TECHNOLOGY (TEC)

TEC 101 TECHNICAL DRAWING
3, 2/3
Drawing techniques and part modeling techniques for 3D parametric solid modeling systems; multiview projections using 2- and 3-D geometry, drawing annotation including text, dimensioning and layouts of a variety of drawing types suitable for plotting to scale; part modeling techniques including Industry-standard parametric modeling; introduction to geometric dimensioning and tolerancing; required for industrial technology, electrical engineering technology (smart grid), mechanical engineering technology, and technology education majors. Offered Every Semester.

TEC 150 TECHNOLOGY IN EVERYDAY LIFE
3, 3/0
The applied physics and technology involved in everyday life in order to gain an understanding of basic science and engineering principles; Newton's laws of motion as they apply to an ice skater and bumper cars; principles of fluid mechanics like water flowing from a garden hose and the buoyancy of ships; heat transfer and phase transitions like water in its three phases and home heating systems; thermodynamic efficiency of automobile engines as well as air conditioners; resonance and mechanical waves developed by music instruments; basic electricity and its many applications from how it is produced by water and wind to how it is used to produce light; light and optics, for example, splitting the colors of sunlight to focusing light in a camera lens. Offered occasionally.

TEC 200 TOTAL QUALITY MANAGEMENT
3, 3/0
Prerequisite: Sophomore status. Fundamental concepts of total quality management; managerial commitment; organization mission and structure; quality problem-solving tools; variation, quality costs; vendor-customer relationships; quality evaluation techniques; quality philosophies of Deming, Crosby, and others. Offered fall only.

TEC 201 MATERIALS PROCESSING
3, 2/3
Prerequisite: TEC 101. Processes and problems associated with the conversion of materials into useful forms and goods; laboratory activities exemplify the major processes studied. Offered Every Semester.

TEC 253 FUNDAMENTALS OF BOAT BUILDING
3, 0/6
TEC 253

TEC 260 DEVELOPMENT OF TECHNOLOGY
3, 3/0
The history of science and technology; the evolution of technology and its effects on humanity, for example, advances in agriculture and health care; era-specific technology such as weapons developed for defense and building processes to construct small communities and large cities; evolution of energy and power leading to current alternatives such as solar energy, wind power, hydroelectric power, fuel cells, and biomass energy; how technology has affected and been affected by ecology, climatology, health care, ethics, war, and politics. Offered occasionally.

TEC 301 MATERIALS PROCESSING II
3, 2/3
Prerequisite: TEC 201. Continuation of TEC 201. Emphasis on numerical controlled and computerized numerical controlled materials processing. Offered occasionally.

TEC 302 CAD/CAM (COMPUTER AIDED DRAFTING/ COMPUTER AIDED MANUFACTURING)
3, 2/3
Prerequisites: TEC 101 and TEC 201. Using computers to facilitate the production processes of designing, drafting, production planning, cost estimating, and materials processing; using CAD software to create the database for part geometry, material selection, and process requirements; using CAM software to control machines, directly or indirectly, to produce the product. Offered fall only.

TEC 311 MATERIALS SCIENCE AND TESTING
3, 2/3
The origin of composition of industrial materials: metals and their alloys, woods, fuels, lubricants, cutting fluids, solvents, protective compounds or coatings, inks, adhesives, plastics, and ceramics; applications of testing procedures for identification and determination of physical and chemical properties suitable for specific industrial uses. Offered Every Semester.

TEC 312 MATERIALS MANAGEMENT
3, 2/3
Prerequisite: TEC 201. Production planning and control functions in industry; techniques and procedures of production planning, scheduling, dispatching, and control. Required for industrial technology majors. Offered spring only.

TEC 313 STATISTICAL QUALITY CONTROL
3, 3/0; IN23
Fundamentals of probability; sample space, events, probability distributions; binomial, Poisson, and normal distributions; application of probability in quality control; variable and attribute control charts; process capability studies; acceptance sampling; standard tables for sampling plans. Offered fall only.

TEC 314 ELECTROMECHANICS
3, 2/3
Fundamental laws of electric circuits; DC and AC circuits, application to electric power systems and electronics industry; fundamentals of electrical machinery, introduction to three-phase systems; laboratory experiments with electrical circuits and devices. Offered Every Semester.

