

Electrical/Electronics Engineering Technology Course Descriptions

Major Core Course: Credits 42

EDTE 105 Electrical Circuit Technology I

Credit 3

This course introduces the fundamental concept of electrical circuits, including direct current (DC), voltage, power, resistance, inductance and capacitance. The application of Ohm's law, network analysis and electrical measurement are stressed. Prerequisite(s): Permission of the Department Head.

EDTE 202 Electronics I

Credit 3

This course provides an overview of solid-state electronics from basic components to advanced circuit analysis. Topics include diodes, bipolar transistor, field effect transistor (FET), thyristor, amplifiers and the application of the operation of amplifiers. Prerequisite(s): [EDTE 105](#) or permission of departmental head.

EDTE 205 Electrical Circuit Technology II

Credit 3

This course concentrates on the theory and analysis of alternating current (AC). Topics include sine waves, wave forms, transformers, transient analysis, reactance, resonance circuits and filters. Prerequisite(s): [EDTE 105](#) or permission of the department head.

EDTE 210 Electronic Troubleshooting Lab

Credit 3

This course provides students with guided experience in diagnosing, analyzing and repairing various electronic circuits and equipment. Emphasis is placed on problem-solving techniques, analysis and documentation. Prerequisite(s): [EDTE 202](#) and [EDTE 205](#) with a grade of at least "C" or permission of the department head.

EDTE 215 Electronics II

Credit 3

This course is a continuation of [EDTE 202](#). This is the second part of an electronics course designed for technology students and others needing an in-depth understanding of electronic circuit analysis and design. The primary emphasis of this class will be to cultivate an understanding of how modern electronic circuits work. Specific topics to be covered include differential and multistage amplifiers, amplifier frequency response and feedback, output stages, power amplifiers, a selection of analog integrated circuit topics, filters and tuned amplifiers, waveform-shaping circuits, and MOS digital circuits. Prerequisite(s): [EDTE 202](#) with a grade at least "C".

EDTE 216 Digital Electronics

Credit 3

This course provides an introduction to digital logics and circuits. Topics include number systems, Boolean algebra, logic circuits, digital design, multiplexers, encoders, flip-flop circuits, and digital circuit analysis. Prerequisite(s): [EDTE 105](#) or [EDTE 211](#) with grade of at least “C” or permission of the department head.

ETEE 303 Circuit Technology III

Credit 3

This course covers advanced network analysis and provides an introduction to the use and applications of Laplace and Fourier transforms, filter theory, and computer applications. Prerequisite(s): Junior Standing and [MATH 211](#). Lecture two hours. Laboratory two hours.

ETEE 314 Electric Power and Machinery

Credit 3

This course focus on the generation, transmission and distribution of electrical energy, theory and operation of transformers, DC machines, and AC machines including three phase synchronous, asynchronous, single phase and their equivalent circuits and performance analysis. Prerequisite(s): Junior standing and ETEE 202. Lecture two hours; laboratory two hours.

ETEE 335 Logic and Switching Circuits

Credit 3

This course will focus on the principles and application of asynchronous logic, encoder and decoder, control and programmable logic, multiplexer, demultiplexer, PLA, memory latches, systems and codes, counters, shift registers, computer arithmetic circuits, memory systems, static and dynamic RAM and ROMS, and interfacing. Prerequisite(s): Junior standing and [EDTE 216](#). Lecture two hours; laboratory two hours.

ETEE 346 Control Circuits

Credit 3

This course will focus on the study of open and closed loop control systems, principles of feedback control, analysis of system response and criteria of system stabilities and compensation. Prerequisite(s): [ETEE 303](#). Lecture two hours. Laboratory two hours.

ETEE 355 Advanced Electronic and Computer Networks

Credit 3

This is an introductory course in electronic circuits for computers that covers number systems, computer organization, assembly language programming, microprocessors, system components and interfacing concepts. Prerequisite(s): [ETEE 335](#). Lecture two hours; laboratory two hours.

ETEE 421 Instrumentation and Measurements

Credit 3

This course will focus on the fundamental concepts of mechanical and electronic measurement of distance, velocity, acceleration, time, pressure, force, strain. Introduction to development of measuring systems and calibration of these systems and the application of measuring systems to industrial technology. Prerequisite(s): [EDTE 212](#) and [MATH 112](#). Lecture two hours. Laboratory four hours.

