PURDUE UNIVERSITY COLLEGE
OF TECHNOLOGY

COURSE DESCRIPTIONS

CGT: COMPUTER GRAPHICS TECHNOLOGY

CGT 11000  TECHNICAL GRAPHICS COMMUNICATIONS
            (3 CR.)
This course is an introduction to the graphic language used to communicate design ideas using CAD. Topics include: sketching, multiview drawings, auxiliary views, pictorial views, working drawings, dimensioning practices, and section views.

CGT 22600  INTRODUCTION TO CONSTRAINT-BASED MODELING (3 CR.)
Introduction to 2D and 3D geometry and construction techniques used in the construction of constraint-based models. Emphasis is on the downstream applications of 3D solid modeling databases.

CNIT: COMPUTER AND INFORMATION TECHNOLOGY

CNIT 13600  PERSONAL COMPUTING TECHNOLOGY AND APPLICATIONS (3 CR.)
This course provides intermediate coverage of PC technology and problem solving. Topics include computer hardware, operations and ethics, and operating systems and environments. Students gain hands-on skills with applications such as desktop and file management; word processing; spreadsheets; presentation graphics; electronic mail; personal information management; and Internet browsing, searching, and publishing.

CNIT 15500  INTRODUCTION TO OBJECT-ORIENTED PROGRAMMING (3 CR.)
This course introduces fundamental computer programming concepts. Topics include: problem solving and algorithm development, programming standards, variables, data types, operators, decisions, repetitive structures, modularity, arrays, sequential files, user interface construction, software testing and debugging, all within an object-oriented programming framework. The concepts and skills learned in this course are transferable to a wide variety of contemporary programming languages and software development tools. PC literacy required.

CNIT 17600  INFORMATION TECHNOLOGY ARCHITECTURE (3 CR.)
A conceptual and technological survey of information technology architectures inclusive of operating systems, network operating systems, distributed systems architectures, and distributed application architectures. Interoperability between these architectural components is explored. Current technology and trends in each architectural element are reviewed. PC literacy required.

ECET: ELECTRICAL AND COMPUTER ENGINEERING TECHNOLOGY

ECET 10700  INTRODUCTION TO CIRCUIT ANALYSIS (4 CR.)
P: MA 15300 or MATH-M 125. Voltage, current, resistance, Ohm’s law, Kirchhoff’s laws, resistance combinations and Thevenin’s, Norton’s and superposition theorems are studied. DC and AC circuits are studied and utilized, with basic AC terminology described. The performance of ideal transformers, capacitors and inductors, and first order RLC circuits are investigated. Fundamental analog circuits are utilized in the laboratory to enhance the understanding of basic laws and theorems.

ECET 10900  DIGITAL FUNDAMENTALS (3 CR.)
Introduces basic gate and flip-flop logic devices and their application in combinational and sequential digital circuits. Topics include decoders, displays, encoders, multiplexers, demultiplexers, registers, and counters. Logic circuit analysis, implementation of circuits using standard IC chips or programmable logic devices, circuit testing, and troubleshooting are emphasized.

ECET 15700  ELECTRONICS CIRCUIT ANALYSIS (4 CR.)
P: ECET 10700 and MA 15300, or MATH-M 125. Capacitors, inductors, switching circuits, transformers, rectifiers, linear regulators, dependent sources, operational amplifiers, BJT- and MOSFET-based small signal amplifiers, waveform generation, and programmable analog devices are studied. Circuit fundamentals such as Kirchhoff’s laws are utilized in analysis and design of circuits. Computer simulation is used.
ECET 15900  DIGITAL APPLICATIONS (4 CR.)
P: ECET 10700 and ECET 10900. This course continues the study of combinational and sequential digital applications using programmable and standard logic devices. The input and output characteristics of the various common logic families, the appropriate signal conditioning techniques for on/off power interfacing, digital and analog signal interfacing techniques, and memory devices and systems are discussed. II

ECET 19600  INTRODUCTION TO ECET AND PROJECTS (2 CR.)
This course introduces ECET projects and the ECET program. Included are topics about ECET projects, options and electives in the ECET curriculum, university services, study techniques, and student employment and career opportunities. Also introduced are techniques for proper and safe use of basic hand and machine tools, and the processes of fabricating, assembling, and testing printed circuit boards. I

