Engineering Core (ECOR)

Engineering Core (ECOR) Courses

Mechanical & Aerospace Eng.

Faculty of Engineering & Design

ECOR 1010 [0.5 credit]
Introduction to Engineering

Technology, society and the environment. Graphical design communication: sketching, graphical projections; CAD. Managing data: statistical methods; spreadsheets. Design analysis: matrix programming software; symbolic computer algebra systems. Design process: proposals; reports; presentations; reporting software.
Precludes additional credit for ECOR 1000.
Lectures four hours per week, laboratories two hours per week.

ECOR 1101 [0.5 credit]
Mechanics I

Introduction to mechanics. Scalars and vectors. Concurrent forces: resultant and components. Statics of particles. Moments and couples. Force system resultants. Rigid body equilibrium. Frames and machines. Internal forces. Kinematics and kinetics of particles. Conservation theorems: work-energy; impulse-momentum. Centroids and centres of gravity.
Prerequisite(s): MATH 1004 and MATH 1104.
Lectures three hours a week, tutorials and problem analysis three hours a week.

ECOR 1606 [0.5 credit]
Problem Solving and Computers

Introduction to engineering problem solving. Defining and modeling problems, designing algorithmic solutions, using procedural programming, selection and iteration constructs, functions, and arrays, converting algorithms to a program, testing and debugging. Program style, documentation, reliability. Applications to engineering problems, which may include numerical methods, sorting and searching.
Precludes additional credit for SYSC 1100 and SYSC 1102.
Lectures three hours a week, laboratory three hours a week.

ECOR 2606 [0.5 credit]
Numerical Methods

Numerical algorithms and tools for engineering and problem solving. Sources of error and error propagation, solution of systems of linear equations, curve fitting, polynomial interpolation and splines, numerical differentiation and integration, root finding, solution of differential equations. Software tools.
Precludes additional credit for SYSC 2606.
Prerequisite(s): MATH 1005 and (ECOR 1606 or SYSC 1005) and (ECOR 1010 or ELEC 1908).
Lectures three hours a week, laboratory 1.5 hours a week.

ECOR 3800 [0.5 credit]
Engineering Economics

Introduction to engineering economics; cash flow calculations; methods of comparison of alternatives; structural analysis; replacement analysis; public projects; depreciation and income tax; effects of inflation; sensitivity analysis; break-even analysis; decision making under risk and uncertainty.
Prerequisite(s): third-year status in Engineering.
Lectures three hours a week.

ECOR 4995 [0.5 credit]
Professional Practice

Presentations by faculty and external lecturers on the Professional Engineers Act, professional ethics and responsibilities, practice within the discipline and its relationship with other disciplines and to society, health and safety, environmental stewardship, principles and practice of sustainable development. Communication skills are emphasized.
Precludes additional credit for MAAE 4905, CIVE 4905, SYSC 3905 or ELEC 3905.
Prerequisite(s): fourth-year status in Engineering.
Lectures three hours a week.

Summer session: some of the courses listed in this Calendar are offered during the summer. Hours and scheduling for summer session courses will differ significantly from those reported in the fall/winter Calendar. To determine the scheduling and hours for summer session classes, consult the class schedule at central.carleton.ca

Not all courses listed are offered in a given year. For an up-to-date statement of course offerings for the current session and to determine the term of offering, consult the class schedule at central.carleton.ca