ETEE 485 Design Technology I

Credit 3

This course will focus on the design process, including creativity, analysis, synthesis, and decision-making. It will also cover applications of analytical techniques, experimental results and individual or group design projects, emphasizing the synthesis of a design solution to meet performance specifications. Prerequisite(s): [ETEE 335](#), [ETEE 421](#) and senior standing. Lecture three hours.

ETEE 486 Design Technology II

Credit 3

This course will focus on individual or group design projects requiring the synthesis of analytical, experimental and manufacturer's data for the development of an electronic system. The course will require execution of the design in sufficient detail to permit construction and testing or evaluation of a prototype, model, or mock-up and consideration of reliability, safety, human factors, and economics of production. Prerequisite(s): [ETEE 485](#) Lecture one hour. Laboratory four hours. Computer applications will be required.

Technical Elective Courses Credits: 30

Group I: Credit 18

CMTE 319 Statics and Strength of Materials

Credit 3

This course is an introduction to structural behavior and structural theory. The course covers the development and application of the basic principles of statics and strength of materials as they relate to the analysis of building structures. Illustrations and examples of building structural components, i.e. foundations, columns, beams, etc., will enable construction students to visualize the connection between concepts and real buildings and materials. Prerequisite(s): [MATH 112](#) and [PHYS 121](#)

CSDP 222 Advanced Programming

Credit 4

This course covers advanced programming language features, including structured programming, top-down, and object-oriented techniques. Emphasis is placed on team projects and structured walk-throughs. Much of the work in this course involves the construction and debugging of

programs that accomplish realistic applications. Prerequisite(s): A grade of ‘C’ or better in [CSDP 221](#).

EDTE 111 Technology and Society

Credit 3

This course examines the nature of technology and society within the context of the designed world: its meaning, application, significance, the role it has played in our history and its importance in today’s technological society. Course content focuses on: the characteristics and scope of technology; the nature of technology within the context of the designed world; the design and development process; core concepts of technology; relationships and connections between technology and other fields; the cultural, social, economic, and political effects of technology; the effects of technology on the environment; and the role of society in the development and use of technology. Prerequisite(s): None. Lecture three hours. *Satisfies GEN ED Area VI: Emerging Issues.*

EDTE 131 Computer-Assisted Drawing and Design I (CAD)

Credit 3

The attributes of design, the engineering design process, and the basics of technical drawing are covered in this course. The design process is utilized to solve problems and design contemporary products. Basic technical drawing skills are developed, such as sketching, coordinate systems, the principles and theory of visualization, shape description, orthographic projection, basic descriptive geometry, axonometric drawings, and developments. Students use and apply computer-assisted drawing and design (CADD) software to produce basic technical drawings and three-dimensional designs. Engineering design and problem solving are used to research and develop renderings and solid three-dimensional models. Prerequisite(s): None. Lecture two hours. Laboratory two hours.

EDTE 132 Computer-Assisted Drawing and Design II (CAD)

Credit 3

This course covers advanced computer-assisted drawing and design software used to produce three-dimensional drawings. Engineering design and problem solving are used to research and develop renderings and animated wire-frame, surface, and solid three-dimensional models. The use of libraries of pre-drawn materials is also covered. Prerequisite(s): [EDTE 131](#) or permission of instructor. Lecture two hours. Laboratory two hours.

EDTE 225 Microprocessors

Credit 3

This course introduces microprocessors and basic computer systems. Topics include programming and machine language, the central processing unit (CPU), memory and input-output devices. Prerequisite(s): [EDTE 216](#) with grade of at least “C” or permission of the department head.

EDTE 230 Industrial Controls

Credit 3

This course introduces electronic controls of process and mechanical devices. Components studied include transducers, data acquisition systems, programmable logic controllers (PLCs) and motors. Prerequisite(s): [EDTE 202](#) and [EDTE 205](#) and [EDTE 216](#) with grade of at least “C” or permission of the department head.