ECET 20700  AC ELECTRONICS CIRCUIT ANALYSIS (4 CR.)
P: ECET 15700, MA 15400 or MATH-M 126. AC circuits including the j operator, phasors, reactance, and impedance are studied. Circuit laws, network theorems, and the fundamental concepts of Fourier analysis are applied and used in the study of topics such as passive filters, IC filters, amplifiers, resonant circuits, single- and three-phase circuits, and elementary magnetic circuits. I

ECET 20900  INTRODUCTION TO MICROCONTROLLERS (4 CR.)
P: ECET 15900. This course is an introduction to microprocessor hardware and software, focusing on embedded control applications. Interconnections of components, peripheral devices, bus timing relationships, structured C-language programming, debugging, input/output techniques, and the use of PC-based software development tools are studied.

ECET 21400  ELECTRICITY FUNDAMENTALS (3 CR.)
P: MA 15900 or MATH-M 115. An introduction to elemental electrical components and their characteristics; basic electrical circuit theory; and use of basic laboratory test equipment, electrical motors, and industrial motor controls. Not open to ECET students. I

ECET 23100  ELECTRICAL POWER AND CONTROL (4 CR.)
P: MA 22100 or MATH-M 119, PHYS-P 221. C: ECET 20700. This course introduces magnetic material and properties; followed by analysis of transformers and power conditioning equipment, induction motors, and single- and three-phase power systems. Motor control devices, programmable logic controllers, PLC input and output devices, and power systems communications and monitoring are introduced. II

ECET 23300  ELECTRON INDUSTRIAL CONTROL (3 CR.)
P: ECET 21400. Familiarization with electronics as applied to industry. Basic theory and application of electronics to controls for industrial equipment and data processing.

ECET 25700  POWER AND RF ELECTRONICS (4 CR.)
P: ECET 20700. This course applies circuit analysis techniques to amplifiers used in power and RF electronics. Topics introduced include bipolar- and field-effect transistors, thyristors, RF oscillators, mixers, AM/FM modulation, phase lock loops, frequency synthesis, switching power supplies, and active filters. Computer-aided analysis of circuits is used.

ECET 29700  ELECTRONIC PROTOTYPE DEVELOPMENT (4 CR.)
P: ECET 19600, ECET 15900, and ECET 20700. This course introduces project planning and the basic concepts in electronic design automation (EDA). The student develops a portion of an electronic system by utilization of: EDA, design for testing (DFT), surface mount technology (SMT), design for manufacturability (DFM), and component characteristic selection techniques. New construction and testing techniques are introduced. The final product is presented in a written and/or oral report. II

ECET 30200  INTRODUCTION TO CONTROL SYSTEMS (4 CR.)
P: ECET 23100. This first course in industrial controls is applications-oriented and includes off-on type open- and closed-loop control systems and analog-based systems. Major topics include relay and programmable controller-based systems.
ECET 30400  INTRODUCTION TO COMMUNICATION SYSTEMS (4 CR.)
P: ECET 25700, MA 22200, or MATH-M 119. The theory and techniques of sending information (voice, music, data, etc.) from one location to another is studied. This includes signal analysis, AM, FM, and PM, modulation techniques, transmitters, receivers, networks, filters, and antennas through the VHF frequency spectrum. In addition, transmission lines, wireless communication, digital communication, and special topics of current interest are introduced. This course also incorporates a student-based communication system design laboratory. II

ECET 30700  ANALOG NETWORK SIGNAL PROCESSING (4 CR.)
P: ECET 25700, MA 22200, or MATH-M 119. An advanced course in network analysis that stresses network theorems and solutions of time- and frequency-domain problems. II

ECET 30900  ADVANCED EMBEDDED MICROCONTROLLERS (4 CR.)
P: ECET 20900. This course emphasizes the advanced applications of embedded microcontrollers, including microcontroller architecture, use of advanced programmable counter/timer arrays, analog interfaces, serial communication, and other peripherals. A variety of microcontroller hardware is utilized.

