

DEPARTMENT OF INDUSTRIAL TECHNOLOGY

Department Objectives

- To prepare students for management careers in aviation systems, construction, industrial distribution, and telecommunications;
- To provide courses for attaining knowledge of industrial technology and related areas;
- To provide courses which support and enrich the academic curricula and general education;
- To provide courses for students interested in transferring to such programs as engineering, architecture, and education.

College of Business and Technology Graduation Requirements

- All students graduating with a degree from the College of Business and Technology must take at least 50% of their major area credit hour requirements from the College of Business and Technology at the University of Nebraska at Kearney.
- All students graduating with a degree from the College of Business and Technology must take a minimum of 30 of their last 36 hours of credit needed for their degree from the University of Nebraska at Kearney.
- All students graduating with a degree from the College of Business and Technology are required to complete 3 credit hours of designated Experiential Learning (EL) coursework.

Safety Center

Mickie Anderson, Director

Program Objective

The Nebraska Safety Center was established at the University of Nebraska at Kearney by the Nebraska Legislature, in 1978, to provide "... increased training and research activity in fields of traffic safety, home safety, industrial safety, fire safety, and recreational safety ..."

Industrial Technology Major

Seven options are available in this major:

1. Aviation Systems Management Comprehensive (<http://catalog.unk.edu/catalog-archive/2019-2020/undergraduate/departments-programs/industrial-technology/aviation-systems-management-comprehensive-bs>) - Bachelor of Science Degree
2. Construction Management Comprehensive (<http://catalog.unk.edu/catalog-archive/2019-2020/undergraduate/departments-programs/industrial-technology/construction-management-comprehensive-bs>) - Bachelor of Science Degree
3. Industrial Distribution Comprehensive (<http://catalog.unk.edu/catalog-archive/2019-2020/undergraduate/departments-programs/industrial-technology/industrial-distribution-comprehensive-bs>) - Bachelor of Science Degree
4. Industrial Technology (<http://catalog.unk.edu/catalog-archive/2019-2020/undergraduate/departments-programs/industrial-technology/industrial-technology-bs>) - Bachelor of Science Degree
5. Industrial Technology Applied Science Comprehensive (<http://catalog.unk.edu/catalog-archive/2019-2020/undergraduate/>

[departments-programs/industrial-technology/industrial-technology-applied-science-comprehensive-bs-aas-transfer-major](http://catalog.unk.edu/catalog-archive/2019-2020/undergraduate/departments-programs/industrial-technology/industrial-technology-applied-science-comprehensive-bs-aas-transfer-major)) - Bachelor of Science Degree (AAS Transfer Major)

6. Interior and Product Design Comprehensive (<http://catalog.unk.edu/catalog-archive/2019-2020/undergraduate/departments-programs/industrial-technology/interior-product-design-comprehensive-bs>) - Bachelor of Science Degree

Minors in Construction Management (<http://catalog.unk.edu/catalog-archive/2019-2020/undergraduate/departments-programs/industrial-technology/construction-management-minor>), Industrial Safety (<http://catalog.unk.edu/catalog-archive/2019-2020/undergraduate/departments-programs/industrial-technology/industrial-safety-minor>), Industrial Technology (<http://catalog.unk.edu/catalog-archive/2019-2020/undergraduate/departments-programs/industrial-technology/industrial-technology-minor>), and Safety Education (<http://catalog.unk.edu/catalog-archive/2019-2020/undergraduate/departments-programs/industrial-technology/safety-education-minor>) are available for students pursuing majors in other disciplines.

James Vaux (<http://aaunk.unk.edu/catalogs/current/fac/facultyv.asp#vauxja>), **Chair**

Professor: Timothy Obermier

Associate Professor: Rod Flanigan

Assistant Professor: Jacob Bishop, Lowell Hincee, Ahna Packard, Dale Porter, Mahmoud Shakouri Hassamabadi, James Vaux

Senior Lecturer: Terry Gibbs

Lecturer: Benjamin Brachle

Interior and Product Design (IPD)

IPD 109 – Introduction to Design 3 credit hours

An introduction to the field of design with an emphasis on design thinking and problem solving.

Additional Course Fee Required

IPD 120 – Foundation Studio I 3 credit hours

Introduces foundational methods for organizing abstract relationships in both 2D and 3D contexts.

Corequisite: IPD 125.

