

INDUSTRIAL AND SYSTEMS ENGINEERING

Course Search

Not all courses are offered every semester. Refer to the schedule of courses for each term's specific offerings.

[More Info](#)

Courses at the University of Florida, with the exception of specific foreign language courses and courses in the online Master of Arts in Mass Communication program, are taught in English.

Courses

COP 2271 Computer Programming for Engineers 2 Credits

Computer programming and the use of computers to solve engineering and mathematical problems. Emphasizes applying problem solving skills; directed toward technical careers in fields employing a reasonably high degree of mathematics. The programming language used depends on the demands of the departments in the college. Several languages may be taught each semester, no more than one per section. Those required to learn a specific language must enroll in the correct section. (M)

Prereq: MAC 2312 with minimum grade of C

MR

COP 2271L Computer Programming for Engineers Laboratory 1 Credit

Optional laboratory for COP 2271. Required for ISE majors. (M)

Prereq: MAC 2312

Coreq: COP 2271

MR

EGN 1935 Special Topics in Freshman Engineering 1-3 Credits

Laboratory, lectures or conferences cover selected topics in engineering.

EGN 4912 Engineering Directed Independent Research 3 Credits

Provides firsthand, supervised research with a faculty advisor or postdoctoral or graduate student mentor. Projects may involve inquiry, design, investigation, scholarship, discovery or application. (S-U)

EGN 4930 Sales Engineer Seminar 1 Credit

Intended for those interested in pursuing a career in sales engineering (required for students enrolled in the sales engineering certificate program). Lectures and discussions on practice-oriented sales engineering topics. (S-U)

EGS 1005 Prep for Success 1-4 Credits

Freshman success course that includes academic preparation in calculus, chemistry, student success and technical communications. (S-U)

Prereq: EG student

EGS 1006 Introduction to Engineering 1 Credit

Introduces the 11 departments that offer undergraduate degrees at UF. Students break into groups of 20, rotating weekly through each department. During these visits, students participate in hands-on experiments to help them make informed decisions about career alternatives.

EIN 3101C Introduction to Industrial and Systems Engineering 2 Credits

Introduction and overview of the profession, including career planning, professionalism and communication, ethics, teamwork, industry site visits, industrial speakers, and selected solution methods for problems in coordination and planning.

Prereq: ENC 3254 with a minimum grade of C

EIN 4321 Industrial Energy Management 3 Credits

Introduces energy conservation. Supply-demand data, energy economics, investment analysis and energy legislation. Audits, waste heat recovery, cogeneration and computerized energy management systems.

Prereq: EIN 4354 and PHY 2049 with minimum grades of C

EIN 4335 Senior Design Project 3 Credits

Integration of industrial and systems engineering methodologies; emphasizes methods of successful implementation. Project and case-study oriented.

Prereq: ESI 4312, ESI 4313, ESI 4523, STA 4322, ESI 4356, EIN 4354 and EGS 4034 with minimum grades of C and 5EG standing

EIN 4343 Inventory and Supply Chain Systems 3 Credits

Develops analytic abilities to formulate and solve inventory and logistics problems faced by today's firms. Learn to take a comprehensive view of complex inventory and supply-chain systems; develop abilities to model, optimize and design such systems.

Prereq: ESI 4321 and ESI 4313 with minimum grades of C

EIN 4354 Engineering Economy 3 Credits

Basic principles and applications of economic decision-making between alternatives encountered in engineering systems projects. Analysis includes methodologies of economics and finance in addition to engineering fundamentals.

Prereq: MAC 2312 with a minimum grade of C

EIN 4360C Facility Planning and Work Design 4 Credits

Introduces fundamental concepts in several main areas of industrial engineering such as facility planning, material handling systems, work analysis and design. Covers topics such as analysis and design of work space and flow, facility location and layout, material handling systems, motion and time studies and work sampling.

Prereq: ENC 3250 or ENC 3254 and EML 2023 or equivalent with minimum grades of C

Coreq: EIN 4354

EIN 4451 Lean Production Systems 3 Credits

Design of flow line, cellular and flexible manufacturing systems. Design and control of lean manufacturing systems. Continuous improvement, small lot production, setup-time reduction, equipment improvement and maintenance. Principles and control of push and pull manufacturing systems. Production planning and operations scheduling.