ECET 34500  ADVANCED DIGITAL SYSTEMS (4 CR.)
P: ECET 15900. Digital system implementation techniques, with an emphasis on digital applications, using application-specific integrated circuits. Computer-aided engineering tools are emphasized, along with system considerations, including device selection and testability.

ECET 35700  REAL-TIME DIGITAL SIGNAL PROCESSING (4 CR.)
P: ECET 20900 and ECET 30700. A study of the architecture, instruction set, and hardware and software development tools associated with a fixed-point general purpose DSP VLSI processor. Fundamental principles associated with the processing of discrete time signals are also introduced, along with the implementation of some common applications, such as waveform generation, audio affects, FIR and IIR digital filtering, and DFT- and FFT-based spectral estimation.

ECET 36800  LINEAR INTEGRATED CIRCUITS (4 CR.)
P: ECET 25700. A study of the applications of IC analog integrated circuits. Topics include linear amplifiers, IN specifications, linear and switching voltage regulation, waveform generation, linear- and switched-capacitor active filters, Norton and operational transconductance amplifiers, and nonlinear circuit applications. Computer-aided analysis of many of these circuits also is presented.

ECET 38500  INTRODUCTION TO AUTO ELECTRONICS (4 CR.)
P: ECET 20700 or ECET 21400. This course is a study of automotive electronics components and systems. Main topics are sensors, actuators, engine fuel systems and ignition systems. Also covered are braking, emissions, General Motors Class II bus, and On-Board Diagnostic (OBD) systems and emerging technologies.

ECET 39600  PROJECT DEVELOPMENT AND MANAGEMENT (4 CR.)
P: ECET 29700, 12 credit hours of upper-division undergraduate ECET course work. This is a structured course in electronic projects with an emphasis on planning design alternatives to meet cost, performance, and user-interface goals. A software tool is utilized for project management. Students work in teams to solve problem assignments using guided design techniques. Creativity is stressed, and the different approaches taken by different teams are compared and discussed.

ECET 48000  PROFESSIONAL ISSUES IN EET (1 CR.)
P: ECET senior standing. This course addresses professional ethics, legal issues, professional development, technology transfer, and corporate culture as they relate to graduating ECET students. Information relating to personal job and career choices, resumes, and interviewing is included.

ECET 49600  PROJECT DESIGN AND DEVELOPMENT I (1 CR.)
P: ECET 39600; 8 credit hours of ECET electives, with a grade of C or higher. An extensive individual or small group design project is carried out, with guidance from a faculty advisor. Phase I includes determining customer requirements, considering design alternatives, and issuing a formal project proposal. Software scheduling tools are used extensively. The course concludes with a report and demonstration of the functionality of individual hardware and software design blocks.
ECET 49700  PROJECT DESIGN AND DEVELOPMENT II  
(1 CR.)  
P: ECET 49600. This conclusion of the design project begun in ECET 49600 emphasizes system integration and testing. The course concludes with a formal demonstration of, and oral presentation on, the finished project; and a written report on the final design.

IT: INDUSTRIAL TECHNOLOGY

IT 10400  INDUSTRIAL ORGANIZATION (3 CR.)  
A detailed survey of organizational structures, operational, financial, marketing, and accounting activities; duties of management, planning, control, personnel, safety, wages, policy, and human factors necessary for effective management.

IT 21400  INTRODUCTION TO LEAN MANUFACTURING (3 CR.)  
Lean manufacturing is a systematic approach to eliminating non-value added activities throughout a production system. Five basic principles characterize a lean production system: value definition, value stream mapping, flow optimization, pull production, and continuous improvement.

IT 23000  INDUSTRIAL SUPPLY CHAIN MANAGEMENT (3 CR.)  
A study of industrial supply chains. Emphasis is on in-plant shipping and receiving functions; modes of distribution; functions of, and services provided by supply chains. Emphasis is placed on how manufacturers, distributors and end users can provide value in the supply chain.

IT 28100  INDUSTRIAL SAFETY (3 CR.)  
P: IT 10400. A course designed to develop understanding of, and insight into, the basic aspects of accident prevention and safety. Specific attention is given to (1) the psychological aspects of accident prevention; (2) the principles of accident prevention; (3) the practical aspects of planning, implementing, and maintaining a safe environment; and (4) standards, current laws, and regulations. Field trips may be required.

