INTERPROFESSIONAL PROGRAMS

Courses

ENCP 530 - Cases in Technology Feasibility Analysis (3 Credits)
Technology innovation, exploitation of intellectual property, and technology feasibility analysis.

ENCP 533 - Legal Aspects of Engineering & Innovation (3 Credits)
Contracts, products liability, intellectual property including patent, trade secrets, copyrights and trademarks, and business torts relating to product design.

ENCP 535 - Developing and Launching New Ventures in Science and Technology (3 Credits)
Processes, strategies and tools to analyze and facilitate the emergence of science and technology oriented ventures.

ENCP 536 - Innovation and New Venture Analysis (3 Credits)
Entrepreneurial perspective and planning, market preparation, business model analysis, business planning and fundraising.

ENCP 540 - Environmentally Conscious Manufacturing (3 Credits)
Design for the environment; life cycle analysis; environmental economics and global competitiveness; legal and regulatory affairs; and management of technological change. Interdisciplinary collaboration of engineering, science, math, and business majors. Graduate student standing or consent of instructor.

ENCP 602 - Introduction to Engineering Design for Teachers (3 Credits)
An introduction to computer-aided design with solid modeling for pre-service and in-service teachers. Design process, professional communication and collaboration methods, design ethics, and technical documentation. Non-engineering and computing majors only. Prerequsite: college algebra with trigonometry.

ENCP 603 - Gateway to Technology for Teachers (3 Credits)
Addresses the development of knowledge, skills, and understanding of modern technology. For preservice and in-service teachers. College of Engineering and Computing majors are excluded.
Prerequisites: MATH 112 or MATH 115.

ENCP 605 - Principles of Engineering for Teachers (3 Credits)
Introduces technological processes employed in engineering and engineering technology for K-12 teachers. For pre-service and in-service teachers. College of Engineering and Computing majors are excluded.
Prerequisites: MATH 112 or MATH 115.

ENCP 701 - Instructional Assistant Development (0 Credits)
Seminar exploring the pedagogical principles, methods, and issues related to teaching STEM in higher education.

ENCP 707 - Continuum Mechanics (3 Credits)
Development of theory of strain and of stress; constitutive equations; compatibility conditions; equations of motion. An introduction to courses in mechanics of solids and of fluids.

ENCP 710 - Dynamic Analysis (3 Credits)
Analysis of lumped and continuous multidegree of freedom mechanical systems. Transfer function analysis. Response of systems to steady-state, shock, and random excitation. Introduction to non-linear vibrations and wave propagation.
Prerequisites: ENCP 424.

ENCP 721 - Elasticity (3 Credits)
Equilibrium, strain-displacement, compatibility, and constitutive equations in terms of complex potential stress functions, applications to plane engineering boundary value problems including beams, disks, thick-walled tubes, and stress concentration problems.
Prerequisites: ENCP 707.

ENCP 734 - Prototype Design & Manufacturing (3 Credits)
Development processes and organization, product planning, manufacturing principles, and prototyping.

ENCP 737 - Entrepreneurial Laboratory (6 Credits)
Supervised experience in the field of technology innovation and engineering entrepreneurship.

ENCP 788 - Independent Project in Artificial Intelligence (1-6 Credits)
Independent project in artificial intelligence. Topic and contract are to be approved by instructor, advisor, and graduate program director.

ENCP 789 - Advanced Special Topics in Engineering and Computing (0-3 Credits)
Special topics of an interdisciplinary nature for graduate students of engineering and computing. Course content varies and will be announced in the schedule of classes by title.

ENCP 801 - Graduate Student as Researcher (0 Credits)
Introduction to professional skills for graduate-level researchers in STEM fields, including researcher identity, competence, ethics, and professional and career development.

INDE 561 - Special Topics in Industrial Engineering (1-6 Credits)
Content varies and will be announced in the schedule of classes by section title. May be repeated for different topics.

INDE 591 - Smart Manufacturing (3 Credits)
Advanced concepts of smart manufacturing: hardware infrastructure, cyber infrastructure, data infrastructure, industrial Internet of things, machine to machine network, machine vision, manufacturing event understanding.
Prerequisites: D or better in INDE 291 or EMCH 377 .

INDE 593 - Supply Chain Engineering (3 Credits)
Engineering analysis of the movement, production, and storage of raw materials, work-in-process inventory, finished goods, and services from point of origin to point of consumption or use.
Prerequisites: D or better in INDE 392.

INDE 595 - Systems Simulation (3 Credits)
Discrete event simulation methodology emphasizing the statistical basis for simulation modeling and analysis. Overview of computer languages and simulation design applied to various industrial situations.
Prerequisites: D or better in INDE 392.