

Industrial Technology (IT, ITE)

Head of the Department: Professor Owens

Professor: Bostic

Associate Professor: Territo

Assistant Professors: Asoodeh, Beauvais, Bonnette, Bouchard, Clyburn

Instructors: Maureman, Rode

INDUSTRIAL TECHNOLOGY EDUCATION (ITE)

261. Transportation, Energy and Power Technology. Credit 3 hours. A study of modern transportation systems; energy-its sources, forms, and control; the conversion of energy into usable power through the various prime movers; and the impact of transportation, energy and power technology on our society.

272. Exploration of Construction Technology. Credit 3 hours. A broad-based systems-oriented course investigating all areas of the construction industry from planning to completion of light, heavy, industrial and civil construction, and the various careers associated with each area.

301. Technology and Society. Credit 3 hours. Prerequisite: Junior standing. A comprehensive study of technology and its effects on society.

302. Technology Education Management. Credit 3 hours. Prerequisite: Junior standing. A study of the principles of office management and laboratory layout for technology education. Studies of student advising, student organizations, professional organizations and fund raising techniques will also be conducted.

481. Materials, Methodology, and Curriculum Development in Industrial Technology Education. Credit 3 hours. Prerequisite: Junior standing. A study of curriculum and teaching materials, specialized equipment, and instructional methods utilized in technology education. The use of audio/video equipment, field trips, guest speakers, curriculum materials, and computers for technology education classroom/laboratories will be emphasized. **INDUSTRIAL TECHNOLOGY (IT)**

111. Engineering Drafting. Credit 3 hours. The basic elements of drafting: selection and use of instruments, lettering, applied geometry, freehand sketching, orthographic projection, sectioning, dimensioning, isometric and oblique pictorial representation, fastener symbols and simple auxiliary views. Two hours of lecture and two hours of laboratory a week. Laboratory fee: \$15.00.

112. Descriptive Geometry. Credit 3 hours. Prerequisite: Industrial Technology 111. Industrial and engineering application of design concepts involving the uses of points, planes, and lines; spatial relationships. The application of primary, secondary, and successive auxiliaries used in the various

engineering disciplines. Two hours of lecture and two hours of laboratory a week. Laboratory fee: \$15.00.

209. Special Topics. Credit 3 hours. Organized class or individual instruction. May be repeated when topics vary for a maximum of six credit hours.

215 [TIM 215]. Computer-Aided Drafting (CAD). Credit 3 hours. Prerequisites: Industrial Technology 111 and permission of instructor to enroll. Study of terminology, concepts, theories, and fundamental skills necessary to understand and operate a CAD system. Two hours of lecture and two hours of laboratory a week. Laboratory fee: \$15.00.

216. Advanced Computer-Aided Drafting and Design. Credit 3 hours. Prerequisites: Industrial Technology 215 and permission of instructor to enroll. An advanced study of the terminology, concepts, and theory relating to applications in solid model development and their analysis, LISP routines, and user system configuration. Two hours of lecture and two hours of laboratory per week. Laboratory fee: \$15.00

233. Introduction to Basic Electricity and Electronics. Credit 3 hours. The fundamental concepts of electricity and electronics that involve direct current (dc), alternating current (ac), series and parallel resistive circuits, network analysis, magnetism, inductance, capacitance, transformers, motors, residential wiring, electronic components, and various types of test equipment found in industry. Two hours of lecture and two hours of laboratory problem solving per week. Laboratory fee: \$15.00.

236. Advanced Electronics. Credit 3 hours. Prerequisite: Industrial Technology 233. The study of semiconductor electronics beginning with the diode, progressing through transistors, amplifiers, JFETs, MOSFETs, OP-AMPS, power supplies, oscillators, thyristors, and integrated circuits (ICs). Two hours of lecture and two hours of laboratory problem solving per week. Laboratory fee: \$15.00.

242. Materials and Processes. Credit 3 hours. An introductory study of materials and processes as applied to industrial materials with special emphasis on metals, plastics, woods and ceramics. Two hours of lecture and two hours of laboratory a week. Laboratory fee: \$15.00.

256. Principles and Metallurgy of Welding. Credit 3 hours. Theory and practice in oxy-fuel gas and electric arc welding processes with emphasis on preparation of joints, manipulation in various weld positions, and the selection and use of welding accessories and equipment. Two hours of lecture and two hours of laboratory a week. Laboratory fee: \$15.00.

262. Principles of Technology. Credit 3 hours. Prerequisite: Sophomore standing or permission of the Department Head. A course designed to help students perceive the interaction of science, technology, and society. Scientific theories and law are merged with technological skills through the study of mechanical, fluid, electrical, and thermal systems found in technological devices. Through experimentation, students learn that technology is the application of science to the solution of practical

problems. Two hours of lecture and two hours of laboratory a week.

264. Industrial Fluid Power. Credit 3 hours. Theory and practice of hydraulic and pneumatic power for industrial production. Functional examination of units: pumps, valves, boosters, etc. Simulated systems used to emphasize design and other industrial materials. Two hours of lecture and two hours of laboratory a week. Laboratory fee: \$15.00.