IT 33000  INDUSTRIAL SALES AND SALES MANAGEMENT (3 CR.)  
Sales and sales management techniques for analyzing distribution challenges and providing solutions through effective communication; establishing credibility, effective questioning techniques, developing and presenting solutions, anticipating objections and gaining a commitment, plus techniques for building, developing and compensating an effective sales organization.

IT 33200  PURCHASING, INVENTORY, AND WAREHOUSE MANAGEMENT (3 CR.)  
P: IT 23000. A course designed to develop understanding of types of warehouses, methods of organizing the warehouse environment, and determining efficient inventory control procedures. Purchasing of products, storage of inventory, placement of inventory and other internal logistics management topics will be explored. Real world projects conducted in laboratory environment will be utilized.

IT 34200  INTRODUCTION TO STATISTICAL QUALITY (3 CR.)  
P: MA 15900 or MATH-M 115 or MA 15900 or MATH-M 125 and MA 15400 or MATH-M 126. Basic concepts of quality systems in business and manufacturing settings are presented. Basic statistical methods, as applied to quality control, and an introduction to sampling plans are included. Field trips may be required.

IT 34500  AUTOMATIC IDENTIFICATION AND DATA CAPTURE (3 CR.)  
P: IT 21400. The course studies systems used to automate data collection and identify physical objects. Keyless data entry, biometrics, electromagnetics, magnetics, optics, smart cards, and touch input are utilized. The role of electronic data interchange (EDI) is studied. Field trips may be required.

IT 35100  ADVANCED INDUSTRIAL SAFETY AND HEALTH MANAGEMENT (3 CR.)  
An introduction to OSHA and standards development for occupational health in general industry. Special emphasis is on fire protection and egress, flammable and combustible liquids, electrical, personal protective equipment, machine guarding, industrial hygiene/blood borne pathogens, ergonomics, and ISO 9000/14000 integration.

IT 38100  TOTAL PRODUCTIVE MAINTENANCE (3 CR.)  
P: MA 15900 or MATH-M 115 or MA 15300 and MA 15400 or MATH-M 125 and MATH-M 126 This course is a study of the role and scope of total productive maintenance (TPM) in manufacturing. The three types of maintenance activities: corrective, preventive, predictive, and their associated quantitative techniques are studied. Reliability and queuing theory are discussed. Team projects are required. Field trips may be required.
IT 38500  INDUSTRIAL ERGONOMICS (3 Cr.)
P: MA 15900 or MATH-M 115 or MA 15300 or MATH-M 125 and MA 15400 or MATH-M 126; first semester junior standing or higher. A course designed to focus on work design and ergonomics in manufacturing. Specific attention is focused on introducing the terminology and techniques used in work design and on the fundamental concepts embodied in industrial ergonomics. During scheduled laboratory times, exercises permit the student to apply the concepts of industrial ergonomics. Field trips may be required. II

IT 44200  PRODUCTION PLANNING (3 Cr.)
P: IT 21400, MET 24500. A study of industrial organization and management, research and development, production, personnel, and sales. Examples of the procedures necessary to provide a product or service are included. Field trips may be required.

IT 44500  PROBLEM-SOLVING WITH AUTOMATIC DATA COLLECTION (3 Cr.)
P: IT 34500. The problem-solving skills learned in IT 34500 are applied to manufacturing, distribution, or business data collection problems. Depending on the problem, one or more of the available data collection technologies will be used to address the issue of concern. Field trips may be required. Permission of instructor required.

IT 44600  SIX SIGMA QUALITY (3 Cr.)
P: IT 34200. A study of the six sigma quality and process improvement methodology, using the define, measure, analyze, improve, and control (DMAIC) process. The course addresses advanced topics in statistical quality as they pertain to the six sigma methodology and provides preparation for the Green Belt Certification examination.

IT 45000  PRODUCTION COST ANALYSIS (3 Cr.)
P: MA 15900 or MATH-M 115 or MA 15300 or MATH-M 125 and MA 15400 or MATH-M 126; first semester junior standing or higher. An introduction to financial statements and to the study of the costs of production in terms of break-even and least-cost alternatives; including present and future costs, when related to the time value of money, budgeting, labor and overhead, production, cost control, and the role of the supervisor and engineering technologist to cost control. Computer applications for determining the rate of return for complex problems are introduced.