IPD 125 – Design Drawing 3 credit hours

An introduction to perceptual drawing and visual thinking.

Corequisite: IPD 120.

IPD 206 – Foundation Studio II 3 credit hours

Advanced foundational methods for organizing abstract relationships in both 2D and 3D contexts.

Prerequisite: IPD 120.

Corequisite: IPD 260.

IPD 207 – History of Design I 3 credit hours

A survey of design as it pertains to architecture, interiors, furniture, and product from antiquity through 1900. In addition; a contextualization via seminal theory and modern application.

Prerequisite: IPD 120

IPD 209 – History of Design II 3 credit hours

A survey of design as it pertains to architecture, interiors, furniture, and product from 1900 to present. In addition; to a contextualization via theory and modern application.

Prerequisite: IPD 207

IPD 210 – Design Studio I 3 credit hours

Introduction to the design process with an emphasis on design problem-solving and the application of design principles to interior environments and products.

Prerequisite: IPD 260

Additional Course Fee Required

IPD 260 – Foundation Technology for Design 3 credit hours

Foundational design visualization and fabrication technologies and processes.

Prerequisite: IPD 120 and IPD 125.

Corequisite: IPD 206.

Additional Course Fee Required

IPD 265 – Design Technology I 3 credit hours

Intermediate design visualization and fabrication technologies relevant to design problem solving.

Prerequisite: IPD 206 and IPD 260.

Corequisite: IPD 210.

Additional Course Fee Required

IPD 275 – Interior Staging & Trends 1-3 credit hours

Aspects of interior decoration as it pertains to the homeowner, real-estate industry, and interior design student. This course will discuss the placement of furnishings, how to create a focal point, decorating suggestions, using the items that you already own and other basic information needed to properly stage a home for sale.

IPD 305 – Residential Kitchen and Bath Design 3 credit hours

The study and application of the National Kitchen and Bath Association's Guidelines of Planning Standards and Safety Criteria for residential kitchens and bathrooms including Universal Design concepts. Includes the study and selection of kitchen and bath materials, equipment, and cabinetry. Computer aided Kitchen and Bath design software is introduced.

Prerequisite: IPD 206 and IPD 260

IPD 306 – Lighting in Interior and Product Design 3 credit hours

The study of the theory and application of electric light sources in interior and product design. Includes a study of light and color theories, and the selection, evaluation, and design of lighting solutions.

Prerequisite: IPD 210 and IPD 265

IPD 307 – Furniture, Finishes, Materials and Components of Interior Architecture 3 credit hours

Study of selection, care, and use of furniture, finishes, materials, and components of residential and contract interior architecture to solve design problems. Includes environmental, economic, and universal design concerns, testing standards, and cost estimating. Computer spreadsheet software is used.

Prerequisite: IPD 206 and IPD 260

IPD 308 – Comparative Studies in Housing and Families 3 credit hours

Housing requirements of today's families, housing laws, the housing industry and home ownership.

IPD 310 – Design Studio II 3 credit hours

Intermediate design problem-solving related to environment-behavior, spatial, and organizational theories.

Prerequisite: IPD 210.

Corequisite: IPD 320.

IPD 312 – Housing Interiors for Special Needs Populations 1-3 credit hours

Principles and elements of interior design as it applies to special needs populations with emphasis on the elderly, handicapped and ADA regulations.

Prerequisite: IPD 305

IPD 313 – Renovation and Restoration of Interiors 3 credit hours

Principles and elements of design for renovation of existing residential structures for better utilization of existing space and/or plan for additional space based on requirements of restoration and preservation of furnishings of historically significant interiors.

Prerequisite: ITEC 122

IPD 318 – Design Studio III 3 credit hours

Application of design problem-solving in a global context in order to understand the role of design as it examines culture and universality within large problems.

Prerequisite: IPD 310

IPD 320 – Design Technology II 3 credit hours

Advanced design visualization and fabrication technologies relevant to design problem solving.

Prerequisite: IPD 210 and IPD 265.

Corequisite: IPD 310.

Additional Course Fee Required

IPD 325 – Design Technology Applications 3 credit hours

Application of design visualization and fabrication techniques through research, design, prototype construction, evaluation, and redesign.

Prerequisite: IPD 310 and IPD 320.

Corequisite: IPD 318.