Prereq: ESI 4312 and STA 4321

EIN 4905 Special Problems in Industrial and Systems Engineering 1-4 Credits

Problems and systems studies associated with honors programs representing undergraduate research. Selected advanced topics including new developments and techniques in industrial and systems engineering.

EIN 4912 Integrated Product and Process Design 1 3 Credits

The first part of a two-course sequence in which multidisciplinary teams of engineering and business students partner with industry sponsors to design and build authentic products and processes on time and within budget. Working closely with industry liaison engineers and a faculty coach, students gain practical experience in teamwork and communication, problem solving and engineering design, and develop leadership, management and people skills.

Prereq: EIN 4354 and EIN 4360 with minimum grades of C

Coreq: ESI 4221C with minimum grade of C

EIN 4913 Integrated Product and Process Design 2 **3 Credits**

The second part of a two-course sequence in which multidisciplinary teams of engineering and business students partner with industry sponsors to design and build authentic products and processes-on time and within budget.

Prereq: 3EG or 4EG classification and EGS 4034 with a minimum grade of C

EIN 4937 Industrial and Systems Engineering Seminar **1 Credit**

Lectures and discussions on general and specific engineering problems. Individual investigations and research reports on assigned topics. Orientation for an industrial career. (S-U)

Prereq: 3EG or 4EG standing in industrial and systems engineering

EIN 4944 Practical Work in Industrial and Systems Engineering **1-3 Credits**

One term of industrial employment, including extra work according to a preapproved outline. Practical engineering work under industrial supervision as set forth in the Herbert Wertheim College of Engineering regulations. (S-U)

Prereq: 4EG classification and EGS 4034 with a minimum grade of C

ESI 4221C Industrial Quality Control **3 Credits**

Factors affecting variation in product quality; use of control charts to evaluate and control manufacturing processes. Techniques for acceptance and reliability testing. Laboratory exercises illustrate the operation and control of manufacturing processes and hazard function. Typical failure distributions, redundant systems, models of repair and maintenance.

Prereq: STA 4321 and STA 4322 with minimum grades of C

ESI 4312 Operations Research 1 **4 Credits**

Introduces optimization modeling, algorithms and software to aid in the analysis and solution of decision-making problems.

Prereq: ESI 4327C with minimum grade of C

ESI 4313 Operations Research 2 **4 Credits**

Introduces stochastic models and methodologies for analyzing and providing solutions to decision-making problems with uncertainties.

Prereq: ESI 4327C and STA 4321 with minimum grades of C

ESI 4327C Matrix and Numerical Methods in Systems Engineering **4 Credits**

Theory and application of vector, matrix and other numerical methods to systems problems. Simultaneous linear equations, characteristic values, quadratic forms, error analysis, use of series, curve fitting, nonlinear equations, discrete methods. Laboratory emphasize numerical solutions using MATLAB.

Prereq: MAC 2313 and MAP 2302 with minimum grades of C

ESI 4356 Decision Support Systems for Industrial and Systems Engineers **4 Credits**

Applications of decision support systems in industrial and systems engineering; developing and implementing decision support systems arising in industrial and systems engineering using popular database management and spreadsheet software.

Prereq: COP 2271 and ESI 4312 with minimum grades of C

ESI 4357 Web-Based Decision Support Systems for Industrial and Systems Engineers **4 Credits**

Introduces the Internet and e-commerce; Internet tools and technologies necessary for the development of web-based decision support systems; designing and implementing web-based decision support systems arising in the practice of industrial and systems engineering using popular software packages.

Prereq: COP 2271 and ESI 4312 with minimum grades of C

ESI 4523 Industrial Systems Simulation **3 Credits**

Simulation methodology and languages (such as General Purpose Simulation System - GPSS). Design and analysis of simulation experiments as well as applications to solutions of industrial and service system problems.

Prereq: COP 2271, STA 4322 and ESI 4313 with minimum grades of C

ESI 4949 Co-Op Work Experience **1 Credit**

Practical engineering work under industrial supervision, as set forth in the Herbert Wertheim College of Engineering regulations. (S-U)

Prereq: EGS 4034 with a minimum grade of C