IT 48300  FACILITY DESIGN FOR LEAN MANUFACTURING (3 Cr.)
P: IT 44200, MET 24500. This capstone course integrates all aspects of manufacturing activities and materials handling, focusing on lean concepts. A systematic approach is used to design a manufacturing facility, integrating principles of lean production systems, and eliminating waste through continuous improvement. Computer simulation and projects are required.

MET: MECHANICAL ENGINEERING TECHNOLOGY

MET 10200  PRODUCTION DESIGN AND SPECIFICATIONS (3 Cr.)
P: CGT 11000 and MET 16000. The design, evaluation, and documentation of engineering specifications required for manufacturability and assembly are introduced. Emphasis is on CAD-based detail assemblies, design layouts, equipment installations, and related industrial practices. II

MET 11100  APPLIED STATICS (3 Cr.)
P: MA 15900 or MATH-M 115, MET 16000. Force systems, resultants and equilibrium, trusses, frames, beams, and shear and moments in beams are studied. II

MET 14300  MATERIALS AND PROCESSES I (3 Cr.)
An overview of structures, properties, and applications of metals, ceramics, polymers, and composites commonly used in industry is presented. Problem solving skills are developed in the areas of materials selection, evaluation, measurement, and testing. I

MET 14400  MATERIALS AND PROCESSES II (3 Cr.)
Basic casting, forming, and joining processes are surveyed. This course emphasizes the selection and application of various processes. II

MET 16000  ANALYTICAL AND COMPUTATIONAL TOOLS IN MET (3 Cr.)
Credit is not granted for both MET 16200 and MET 16000. Instruction is given in analytical and computational problemsolving techniques. The electronic calculator, the factor-label method of unit conversions, and engineering graphs are used to solve technical problems in mechanical engineering technology. I
MET 21100  **APPLIED STRENGTH OF MATERIALS (4 CR.)**  
P: MET 11100, MET 16200, MA 22100 or MATH-M 119. The principles of strength, stiffness, and stability are introduced and applied primarily to mechanical components. I

MET 21300  **DYNAMICS (3 CR.)**  
P: MET 11100, MA 22100 or MATH-M 119. Kinematics and kinetics principles of rigid-body dynamics are introduced. Emphasis is on the analysis of bodies in plane motion. I

MET 21400  **MACHINE ELEMENTS (3 CR.)**  
P: MET 21100, MET 21300. The methods developed in statics, dynamics, and strength of materials are applied to the selection of basic machine components. The fundamental principles required for the selection of individual elements that compose a machine are developed. Selected course topics are included as computer exercises. II

MET 22000  **HEAT AND POWER (3 CR.)**  
P: MA 22100 or MATH-M 119, MET 16000, PHYS-P 201 or PHYS-P 221. Heat and Power is an introduction to the principles of thermodynamics and heat transfer. Basic thermodynamic processes are used to evaluate the performance of energy-based systems such as internal combustion engines, power plants, and refrigeration equipment. II

MET 23000  **FLUID POWER (3 CR.)**  
P: MET 11100 or PHYS-P 201 or PHYS-P 221; MET 16000, MA 22100 or MATH-M 119. This course consists of the study of compressible and incompressible fluid statics and dynamics, as applied to hydraulic and pneumatic pumps, motors, transmissions, and controls. II

MET 24500  **MANUFACTURING SYSTEMS (3 CR.)**  
P: MET 14300, MA 15900 or MATH-M 115. This course surveys the manufacturing processes and tools commonly used to convert cast, forged, molded, and wrought materials into finished products. It includes the basic mechanisms of material removal, measurement, quality control, assembly processes, safety, process planning, and automated manufacturing. I

MET 38200  **CONTROLS AND INSTRUMENT AUTOMATION (3 CR.)**  
P: MA 22100 or MATH-M 119. Study of the procedures and techniques essential to industrial measurement and transmission of data is provided in the areas of microprocessor control, process control, and automated testing. Concepts of hysteresis, repeatability, weighted signals, span, suppression, range, and closed loop control are emphasized.

