MANUFACTURING AND SIX SIGMA Prerequisite: ETI 1110 This course introduces the basic principles and theories of lean manufacturing. Lean manufacturing involves identifying and eliminating non-value-adding activities in design, production, and supply chain management. The coverage includes topics related to cost reduction, work-free manufacturing, continuous flow, kaizen, the 5s's, value stream mapping, modular manufacturing, and Overall Equipment Effectiveness (OEE).	3	3	0
ETI 1701. INDUSTRIAL SAFETY. INDUSTRIAL SAFETY This course focuses on the theories and principles of occupational safety and health in a practical and useful real world job related setting. The major topics include the occupational safety and health administration (OSHA) compliance, safety standards, code enforcement, ergonomic hazards, mechanical hazards, falling, lifting, electrical hazards, fire hazards, industrial hygiene, radiation, noise, emergencies, and environmental safety.	3	3	0
ETI 2401C. MACHINING FUNDAMENTALS. MACHINING FUNDAMENTALS Prerequisite: MTB 2321C and ETI 1701 This course introduces fundamentals and safe use of precision machining technology and its many career opportunities. Topics include numerous machining operations, setups, and procedures. How machine tools (manual, automatic, and computer controlled) operate, advantages and disadvantages of various machining techniques, apply principles of precision machining to measuring work pieces, drawing interpretation, inspection, bench work and layout, power saws, drilling machines, lathes and turning machines, milling machines and grinding machines. Aspects of maintenance, mechanical troubleshooting, and failure analysis of mechanical systems are also covered. (Special Fee: \$55.00).	3	3	1
ETI 2408C. SURVEY OF WELDING. SURVEY OF WELDING Prerequisite: ETI 1701 and ETI 1151C This survey course covers the principles and practical application of the major manual and semi-automatic welding and cutting processes. The emphasis of this course is on the proper selection and use of each welding process. Topics include: Welding codes and standards, safety, different shielded metal arc welding (SMAW), gas metal arc welding (GMAW), gas tungsten arc welding (GTAW), oxy-acetylene welding (OAW), cutting and gouging, and welding testing and inspection. (Special Fee: \$75.00).	3	2	2
ETI 2420. MANUFACTURING MATERIALS AND PROCESSES. MANUFACTURING MATERIALS AND PROCESSES This course provides coverage of the characteristics, fundamentals, and manufacturing properties of materials, including metal alloys, polymers, ceramics, and composites. Metal casting, Shaping, and forming processes are covered along with the machines needed for manufacturing.	3	3	0
ETI 2501C. MECHANICS AND MECHANICAL SYSTEMS. MECHANICS AND MECHANICAL SYSTEMS Prerequisite: ETI 1701 This course provides a comprehensive and practical introduction to the concepts, principles, and equipment used in industrial mechanical systems. Major topics include: workplace safety and tools, precision measurement, print reading, fastening methods, rigging and lifting, mechanical drives, and preventive maintenance programs. Other topics include an overview of principles and applications for electrical, hydraulic and pneumatic systems. Content will be covered using classroom lecture techniques combined with hands-on laboratory sessions. (Special Fee: \$60.00).	3	2	2
ETI 2542C. INDUSTRY 4.0 AND AUTOMATION CONTROL WITH PLCS. INDUSTRY 4.0 AND AUTOMATION CONTROL WITH PLCS Prerequisite: EET 1084C or department approval. An introductory coverage of fundamentals of PLCs and PLC networking with emphasis on Industry 4.0 technology, smart automation, logic controllers, and process control. Students will explore effective network communication schemes between PLC system components, programming, and troubleshooting. Laboratory projects will provide an in-depth understanding and hands-on experience with use of Allen-Bradley processor, RSLogix software, data base collection and manipulation.	3	2	2

ETI 2644. PRODUCTION AND INVENTORY CONTROL. 3 3 0

PRODUCTION AND INVENTORY CONTROL In this course, students will learn how to use manufacturing planning and control systems to coordinate material, labor, capacity and other resources to optimize manufacturing operations. Students also learn the key features of automated systems that can be used to manage the supply chain process. The course will cover production planning and inventory control including scheduling, MRP, and capacity planning.

ETI 2843C. MOTORS AND CONTROLS. 3 3 1

MOTORS AND CONTROLS Prerequisite: EET 1084C and ETI 1701 An entry-level course to study devices and components and their operations converting electrical energy into mechanical motion such as AC and DC motors, transformers, generators, servo and stepping motors, solenoids, linear motors and actuators and how electronic motor control systems can be used to improve efficiency. (Special Fee: \$50.00).

ETI 2943. PRACTICUM IN TECH INDUSTRY. 1-3 variable

PRACTICUM IN TECH INDUSTRY This is a planned work-based experience that provides students with an opportunity to fine-tune skill sets learned in course work and enhance workplace skills through supervised practical experiences related to their career objectives. The number of credit hours awarded will be determined by faculty as described in current articulation agreements. May be repeated for credit up to a maximum of 21 hours, but grade forgiveness cannot be applied.

ETI 3116. QUALITY ASSURANCE WITH TESTING METHODS. 3 3 0

QUALITY ASSURANCE WITH TESTING METHODS Prerequisites: Minimum grade of C in MAC 2312 A broad understanding of the quality assurance and control of electronic products, covering all aspects of quality assurance for components used in electronic devices, improve product quality without increasing product cost. Apply Six Sigma process, methodologies, and tools to develop robust engineering products, processes, and services. Minimum grade of C required if used to satisfy Electrical and Computer Engineering Technology, B.S. Degree requirement.

ETI 4448C. APPLIED PROJECT MANAGEMENT. 3 2 1

APPLIED PROJECT MANAGEMENT Prerequisite: Admission to the B.A.S. Computing Technology and Software Development program. This course covers statement of work, activity decisions, timelines, scheduling, and resource allocation methods in software development projects. Techniques will be appropriate for large and small projects within commercial, academic, or non-profit organizations (Special Fee: \$42.00).