IPD 399 – Individual Studies in Interior and Product Design 1-3 credit hours

Independent study of topics in Interior and Product Design to meet the needs of the student. For majors only.

Department Consent Required

Total Credits Allowed: 18.00

IPD 403 – Design Studio IV 3 credit hours

Advanced design problem-solving in the context of complex commercial and residential environments.

Prerequisite: IPD 318.

Corequisite: IPD 405.

IPD 405 – Design Research Methods 3 credit hours

The study of research for design problem solving including theory, methods, and contexts. Students will develop a research thesis that will direct their final senior project.

Prerequisite: IPD 318

Additional Course Fee Required

IPD 407 – Design Senior Project 3 credit hours

Self-directed design thesis project based on research and review. The student will develop unique and applicable design solutions with clear research methodology and theoretical groundings.

Prerequisite: IPD 403 and IPD 405

Additional Course Fee Required

IPD 440 – Experiential Design Projects 3 credit hours

This class will provide an opportunity to engage in live, local and regional projects. Students will interface with home owners, end users, contractors, builders, developers, real-estate agents and other local professionals as they navigate and follow projects from start to finish.

Prerequisite: IPD 318 and IPD 305 and IPD 446

IPD 446 – Professional Practice for Design 2 credit hours

Study of ethics and principles of design professional practice and the management of design projects. Includes Final Portfolio Review.
Prerequisite: IPD 310 and IPD 320

IPD 475 – Internship 1-9 credit hours

Internship is defined as a set of work-related experiences in the context of professional settings. The purpose of this course is to provide a work experience program for students preparing for employment in Interior and Product Design. It provides students with opportunities for broader experience and enables them to develop competencies which meet requirements of professional licensing. Work experience must involve design applications and provide opportunities for students to develop competencies in areas related to professional licensing. Students should contact their program coordinator prior to enrolling in this course.
Total Credits Allowed: 12.00
Prerequisite: IPD 310

IPD 490 – Special Problems in Interior and Product Design 3 credit hours

Special topics in design for Interior and Product Design majors.

Industrial Technology (ITEC)

ITEC 110 – Introduction to Technology 1 credit hour

Students will be introduced to career opportunities, and encouraged to explore career options. Once students are familiar with various degree programs they will develop long range plans for achieving their career goal(s).

ITEC 114 – Introduction to Industrial Distribution 2 credit hours

Definition, history, types of, range of products, lines of distribution, function of manufacturers, distributors, operations, measures of effectiveness, employment and advancement opportunities.

ITEC 116 – Introduction to Construction Management 3 credit hours

An introduction to the construction industry; and overview of the construction industry sectors and the industry's impact on the economy; and a brief overview of the construction process. The course will preview the construction management degree curriculum with an overview of policies, procedures and resources of the Industrial Technology Department on the University of Nebraska at Kearney campus.

ITEC 120 – Interpretation of Technical Documents 3 credit hours

This course is designed as a beginning college level introduction to the comprehension and use of design graphics in 2-dimensional form for the purpose of solving technical problems related to the industries of construction, industrial distribution, aviation, and information networking.
Additional Course Fee Required

ITEC 122 – Architectural Drafting & Design 3 credit hours

This course is designed to meet the needs of the Family and Consumer Science major with an emphasis in Interior Design. Specific methods applicable to the major's degree program and an introduction to computer aided drafting and design are included.

ITEC 130 – Technology Today 3 credit hours

This course presents a conceptual approach to computer aided communication systems typically applied in industrial environments. Emphasis will be placed on utilizing computer technology to integrate text and graphics in the preparation of documents and presentation materials.

ITEC 170 – Private Pilot Theory 3 credit hours

This course serves as a preparation for the FAA Private Pilot written exam which may be taken upon successful completion of this course. The course includes instruction in FAA regulations, weather, air and radio navigation, flight safety and emergency procedures necessary for successful completion of the FAA exam.

ITEC 171 – Introduction to Flight 1 credit hour

This course is the student's first exposure to flight operations. The fundamental flight skills and the sensations associated with completing these skills will be demonstrated. Basic aviation terms and nomenclature will be introduced.

Additional Course Fee Required

ITEC 172 – Professional Flight 1 1 credit hour

This course provides the student with an introduction to the aeronautical experiences required to effectively pursue careers in aviation. In this course the student will become familiar with the training airplane through dual instruction and solo practice and will learn how the airplane controls are used to establish and maintain specific flight attitudes. The student will also learn to plan and conduct cross-country flights using pilotage, dead reckoning, and radio navigation.

