Engineering Core (ECOR)

Engineering Core (ECOR) Courses

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
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, arrays, converting algorithms
to a program, testing and debugging. Program style,
documentation, reliability. Applications to engineering
problems; may include numerical methods, sorting and
searching.
Precludes additional credit for SYSC 1005, SYSC
1100(no longer offered), SYSC 1102(no longer offered),
COMP 1005, COMP 1405.
Lectures three hours a week, laboratory three hours a
week.

ECOR 2050 [0.5 credit]
Design and Analysis of Engineering Experiments
Statistics and the design of engineering experiments.
Basic exploratory data analysis. Central limit theorem.
Hypothesis testing: t-test, chi-square test, type-I and
type-II errors, multiple-comparison problem. Statistical
bias. Design of experiments: randomization, blocking and
replication, randomized blocking designs, factorial design.
Statistical software packages.
Prerequisite(s): 2nd Year Status in Engineering.
Lectures three hours a week, problem analysis and
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.

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