ENSC 2113 Statics
Prerequisites: Either MATH 2133 or MATH 2144 and either PHYS 1114 or
PHYS 2014 with grades of "C" or better.
Description: Resultants of force systems, static equilibrium of rigid
bodies, statics of structures, and fluid statics. Shear and moment
diagrams.
Credit hours: 3
Contact hours: Lecture: 2 Contact: 3 Other: 1
Levels: Undergraduate
Schedule types: Discussion, Combined lecture & discussion, Lecture
Department/School: Dean of Engineering

ENSC 2123 Elementary Dynamics
Prerequisites: ENSC 2113 with a grade of "C" or better.
Description: Kinematics and kinetics of particles, systems of particles,
and rigid bodies from a Newtonian viewpoint using vector algebra and
calculus. Work-energy and impulse-momentum principles. Planar and
three-dimensional kinetics and kinematics of rigid bodies.
Credit hours: 3
Contact hours: Lecture: 2 Contact: 3 Other: 1
Levels: Undergraduate
Schedule types: Discussion, Combined lecture & discussion, Lecture
Department/School: Dean of Engineering

ENSC 2143 Strength of Materials Lab
Prerequisites: Concurrent enrollment in ENSC 2143 or GENT 3323 or
permission of the instructor.
Description: Study the sensing, conditioning and acquisition of load,
deformation and strain data and the inference of stress. Develop and
conduct appropriate experimentation, analyze and interpret data, and
use engineering judgment to draw conclusions. Perform material
tensile tests and acquire stress and strain data. Study the behavior of
engineering materials in service and failure. Operate 3D printers and
mills to manufacture samples and structures for testing. Test engineered
designs of beams, pressure vessels, truss and frames structures, etc. to
failure and compare to design predictions from ENSC 2143. Preparation
of formal reports, including the presentation of plots, figures and table.
Credit hours: 1
Contact hours: Lab: 2 Contact: 2
Levels: Undergraduate
Schedule types: Lab
Department/School: Dean of Engineering

ENSC 2213 Thermodynamics
Prerequisites: A grade of "C" or better in CHEM 1314, CHEM 1414 or
CHEM 1515, MATH 2144, PHYS 2014.
Description: Properties of substances and principles governing changes
in form of energy. First and second laws.
Credit hours: 3
Contact hours: Lecture: 2 Contact: 3 Other: 1
Levels: Undergraduate
Schedule types: Discussion, Combined lecture & discussion, Lecture
Department/School: Dean of Engineering

ENSC 2411 Electrical Science Lab
Prerequisites: ENSC 2613 or concurrent enrollment in ENSC 2613 or
permission of instructor.
Description: Laboratory providing hands-on experience with electrical
topics related to Electrical Science. May not be used for degree credit
with ENSC 2611.
Credit hours: 1
Contact hours: Lab: 2 Contact: 2
Levels: Undergraduate
Schedule types: Lab
Department/School: Dean of Engineering

ENSC 2611 Electrical Fabrication Lab
Prerequisites: ENSC 2613 or concurrent enrollment in ENSC 2613 or
ECEN 2714 or concurrent enrollment in ECEN 2714 or permission of
instructor.
Description: This course will cover electrical fabrication techniques
including schematic capture, printed circuit board layout, circuit board
milling, cabling, heat sinks, soldering and package design. An emphasis
on a hands-on experience with modern PCB fabrication tools and
equipment will be central to this course.
Credit hours: 1
Contact hours: Lab: 2 Contact: 2
Levels: Undergraduate
Schedule types: Lab
Department/School: Dean of Engineering

ENSC 2613 Introduction to Electrical Science
Prerequisites: MATH 2153.
Description: Elements of electrical engineering; AC and DC circuits, mesh
and node formulation of network equations, steady-state response to
sinusoids, energy, power and power factor.
Credit hours: 3
Contact hours: Lecture: 2 Contact: 3 Other: 1
Levels: Undergraduate
Schedule types: Discussion, Combined lecture & discussion, Lecture
Department/School: Dean of Engineering

ENSC 3231 Fluids and Hydraulics Lab
Prerequisites: Concurrent enrollment in ENSC 3233 or MET 3313 or
FPST 2483 or MAE 3333 or permission of instructor.
Description: Laboratory providing hands-on experience with standard
measurement techniques of fluid mechanics and their applications.
Develop and conduct appropriate experimentation, analyses and interpret
data to draw conclusions using engineering judgment. Comparison of
analytical models introduced in an introductory fluid mechanics course
to the actual behavior of real fluid flows. Preparation of formal reports,
including the presentation of plots, figures, and tables.
Credit hours: 1
Contact hours: Lab: 2 Contact: 2
Levels: Undergraduate
Schedule types: Lab
Department/School: Dean of Engineering
ENSC 3233 Fluid Mechanics
Prerequisites: ENSC 2113 and MATH 2153 with a grade of "C" or better.
Description: The study of fluid properties, statics, conservation equations, dimensional analysis and similitude, viscous flow in ducts, inviscid flow, boundary layer theory, open channel flow, turbomachinery and fluid measurement techniques.
Credit hours: 3
Contact hours: Lecture: 2 Contact: 3 Other: 1
Levels: Undergraduate
Schedule types: Discussion, Combined lecture & discussion, Lecture
Department/School: Dean of Engineering

ENSC 3311 Material Science Lab
Prerequisites: Concurrent enrollment in ENSC 3313 or permission of the instructor.
Description: Study of material science offering students the ability to conduct hands on experiments, analyze and interpret data, and use engineering judgement to draw conclusions. Perform a wide array of material testing methods and fundamental material science concepts covered in ENSC 3313. A wide range of materials: ferrous, nonferrous, polymers, concrete and composites will be used in lab experiments. Preparation of formal reports by students working part & interdisciplinary groups.
Credit hours: 1
Contact hours: Lab: 2 Contact: 2
Levels: Undergraduate
Schedule types: Lab
Department/School: Dean of Engineering

ENSC 3313 Materials Science
Prerequisites: CHEM 1314 or CHEM 1414 or CHEM 1515.
Description: Introductory level. Relationship between structure and properties of materials and engineering applications. Atomic, microscopic and macroscopic properties.
Credit hours: 3
Contact hours: Lecture: 3 Contact: 3
Levels: Undergraduate
Schedule types: Lecture
Department/School: Dean of Engineering

ENSC 3431 Thermodynamics and Heat Transfer Lab
Prerequisites: Concurrent enrollment in ENSC 2213 or MET 3433 or MAE 3233 or MET 3453 or MET 4433 or permission of the instructor.
Description: Laboratory providing hands-on experience with engineering topics related to fundamental principles of Thermodynamics and Heat Transfer.
Credit hours: 1
Contact hours: Lab: 2 Contact: 2
Levels: Undergraduate
Schedule types: Lab
Department/School: Dean of Engineering