Prerequisite: ITEC 171 or permission

Additional Course Fee Required

ITEC 188 – GS Portal 3 credit hours

Students analyze critical issues confronting individuals and society in a global context as they pertain to the discipline in which the Portal course is taught. The Portal is intended to help students succeed in their university education by being mentored in process of thinking critically about important ideas and articulating their own conclusions. Students may take the Portal in any discipline, irrespective of their major or minor. Satisfies the General Studies Portal course requirement. Students may take their Portal course in any discipline. Students who transfer 24 or more hours of General Studies credit to UNK are exempt from taking a portal course.

Total Credits Allowed: 6.00

Prerequisite: First year freshman standing or sophomore standing only.

ITEC 205 – Virtual Design & Construction 3 credit hours

This is a beginning design course to develop a working knowledge of computer added design and drafting (CADD) skills, design thinking process and principles, while teaching 3D Design CADD software skills.

Prerequisite: ITEC 110 and ITEC 120

Additional Course Fee Required

ITEC 210 – Society and Technology 3 credit hours

The course will introduce students to the impact that technology has had on society, the economy and politics. Historical development of technology will be developed in an effort to provide information on the importance of technology.

ITEC 212 – Construction Estimating I 3 credit hours

Estimating fundamental, concepts, and strategies used in the process of construction cost estimating. Quantity take off, unit pricing, estimate development, drawing and interpretation, resource pricing, and bidding procedures. Computer applications are introduced

Prerequisite: ITEC 240

Additional Course Fee Required

ITEC 220 – Electricity/Electronics 3 credit hours

This course will provide an overview of the fundamentals of electricity/electronics. This is a foundation course for students entering the field of Industrial Technology and will provide the necessary working knowledge required for automation systems, telecommunications, residential/commercial wiring, and computer based electronics.

Additional Course Fee Required

ITEC 225 – The Influence of Technology on Democracy 3 credit hours

Students in this course will examine technology in the areas of telecommunications, construction, distribution, public safety and its impact and influence upon a democratic society. Varied technologies create complex situations that impact the processes and ideals of democracy. Advances in technology have created future benefits as well as consequences relative to the ideas afforded and provided by a democracy. Various forms of democracies will be examined to see how each adapts to incursion or open implementation of various technologies. Are the leaders of tomorrow, our current students, prepared to address the technological challenges of the future?

ITEC 230 – Statics and Strength of Materials 3 credit hours

This course is an introductory exposure to the engineering principles relative to static design and their application to primary construction materials and structures. Through problem solving and application, students will develop an appreciation for the vital importance of engineering to the stability and resulting safety of structures.

Additional Course Fee Required

ITEC 240 – Construction Materials & Methods 3 credit hours

This course will explore the design and construction methods of light commercial/residential structures. The construction industry is constantly changing as new materials, technologies, and processes evolve. These concepts will be presented and applied in the class. The fundamentals of these construction methods and techniques will be reinforced with various lab activities, e.g. concrete, framing, and roofing.

Prerequisite: ITEC 120 or IPD 210

Additional Course Fee Required

ITEC 250 – Construction Surveying 3 credit hours

Methods and equipment utilization in layout and control of building projects and construction site development. Includes horizontal and vertical control methods using manual and electronic surveying equipment (Theodolite).

Prerequisite: MATH 103

Additional Course Fee Required

ITEC 251 – Machine Tool Products and Applications 3 credit hours

A study of modern manufacturing based on the production of parts and assemblies by means of various processes and methods.

Prerequisite: ITEC 114

ITEC 271 – Industrial Products & Applications I 3 credit hours

This course is designed to provide specific product knowledge and applications skills required of today's electrical and electronic component sales professionals.

Prerequisite: ITEC 114 and completion of General Studies Foundational Core Math class.

ITEC 272 – Industrial Products & Applications II 3 credit hours

This course is designed to provide specific product knowledge and applications skills required of today's industrial sales professional. It includes (1) power transmission devices, (2) pipes, valves, and fittings, and, (3) hydraulics and pneumatics. Related topics such as maintenance and lubricants are included. New technologies are included in the course as they become available.