EDTE 240 Communication Electronics

Credit 3

This course introduces the basic elements of communication systems. Topics include modulation, transmission, amplification, radio frequency (RF) circuits, microwave circuits, fiber optics, and voice and data communication. Hands-on activities are emphasized through the use of filters, bandwidth, voltage and power calculations and the use of oscilloscopes and spectrum analyzer. Prerequisite(s): [EDTE 202](#) and [EDTE 205](#) with grade of at least “C” or permission of the department head.

ETME 318 Applied Dynamics

Credit 3

This course covers systems of heavy particles and rigid bodies at rest and in motion, rectilinear motion, curvilinear motion, rotation, plane motion, work, energy, power, impulse, and momentum. Prerequisite(s): CMTE 313 and [MATH 211](#). Lecture three hours.

ETEE 425 Microwave Communication Technology

Credit 3

This course is designed to present the basic understanding of the characteristics of electronic circuits with distributed parameters. Topics included in the course include electromagnetic waves propagation in transmission line, types of transmission lines, wave propagation in open environment, wave reflections, transmission and receiving of electromagnetic waves, the Smith chart, high frequency scattering parameters, and basic parameters of antennas. Lecture three hours. Prerequisite(s): Permission of instructor or [EDTE 220](#) and [MATH 211](#) Lecture two hours. Laboratory two hours.

Group II: Credit 6

BUAD 132 Introduction to Business

Credit 3

A course designed to acquaint students with the way in which business enterprises are owned, organized, managed, and controlled. It provides a broad background in common business practices by surveying the entire field of Business Administration. Not open as Free or Program Elective for business majors.

BUAD 200 Business Ethics

Credit 3

The purpose of this course is to assist students in understanding ethical implications in the decision-making process and to assume their role as managers with a sense of a broader purpose and a moral consciousness. Concepts and principles are discussed in light of problem situations with ethical implications, with a focus on the development of critical and analytical thinking.

Prerequisite(s): Sophomore standing.

BUAD 213 Business Software Applications

Credit 3

The course is designed to develop advanced computer application competencies. Emphasis is placed on the use of various software packages in accessing and processing large quantities of data for decision making and developing practical methods for using the computer to solve quantitative business/management problems. Coverage will include advanced use of Operating System and Application Software related to spreadsheets, graphics, databases, and statistical analysis (SAS or SPSS), as applied in business and industry.

BUAD 242 The Legal Environment for Business

Credit 3

The study of laws governing commercial and business transactions are emphasized. Major areas of consideration are the forces that determine business laws, contracts, commercial paper, and bailments.

BUAD 302 Management and Organizational Behavior

Credit 3

Honors/Hybrid

This course is designed to develop a full understanding of the role of business organizations and their effective management. It deals with principles and practices of management and theory and analysis of organizations. Course content includes historical background of management theory and analysis of organizations, principles and processes of management functions, leadership, communication, and morale. Prerequisite(s): Junior standing and [ECON 201](#), [ECON 202](#), [ACCT 201](#) and [ACCT 202](#), with grades of 'C' or better. Fashion Merchandising majors only: [ECON 201](#), [ACCT 200](#) and permission of the respective Department Chairs.

BUAD 410 Production Management

Credit 3

Honors/Hybrid

Emphasis is placed on production management, planning, and control in service and manufacturing enterprises. Topics include quality management, process selection, demand forecasting, materials planning and control, and capacity planning. Case studies are used to analyze the manufacturing and service environments in terms of operational planning, the use of

teams, teamwork, and decision making regarding problems commonly confronting managers and supervisors in national and transnational production organizations. Prerequisite(s): [BUAD 302](#) with grade of 'C' or better.

BUAD 411 Operations Research and Decision Theory

Credit 3

The course is designed to acquaint students with the latest Operations Research and Decision Analysis techniques. It includes Linear Programming, Transportation, Queuing, Algorithm simulations and other models. Prerequisite(s): [BUAD 354](#) or [MATH 112](#) and [MATH 210](#) with grades of 'C' or better.

ECON 303 Labor Economics

Credit 3

This course includes a study of the labor force in the United States with special reference to employment, wage structure, and historical and social background of trade unionism and labor legislation. Prerequisite(s): [ECON 201](#) and [ECON 202](#).

Group III: Credit 6

Free Elective

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