291. Industrial Internship. Prerequisite: Sophomore standing and permission of the Department Head. This course is a cooperative venture between Southeastern Louisiana University and a variety of industries. It combines the student's academic and technical preparation at the university with actual on-the-job experiences in approved modern industrial enterprises. For three (3) hours credit a student must be employed a minimum of 20 hours per week during a regular semester and a minimum of 40 hours per week during the summer.

292. Independent Study. Credit 3 hours. Prerequisites: An overall "B" average or recommendation by the faculty and approval of the Department Head. An honors course devoted to research and development through laboratory experimentation of selected problems of special interests. Enrollment limited.

302 [204]. Loss Prevention. Credit 3 hours. Prerequisites: Industrial Technology 233, 242 or 256. Development of, and comprehensive consideration of, current principles, practices, methods, and equipment in modern industrial safety and accident prevention.

304. Facilities Planning and Design. Credit 3 hours. Prerequisite: Industrial Technology 306 or permission of instructor. Principles, methods, and techniques for analyzing existing and proposed plant facilities. Problems in, and the relationships of, plant location, product analysis, product design, equipment selection, materials handling, plant arrangement and supplemental services.

306. Work Methods and Measurements. Credit 3 hours. Prerequisite: Industrial Technology 111 and 242. Process charting, operations analysis, standard data, predetermined times, work sampling, time studies, and wage incentives. Three hours of lecture a week.

309. Special Topics. Credit 3 hours. Organized class or individual instruction. May be repeated when topics vary for a maximum of six credit hours.

311. Industrial Design. Credit 3 hours. Prerequisites: Industrial Technology 112 and 242. A study of design principles as applied to systems design, product design, and machine-tool design. Two hours of lecture and two hours of laboratory a week. Laboratory fee: \$15.00.

322. Materials Science and Metallurgy. Credit 3 hours. Prerequisite: Industrial Technology 242. Study of the major materials used in industrial engineering, considering structure and properties, testing methods (destructive and nondestructive), and microscopic examination. Two hours of lecture and two

hours of laboratory a week. Laboratory fee: \$15.00.

331. Microcomputer Hardware. Credit 3 hours. Prerequisite: Industrial Technology 236 or Computer Science 257 with any physics lab/lecture sequence that includes electricity and magnetism, or Department Head approval. The study of the applications of hardware microelectronics for industrial uses of the computer. Two hours of lecture and two hours of laboratory a week. Laboratory fee: \$15.00.

351. Machine Tool Technology. Credit 3 hours. Prerequisite: Industrial Technology 111 and 242. Principles and practices of metal machining involving lathes, shapers, millers, planers, and precision grinders. Two hours of lecture and two hours of laboratory a week. Laboratory fee: \$15.00.

391. Industrial Internship. Credit 3-12 hours. Prerequisite: Permission of Department Head. Students receive on-the-job work experience with selected and approved industrial firms. For three hours credit a student must be employed a minimum of 20 hours per week during a regular semester and a minimum of 40 hours per week during the summer semester. Course may be repeated for a maximum of 12 credit hours.

402. Industrial Supervision. Credit 3 hours. Prerequisite: Junior standing. Types of industrial organizations and supervisory systems; responsibility, authority, duties, and qualifications of industrial supervisors.

407. Statistical Quality Assurance. Credit 3 hours. Prerequisite: Industrial Technology 306 and nine hours of Mathematics or permission of instructor. Principles and practices of quality control, theory of statistical sampling and related economic analysis, followed by control charts, acceptance and standard sampling plans, reliability, quality cost, and product liability.

408. Production Planning and Control. Credit 3 hours. Prerequisite: Junior standing. Organization and control of manufacturing processes and equipment; operation sequence planning; economic consideration of equipment selection; tooling and producing an item from design to distribution.

409. Special Topics. Credit 3 hours. Organized class or individual instruction. May be repeated when topics vary for a maximum of six credit hours.

442. Computer-Aided Manufacturing (CAM). Credit 3 hours. Prerequisites: A 200-level Computer Science course and Industrial Technology 351. A course designed to teach the use of the computer and peripheral equipment to create the data base for programming the operation of manufacturing equipment such as lathes, milling machines, drilling machines, and robots. Two hours of lecture and two hours of laboratory a week. Laboratory fee: \$15.00.

444. Industrial Robotics. Credit 3 hours. Prerequisite: Industrial Technology 236, Industrial Technology 264, and a 200-level Computer Science course. An overview of the current robotics industry starting with a brief history, followed by a review of the basic terms used in the field. The operation, installation,

and maintenance of pneumatic robot systems is included along with the operation and programming of the programmable controller. Two hours of lecture and two hours of laboratory a week. Laboratory fee: \$15.00. **INDUSTRIAL TECHNOLOGY HONORS COURSE (IT)**

492. Research and Development in Industrial Technology. Credit 3 hours. Prerequisites: An overall "B" average or recommendation by the faculty and approval of the Department Head. An honors course devoted to research and development through laboratory experimentation of selected problems of specific interest. Course may be repeated for a total of six hours with no more than three hours in any one semester. Enrollment limited.

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