Prerequisite: ITEC 271

ITEC 280H – Special Topics 1 credit hour**ITEC 283 – Fluid Power 3 credit hours**

The course is designed to cover the nature of fluids and gas under pressure, the transmission of power by fluid and gas, the design of hydraulic and pneumatic systems and automatic control of these systems.

Prerequisite: MATH 102

ITEC 290 – Communicating Through Technology 3 credit hours

Utilizing traditional, computer, and internet presentation technology, the course will address how to communicate effectively utilizing verbal and nonverbal communication techniques. Evaluating, listening, presenting, body language, and technology based presentation programs are a few of the main topics.

ITEC 291 – Instrument Pilot Theory 3 credit hours

This course serves as a preparation for the FAA Instrument Pilot written exam which may be taken upon successful completion of the course. The course includes instruction in all areas required by 14 CFR Part 61.65(b).

Prerequisite: ITEC 110 and ITEC 171 or permission

ITEC 292 – Professional Flight 2 1 credit hour

This course provides the student with the VFR cross-country aeronautical experience to prepare him or her for the next phase of their professional training, the instrument rating.

Prerequisite: ITEC 172 or permission

Additional Course Fee Required

ITEC 293 – Professional Flight 3 1 credit hour

This course provides the student with the simulated and actual instrument reference aeronautical experiences required to obtain the Instrument Airplane rating, FAA Instrument Airplane rating.

Prerequisite: ITEC 172 or permission

Additional Course Fee Required

ITEC 308 – Industrial Management 3 credit hours

Designed to present specific functions, resources, techniques and responsibilities associated with the various phases of industrial management.

ITEC 312 – Construction Estimating II 3 credit hours

Designed to meet the individual needs of students requiring additional specialization in the construction field of study with emphasis in computer and manual estimating.

Prerequisite: ITEC 130 and ITEC 240 and ITEC 212

Additional Course Fee Required

ITEC 320 – Applied Electronics 3 credit hours

The course will deal with analog and digital circuitry and their various applications in electronics. Computer and industry control circuits will be incorporated.

Prerequisite: ITEC 110 and ITEC 220

Additional Course Fee Required

ITEC 341 – Mechanical and Electrical Systems 3 credit hours

The course will include the basic construction practices included in all phases of the industry dealing with the electro and mechanical systems of structures. Specifically electrical systems, heating systems, cooling systems, and plumbing systems.

Prerequisite: ITEC 240

Additional Course Fee Required

ITEC 353 – Industrial Distribution Branch Operations 3 credit hours

A study of the basic functions of an industrial distributor, how to manage each area of branch operations for a single or multi-level branch organization, account planning, and the management of territories, sales cycles, and sales teams.

ITEC 360 – Building Codes and Inspections 3 credit hours

This course will provide the student with a working understanding of the elements associated with all phases of completing a structure in compliance with current building codes. Topics included are permitting, occupancy permits, trades, inspections, and the role of the general contractor in insuring codes are observed. The experiences will be gained through a classroom and on-site environment.

Prerequisite: ITEC 240

Additional Course Fee Required

ITEC 370 – Construction Scheduling 3 credit hours

Students will be exposed to the area of construction scheduling and the importance of this area to the successful completion of a project. This course emphasizes professional application grounded in accepted theory and techniques.

Prerequisite: ITEC 212

Additional Course Fee Required

ITEC 375 – Commercial Pilot Theory 3 credit hours

This course serves as a preparation for the FAA Commercial Pilot knowledge exam which may be taken upon successful completion of this course. The course includes instruction in FAA regulations, weather, air and radio navigation, flight safety and emergency procedures necessary for successful completion of the FAA exam. In addition, specific information regarding the privileges and limitations on the holder of the Commercial Pilot Certificate are discussed in detail.

Prerequisite: ITEC 171 or permission

ITEC 376 – Professional Flight 4 2 credit hours

This course provides the student with the aeronautical experiences required to obtain the FAA Commercial Pilot Certificate.

Prerequisite: ITEC 172 or permission

Additional Course Fee Required

ITEC 377 – Professional Flight 5 2 credit hours

This course provides the student with the aeronautical experiences required to add the FAA Multi-Engine rating to an existing Pilot Certificate.

Prerequisite: ITEC 172 or permission

Additional Course Fee Required

ITEC 378 – Professional Flight 6 2 credit hours

This course provides the student with the aeronautical experiences required to qualify for the FAA Flight Instructor Certificate.

