

# ENGINEERING (ENGR)

## **ENGR 1100 Introduction to the Engineering Profession.** (Formerly 100)

This course is an introduction to the field of engineering designed for students entering or considering the engineering profession as a career path. The course consists of hands-on projects, where students will learn the basics of the engineering design process, as well as presentations by outside speakers who will discuss specifics about the different fields of engineering. 1 semester credit hour/s.

**Campus:** LISLE (Typically Offered: Fall Term)

**ENGR 1110 Engineering Design.** (Formerly 110) A hands-on course where students learn the engineering design process and problem solving through the implementation and completion of projects from different fields of engineering. During the course students will work in groups to develop skills in design, teamwork, technical writing, and presentations. 3 semester credit hour/s.

**Designation:** Writing Intensive; Physical-Scientific (QPS)

**Campus:** LISLE (Typically Offered: Spring Term)

**ENGR 1120 Engineering Graphics.** (Formerly 120) Fundamentals of engineering communications employing applied geometry in instrument and CAD presentation and interpretation of orthographic, sectional, intersection, development and pictorial views. Introduction to basic machine elements and 3D design. 2 semester credit hour/s.

**Campus:** LISLE (Typically Offered: Fall Term)

**ENGR 2220 Statics.** (Formerly PHYS 220) This class covers the principles of mechanics and their application to static engineering problems. The course includes both lecture and lab components designed to stimulate students' understanding of equilibrium concepts in mechanics. Vector analysis will be discussed as a useful tool. Topics will include: statics of particles, rigid bodies: (equivalent systems of forces, equilibrium of rigid bodies), distributed forces (centroids and centers of gravity, analysis of structures, internal forces and moments, friction, moments of inertia). Prerequisite: "C" or higher in PHYS 2211, and credit/co-registration in MATH 2211. IAI EGR942. 3 semester credit hour/s.

**Campus:** LISLE (Typically Offered: Fall Term)

**ENGR 3221 Dynamics.** (Formerly PHYS 221) This class covers the principles of mechanics and its application to dynamic physics and engineering problems. The topics include (but not limited to): kinematics of particles, kinetics of particles (Newton's second law, energy and momentum methods), systems of particles, kinematics of rigid bodies, plane motion of rigid bodies (forces and accelerations, energy and momentum methods, mechanical vibrations). Prerequisite: "C" or better in PHYS 2220 or ENGR 2220 and credit or co-registration in MATH 2260. 3 semester credit hour/s.

**Designation:** -

**Campus:** LISLE (Typically Offered: Spring Term, Even Years)

**ENGR 3264 Electronics.** (Formerly PHYS 264) An integrated laboratory and lecture course designed to cover the basic principles of modern electronics. Topics include AC and DC circuits, linear and non-linear devices, nodal analysis, mesh analysis, power supplies, operational amplifiers, logic circuits, and Laplace transforms. Lecture and laboratory work are integrated allowing the students to test theories through projects and experiments. Prerequisite: "C" or better in PHYS 2212 and MATH 2211. 3 semester credit hour/s.

**Campus:** LISLE (Typically Offered: Spring Term, Odd Years)

**ENGR 3330 Renewable Energy Engineering I.** An interdisciplinary course concentrated on studying the renewable energy sources, including solar and wind, as well as energy storage technologies such as batteries.

The emphasis will be on understanding the science behind these technologies, their contemporary applications, and the prospect for environmental sustainability. Pre-requisite: "C" or better in PHYS 1118 or PHYS 2212 and "C" or better in CHEM 1123. 3 semester credit hour/s.

**Campus:** LISLE (Typically Offered: Fall Term)

**ENGR 3331 Renewable Energy Engineering II.** An interdisciplinary course concentrated on studying the renewable energy sources, including solar and wind, as well as energy storage technologies such as batteries.

The emphasis will be on understanding the science behind these technologies, their contemporary applications, and the prospect for environmental sustainability. Pre-requisite: "C" or better in PHYS 1118 or PHYS 2212 and "C" or better in CHEM 1123. 3 semester credit hour/s.

**Campus:** LISLE (Typically Offered: Fall Term)

**ENGR 4393 Engineering Internship.** Practical experience in engineering or related career areas under the supervision of the engineering program. Prerequisite: consent of faculty coordinator. 0-15 semester credit hour/s. Course Repeatable. Maximum number of units allowed: 24. Department Consent Required.

**Designation:** Engaged Learning

**Campus:** LISLE (Typically Offered: Periodically)

**ENGR 4398 Engineering Research.** Research in engineering conducted under the supervision of a faculty or adjunct faculty member. Publication and public presentation of the research are course objectives.

Prerequisite: departmental consent. 0-3 semester credit hour/s. Course Repeatable. Maximum number of units allowed: 24. Department Consent Required.

**Designation:** Engaged Learning

**Campus:** LISLE (Typically Offered: Fall, Spring, and Summer Terms)