MET 45100  **MANUFACTURING QUALITY CONTROL (3 CR.)**  
P: STAT 30100 or MATH-K 310. Quality control practices used in manufacturing industries; management, statistical control charts, reliability, sampling plans, economics, computer methods, and test equipment are presented and applied. Credit will not be granted for both MET 45100 and MFET 45100.

**MFET: MANUFACTURING ENGINEERING TECHNOLOGY**

MFET 30000  **APPLICATION OF AUTOMATION IN MANUFACTURING (3 CR.)**  
P: ECET 21400, MET 24500. Basic introduction to automation applications in manufacturing and the impact of computer-based systems on a manufacturing company. Coverage includes practices and the various issues related to the application of computer-integrated manufacturing. Emphasis placed on CAD, CAM, CNC, robotics, industrial control elements, PLCs, and computer-based process controls.

**OLS: ORGANIZATIONAL LEADERSHIP AND SUPERVISION**

OLS 25200  **HUMAN BEHAVIOR IN ORGANIZATIONS (3 CR.)**  
A survey of the concepts which provide a foundation for the understanding of individual and group behavior in organizations of work, with special emphasis on typical interpersonal and leadership relationships. I

OLS 27400  **APPLIED LEADERSHIP (3 CR.)**  
P: OLS 25200, or consent of instructor. Introduction to, and overview of, the fundamental concepts of leadership and supervision. Emphasis is placed on the supervisor's major functions and essential areas of knowledge, his or her relations with others, and his or her personal development. II
OLS 28400  LEADERSHIP PRINCIPLES (3 CR.)
Mastery of the basic knowledge managers need to effectively lead individual employees. Includes primary measures of performance success, leadership strategies, core leadership actions, and a comprehensive theory that explains how their strategies and actions cause positive attitudes and increased performance. II

OLS 32500  MEETING MANAGEMENT (3 CR.)
P: SPCH-S 121. An applications-oriented course in presenting technical information and conducting problem-solving and decision-making meetings. Special emphasis on leading and facilitating interactive meetings, as well as structuring information for effective presentations.

OLS 34500  CRITICAL THINKING IN ORGANIZATIONS (3 CR.)
P: OLS 38600 and OLS 38800. This course focuses on systems thinking and understanding the research design and measurement theory used in solving organizational and human resource development problems. The emphasis is on applied methodology rather than on statistical issues, with the intent of the student becoming an effective consumer of information. The students learn how to report findings in a practical and influential manner. Includes the importance of knowledge management issues in organizations.

OLS 35100  INNOVATION AND ENTREPRENEURSHIP (3 CR.)
An in-depth study of innovation in existing organizations, as well as entrepreneurship in start-up businesses, franchises, family-owned firms, and other business formats.

OLS 37500  TRAINING METHODS (3 CR.)
Principles, practices, and methods of employee training. Introductions to systematic training program design, development, and evaluation. Emphasis is on the supervisor as a trainer.

OLS 37600  HUMAN RESOURCE ISSUES (3 CR.)
Analyses and discussion of selected case problems concerning typical leadership and human resource management situations faced by a supervisor/manager. Emphasis is directed toward developing the student’s attitude, philosophy, analytical ability, and problem-solving skills within the working environment.

OLS 37800  LABOR/MANAGEMENT RELATIONS (3 CR.)
An introduction to, and overview of, the fundamental concepts of labor relations, collective bargaining, and dispute resolution procedures. An international comparative analysis is used to assess some of the legal, economic, and political structures of labor relations.

OLS 38400  LEADERSHIP PROCESS (3 CR.)
An in-depth study of a sequence of manager actions that influence employees to achieve desired performance results. How these manager actions are transformed by employers into desired performance is also covered.

OLS 38600  LEADERSHIP FOR ORGANIZATIONAL CHANGE (3 CR.)
A survey of the concepts that provide a foundation for the understanding of leadership and its relationship to the management of organizational change, with special emphasis on managing the human side of quality improvement.

OLS 38800  LEADERSHIP THROUGH TEAMS (3 CR.)
An in-depth study of self-directed work teams and team processes in the work setting, with a view to understanding team functions under varying task conditions. Especially emphasized is the leadership of teams for effective performance and maximum member satisfaction. This course deals extensively with maintenance and task behaviors of team members.