Prerequisite: ITEC 376 or permission

ITEC 379 – Professional Flight 7 2 credit hours

This course provides the student with the aeronautical experiences required to qualify for the FAA Instrument Flight Instructor Certificate.

Prerequisite: ITEC 378 or permission

ITEC 380 – Professional Flight 8 2 credit hours

This course provides the student with the aeronautical experiences required to qualify for the FAA Multi-Engine Flight Instructor Certificate.

Prerequisite: ITEC 376 and ITEC 377 or permission

ITEC 383 – Mechanical Power 3 credit hours

The course is specifically designed to provide extensive study and understanding of the power transmission and motion control industry. In addition, the course is holistically designed to integrate the extensive technical studies with current manufacturing, management, sales, and industry news and events.

Prerequisite: MATH 102

ITEC 388 – GS Capstone 3 credit hours

An interdisciplinary experience where students apply the knowledge, cognitive abilities, and communication skills they have gained from General Studies in designing and completing an original project or paper. Students employ methods and interpretive means of two or more disciplines to integrate knowledge and synthesize their results. Satisfies the General Studies capstone course requirement. Students may take their Capstone course in any discipline.

Prerequisite: Junior or senior level standing or within 6 hours of completing general studies requirements.

ITEC 391 – Aviation Law 3 credit hours

This course covers the interpretation and application of the statutes, related acts, and federal regulations, and common law aviation issues.

ITEC 392 – Aviation Airport Management 3 credit hours

This course is primarily directed toward the planning and complete development of an airport including the economic, social, political, and operation requirements. Federal Aviation Regulations as well as Environmental Protection Act requirements are addressed.

ITEC 393 – Aviation Safety 3 credit hours

The primary goal of this course is to thoroughly indoctrinate the student pilot with safety consciousness including awareness of physical limitations, effects of flight on the human body, severe weather, and in flight emergencies. Although advanced placement is not mandatory, beginning college students are not encouraged to enroll.

ITEC 394 – Air Traffic Control 3 credit hours

This course is a survey of the National Airspace System, air traffic control procedures, the control environment and the airport environment. The content of this course includes instruction on: 1. The role of the air traffic control in commercial aviation; 2. The procedures and tools used by the air traffic controller; and 3. How these tools and procedures can be utilized by the pilot in the airspace of the United States.

ITEC 398 – Advanced Virtual Design and Construction 3 credit hours

This course is an introduction to Building Information Modeling (BIM) and Virtual Design & Construction (VDC), and how the process is transforming the design, construction, management, operation, and maintenance of buildings. Through a series of lectures, discussion of case studies, and hands-on demonstrations of software, students will explore topics including BIM principles, concepts, and tools, and the business case for BIM.

Prerequisite: ITEC 212 and ITEC 205

Additional Course Fee Required

ITEC 399 – Independent Study 1-3 credit hours

Permission of the instructor is required. The course provides independent investigation of problems in Industrial Technology. Topics to be researched may be tailored to meet the needs of the student. Individual research, under the direct supervision of a faculty member of the department, will utilize problem-solving applications.

Department Consent Required

Total Credits Allowed: 3.00

ITEC 408 – Leadership in Business and Technology 3 credit hours

This course will present information and provide skills needed by managers who will be required to cope with an ever-increasing rate of change. Creative long range planning coupled with the ability to lead people will be of utmost importance. Leadership styles will be studied by review of characteristics of successful leaders past and present.

ITEC 416 – Advanced Aerodynamics/Aircraft Performance 3 credit hours

This course is designed to develop a sound understanding of the concepts of aerodynamics relevant to flight, and the impact of the natural environment upon the performance of modern aircraft.

Prerequisite: PHYS 205 and PHYS 205L or permission

ITEC 417 – Advanced Aircraft Systems 3 credit hours

This course will acquaint the student with various aircraft types and sophisticated aircraft systems, as well as pilot requirements and responsibilities within these systems.

Prerequisite: ITEC 220 or permission

ITEC 420 – Individual Problems in Computer-Aided Drafting Technology 3 credit hours

Designed to meet the individual needs of the student who desires additional specialization in the computer aided drafting and design area.

Prerequisite: ITEC 205

ITEC 445 – Human Factors & Productivity 3 credit hours

Students will be exposed to the influence that human factors have on productivity on a construction site. The importance of understanding and effective management will be studied and how this can improve the budget, quality, and time objectives of a project. This course emphasizes strategy development and practical application grounded in accepted theory and techniques.