TEC 319 TECHNOLOGY AND VALUES
3, 3/0
Prerequisite: Upper-division status. Social and ethical impacts of technology; the often conflicting roles of historical and current creators and users of technology; examination of selected current technical-ethical issues of societal importance. Offered occasionally.

TEC 321 MEASUREMENT SYSTEMS
3, 3/0
Prerequisite: TEC 313. Theory and application of measurement; tolerancing, variable, and attribute measurement devices; gauge variation, automated measurement input equipment, and gauge control systems. Offered fall only.

TEC 323 QUALITY IMPROVEMENT THROUGH DESIGN OF EXPERIMENTS
3, 3/0
Prerequisite: TEC 313. Various experimental designs applied to a manufacturing environment. One-, two-, and three-factor factorial designs; nested, partially nested, and repeated designs; simple and multiple linear regression techniques presented to enhance quality problem-solving ability. Offered spring only.

TEC 351 ENERGY SYSTEMS
3, 3/0
Prerequisites: MAT 124 and PHY 107. Energy and power from sources through conversion systems and mechanisms to the application of power for manufacturing. Offered fall only.

TEC 400 MARKETING
3, 3/0
Prerequisite: Upper-division status. Conceptual framework for marketing; the movement of goods and services through channels from source to consumer; product formulation; market research; prudent pricing; distribution channels; promotion systems. Industrial technology (manufacturing option) majors. Offered occasionally.

TEC 402 ERGONOMICS
3, 3/0
Prerequisite: Upper-division status. The interaction of people and machines; development and use of human factors information including sensory, cognitive, and psychomotor processes as they influence the design of displays, controls, and work space; environment and safety considerations necessary to achieve desired machine outputs. Offered fall only.

TEC 403 SYSTEMS ANALYSIS
3, 3/0; RE23
Prerequisite: Upper-division status. Fundamental concepts and analytical techniques of systems analysis; trends related to modeling, computer technology, feedback, and information systems; quantitative methods and their use in decision making in practical situations involving industrial, managerial, and technological settings. Offered spring only.

TEC 404 INDUSTRIAL SYSTEMS APPLICATIONS
3, 2/3
Prerequisite: Upper-division status. Investigation of management science and communication principles leading to a series of hands-on laboratory projects, case studies, and group problem-solving/decision-making activities; building positive management communications abilities as applied to the components of contemporary work settings; cultivation and personalization of leadership behaviors such as team building, coaching, and conflict resolution. Offered fall only.

TEC 405 MANUFACTURING TECHNOLOGY
3, 2/3
Prerequisites: TEC 312 and final semester senior status. Hands-on experience in the manufacturing cycle of a product from the engineering drawing stage through project and processing planning, prototype manufacture and testing; experience in setting time standards and taking time studies. Offered spring only.

TEC 430 INTRODUCTION TO COMPUTER-AIDED DRAFTING (CAD)
3, 0/0
TEC 430

TEC 460 PRODUCTION AND OPERATIONS MANAGEMENT
3, 0/0
TEC 460
Equivalent Course: BUS 460

TEC 465 SAFETY MANAGEMENT
3, 3/0
Prerequisite: Upper-division status. Development of the industrial safety movement; psychology in accident prevention; appraisal of accident cost factors, severity, and frequency; job safety analysis and corrective measures; plant inspection and preventive maintenance; storage and handling of materials; fire prevention; education and training of employees. Offered spring only.

TEC 488 QUALITY INTERNSHIP
1-12, 3/0
Prerequisite: Completion of 12 credit hours in quality minor or all TEC-prefixed courses in industrial technology quality option. Analysis of a quality problem at a local manufacturing/service organization on or off campus; evaluation is based on a formal written and oral report presentation. Offered Every Semester.

TEC 495 SPECIAL PROJECT
1-3, 0/0
Offered occasionally.

TEC 497 WORKSHOP
3, 0/0
Offered occasionally.

TEC 499 INDEPENDENT STUDY
2-6, 0/0
Offered Every Semester.

TEC 590 INDEPENDENT STUDY
1-3, 0/0

TEC 594 GRADUATE WORKSHOP
1-3, 0/0
Graduate workshop in Technology.

TEC 690 MASTER'S PROJECT
3, 0/0

TEC 695 MASTER'S THESIS
3, 0/0

TEC 721 THESIS/PROJECT CONTINUATION
0, 0/0

TEC 722 THESIS/PROJECT EXTENDED
0, 0/0