OLS 44000  LEADING WITH INTEGRITY (3 CR.)
An investigation of ethical problems in business practice. Topics include personal morality in profit-oriented enterprises; codes of ethics: obligations to employees and other stakeholders; truth in advertising, whistle-blowing, and company loyalty; regulation, self, and government; the logic and future of capitalism. Emphasis on business law and legal impacts on ethical decision-making.

OLS 45000  PROJECT MANAGEMENT FOR ORGANIZATIONAL AND HUMAN RESOURCE DEVELOPMENT (3 CR.)
An introduction to project management concepts and practices in the context of human resource development projects.
OLS 45400 GENDER AND DIVERSITY IN MANAGEMENT (3 CR.)
The workforce of the future represents multiple differences, including gender, race, culture, ethnicity, physical abilities, and age. Following this broad-based perspective of diversity, this course focuses on using knowledge of diversity to develop the leadership potential of individuals in organizations.

OLS 45600 LEADERSHIP IN A GLOBAL ENVIRONMENT (3 CR.)
Exploration of leadership strategies for organizations engaged in international business. Includes understanding cultural differences and diverse business practices, and the challenges of competing in a global marketplace.

OLS 47600 COMPENSATION PLANNING AND MANAGEMENT (3 CR.)
Planning and implementation of a total compensation system, including job analysis, job evaluation, salary survey and analysis, benefits and development of a structured pay system. Includes behavioral implications and legal compliance issues.

OLS 47700 CONFLICT MANAGEMENT (3 CR.)
A study of the methods for dealing with inner-personal, interpersonal, and political disputes by means generally outside the traditional court system. Students investigate the theoretical and practical aspects of conflict assessment, negotiation, problem solving, mediation, and arbitration.

OLS 47900 STAFFING ORGANIZATIONS (3 CR.)
An applications-oriented study of key concepts in staffing organizations, including principles and issues in conducting job analysis, preparing job specifications, and screening/selecting employees. Special emphasis on the design, validation, and operation of high-volume staffing systems.

OLS 48400 LEADERSHIP STRATEGIES FOR QUALITY AND PRODUCTIVITY (3 CR.)
A study of how organizational leaders create an environment conducive to high levels of employee self-motivation, quality, and productivity. Actual case situations are used to illustrate the application of course content.

OLS 48700 LEADERSHIP PHILOSOPHY (3 CR.)
P: OLS 37600 or consent of instructor. A review of current managerial education and development theories and practices; discussion of fundamental social, economic, and political changes affecting business and the art of managing; implications of these changes for individual manager development and continued growth.

OLS 49100 INTERNSHIP PROGRAM (3 CR.)
P: OLS majors only. A work practicum designed to combine university study with work experience directly related to the student’s plan of study. To receive credit the internship must incorporate the concepts taught in the organizational leadership courses, and the job must have a leadership component to it. Approval must be obtained from the internship coordinator prior to registering for the class. (Course may be repeated for up to 6 cr.)

OLS 49900 INDEPENDENT STUDY (3 CR.)
P: Instructor consent and departmental approval. Supervised individual research on appropriate topics. OLS 499 is set up through the individual instructor. (Course may be repeated for up to 6 cr.)

TECH: ENGINEERING TECHNOLOGY

TECH 10500 INTRODUCTION TO ENGINEERING TECHNOLOGY (3 CR.)
Introduction to the different disciplines incorporated in engineering technology as well as the skill set needed to be a successful student in engineering technology. Focus will be on individual and professional development, problem identification, developing analytical skills, time and resource management, project planning, design, implementation and evaluation, and oral and written communication in the engineering technology profession.

TECH 49600 SENIOR DESIGN PROJECT PROPOSAL (1 CR.)
Capstone problem identification and solution design course demonstrating synthesis of technical, professional, and general knowledge for senior engineering technology students. Proposal presentation is required.

TECH 49700 SENIOR DESIGN PROJECT (2 CR.)
Teams will develop innovative solutions based on proposal outcomes in TECH 49600 for current issues in the engineering technology profession, workplace, or community. Project deliverable, presentation, and written report are required.