Prerequisite: ITEC 475 and senior standing

ITEC 451 – Manufacturing/Distribution Relationships 3 credit hours

The study of the design and development of products and services emphasizing the quantitative aspects and the interlocking factors affecting human performance and the utilization of facilities, machines, and materials. A working corporate structure will be established to research, develop, produce, and market produce.

Prerequisite: ITEC 251 and ITEC 475

ITEC 453 – Purchasing for Wholesale Distribution 3 credit hours

A study of purchasing fundamentals performed by personnel who have the responsibility for procurement of materials, equipment, and/or services in a wholesale distribution environment.

ITEC 458 – Materials: Structure, Properties, and Processing 3 credit hours

This course is designed to help students become familiar with industrial materials, including metals, ceramics, polymers, and composites.

Successful students will understand the atomic structure and micro structure of materials, how fabrication and processing conditions influence this structure, and the mechanical properties of the resulting materials.

Prerequisite: ITEC 272

ITEC 475 – Internship 3-12 credit hours

A work experience program planned for students preparing for employment in business and industry. The learning situation is organized and supervised cooperatively by the Department internship coordinator. Work experience must involve management training and supervisory responsibilities. Students are to contact their program coordinator prior to registering for this course.

Total Credits Allowed: 12.00

Prerequisite: ITEC 308 and GPA of 2.5 and junior standing

ITEC 482 – Digital Electronics 3 credit hours

Study of basic digital logic circuitry, computer languages, binary math, Boolean algebra, industrial control systems and current integrated circuitry technology will be included. Digital logic training systems of various manufacturers will be available for experimental work.

Prerequisite: ITEC 220 or PHYS 206 and PHYS 206L

ITEC 485 – Information Networking Seminar 3 credit hours

A review of the information networking and telecommunications industry of today. Students will be required to research various current information networking and telecommunications issues and be prepared for discussion.

Prerequisite: ITEC 390 and Senior standing

ITEC 490 – Industrial Distribution Seminar 3 credit hours

A review of industrial distribution today as it relates to management and sales of industrial products and services.

Prerequisite: ITEC 475

ITEC 494 – Special Topics in Industrial Distribution 3 credit hours

Selected topics and problems of current interest considered in depth.

The course format will vary depending upon the topic, the instructor, and student needs. Topics vary based upon current industry issues.

ITEC 495 – Special Topics in Construction Management 3 credit hours

Selected topics and problems of current interest considered in depth.

The course format will vary depending upon the topic, the instructor, and student needs. Topics vary based upon current industry issues.

ITEC 496 – Special Topics in Information Networking 3 credit hours

Selected topics and problems of current interest considered in depth.

The course format will vary depending upon the topic, the instructor, and student needs. Topics vary based upon current industry issues.

Total Credits Allowed: 6.00

ITEC 497 – Special Topics in Aviation 3 credit hours

Selected topics and problems of current interest considered in depth.

Class discussion and course projects. Topics vary each semester depending upon instructor.

Total Credits Allowed: 6.00

ITEC 498 – Seminar in Construction Management 3 credit hours

Students will be exposed to the real estate development process and the integral role of project management in meeting the goals of a successful real estate project. The emphasis of the course will be on application of project management tools and techniques utilized from pre-construction to close-out. Timely execution of quality work and effective written communication will be emphasized.

Prerequisite: ITEC 370 and ITEC 475 and Senior standing

Additional Course Fee Required

ITEC 499 – Independent Study and Research in Industrial Technology 1-6 credit hours

Concentrated work in specialized areas of industrial technology.

Total Credits Allowed: 6.00

Safety Education (SFED)

SFED 299 – Independent Studies in Safety 1-3 credit hours

There are many opportunities for independent study in the safety area. These opportunities could benefit UNK, the community, the Nebraska Safety Center and most important the student engaging in the independent study. Examples of independent studies include consumer product safety regulations, OSHA and traffic safety. This course would benefit the comparative novice in safety.

Department Consent Required

Total Credits Allowed: 3.00

SFED 310 – Driving Task Analysis 3 credit hours

This course gives an introduction to the content of driver education and driver improvement for the driver education instructor. This course provides the basis for the classroom and BTW instruction.

SFED 335 – General Safety Education 3 credit hours

This course includes a study of the philosophy of safety and safety education, the use of accident data, and the causes of accidents. Areas emphasized are: traffic, home, occupations, farm and recreational. Disaster readiness and fire prevention are included.

SFED 420 – Teaching Safety in Elementary Schools 3 credit hours

Designed to provide elementary teachers and safety education students with information, methods, techniques, and skills necessary to integrate school safety programs with core elementary classroom subjects and activities.

SFED 425 – Ergonomics 3 credit hours

This course will introduce the study of ergonomics in the workplace, human variability, human/machine interfacing, human factors in designing equipment and work station layout. Federal and state regulations and guidelines will be examined.

SFED 430 – Developing Driver Education Classroom Skills 3 credit hours

A study of the automobile and its impact on American society. Topics include: accident prevention, materials and methods used in the classroom, effects of alcohol and drugs, and psychological and sociological factors. Required for teaching driver education. Driver's license is required.

SFED 431 – Developing Driver Education Vehicle Skills 3 credit hours

Effective principles, methods, techniques and materials for use in organizing safety programs, including the teaching and administration of high school driver education. Students are given the opportunity to acquire, through supervised teaching experience, competence in developing and teaching skills and techniques, as well as transferring driver knowledge, driving skills and inspiring satisfactory driving attitudes in students.

SFED 435 – Occupation Safety/Health 3 credit hours

The study of safety and health administration, accident prevention, and the control of health hazards as related to occupations. Includes a study of current safety and health requirements. Suitable for industrial education teachers and managers in industry.

SFED 438 – Teaching the Use of the Multiple Vehicle Range 1 credit hour

Provides the student with basic and advanced techniques and methods in teaching the use of the multiple vehicle range facility and programs.

SFED 439 – Teaching Simulator Instruction 1 credit hour

Students will analyze curriculum, design instructional materials, and develop techniques for teaching with driver simulators.

SFED 440 – Competency-Based Curriculum in Traffic Safety 3 credit hours

This course will prepare driver education teachers to efficiently teach competency-based driver education courses that follow the guidelines outlined by the Nebraska Department of Education.

SFED 450 – Driver Performance Measurement 3 credit hours

This course teaches principles designed to develop and administer a valid and reliable road test.

SFED 460 – Organization and Administration of Safety Programs 1 credit hour

This course examines the organizational and administrative, theory, structure, and practices of safety programs. Students will evaluate, plan, and develop a safety program.
Corequisite: SFED 461 or SFED 462.

SFED 461 – Supervision of Industrial Safety 2 credit hours

This course examines the supervisory theory, structure, and practices of safety programs in general industry. Students will complete the OSHA 30 hour General Industry certification.
Corequisite: SFED 460.

SFED 462 – Supervision of Construction Safety Programs 2 credit hours

This course examines the organizational and administrative, theory, structure, and practices of safety programs in the construction industry. Students will complete the OSHA 30 hour Construction Industry certification.
Corequisite: SFED 460.
Additional Course Fee Required

SFED 472 – Fire Prevention, Protection and Control 3 credit hours

This is an introductory fire science course. The student will be provided an overview of fire science and loss prevention. This would include the equipment and techniques available to detect and suppress fires, recognition of hazards, and fire countermeasures.

SFED 477 – Accident/Incident Investigation and Analysis 3 credit hours

This course provides the student with knowledge into the accident and incidents investigation methods, procedures, and techniques used for prevention of future problems.

SFED 478 – Behavior Based Safety Systems 3 credit hours

Students in this course will explore the human dynamics of safety operations within the work environment and examine how tasks can be managed to significantly improve safety performance. Human practices are identified which create safety risks and analytical resolutions of those risks are determined.

SFED 496 – Advanced Safety Program in Driver and Traffic Safety Education 1-3 credit hours

Designed to help teachers become better acquainted with the problems and techniques of teaching driver and traffic safety education.
Total Credits Allowed: 3.00

SFED 498 – Special Topics in Safety 3 credit hours

Selected topics and problems of current interest considered in depth. The course format will vary depending upon the topic, the instructor, and student needs. Topics vary based upon current industry issues.

SFED 499 – Individual Research in Safety 1-3 credit hours

Total Credits Allowed: 3.00
Prerequisite: 9 credit hours of SFED courses or permission