Information Technology (BIT)

Information Technology (BIT) Courses

School of Information Technology

Faculty of Engineering & Design

BIT 1000 [0.5 credit]
Mathematics I for NET
Tailored for students in the Network Technology program, this course covers differentiation and integration of the elementary functions, definite and indefinite integrals, partial differentiation, sequences, series, and techniques and applications of integration.
Precludes additional credit for BIT 1100, MATH 1004, MATH 1007, MATH 1009
Prerequisite(s): restricted to students in the B.I.T. degree program.
Lectures: three hours a week, tutorial/laboratory one hour a week.

BIT 1001 [0.5 credit]
Mathematics II for NET
Tailored for students in the Network Technology program, this course covers systems of linear equations, vector space of n-tuples, subspaces and bases, matrix transformations, kernel, range, matrix algebra and determinants, inner products and orthogonality, eigenvalues, diagonalization and applications.
Precludes additional credit for MATH 1107.
Prerequisite(s): restricted to students in the B.I.T. degree program.
Lectures three hours a week, tutorial and laboratory one hour a week.

BIT 1002 [0.5 credit]
Physics for Information Technology I
An introductory course on energy, thermodynamics, sound and electromagnetic waves, optics, and modern physics. Practical skills are learned in the laboratory, which is a required part of the course.
Restricted to students in the B.I.T. degree program.
Precludes additional credit for PHYS 1007.
Lectures three hours a week, tutorial 1.5 hours a week, laboratory three hours alternate weeks.

BIT 1003 [0.5 credit]
Physics for Information Technology II
Electrostatics, electric field and potential. Capacitors, inductors. Study of DC and AC Circuits. Introduction to semiconductors.
Practical skills are learned in the laboratory, which is a required part of the course.
Precludes additional credit for PHYS 1008.
Prerequisite(s): BIT 1002.
Lectures three hours a week, tutorial 1.5 hours a week, laboratory three hours alternate weeks.

BIT 1100 [0.5 credit]
Mathematics I for IMD
Tailored for students in the interactive Multi-media Design program, this course covers limits, differentiation of the elementary functions, including trigonometric functions.Rules of differentiation.Applications of differentiation: max-min problems, curve sketching, approximations.A brief introduction to integration.
Precludes additional credit for BIT 1000, MATH 1004, MATH 1007, MATH 1009
Prerequisite(s): restricted to students in the B.I.T. degree program.
Lectures three hours a week, tutorial/laboratory one hour a week.

BIT 1101 [0.5 credit]
Mathematics II for IMD
Tailored for students in the interactive Multi-media Design program, this course covers systems of linear equations, vector space of n-tuples, subspaces and bases, matrix transformations, kernel, range, matrix algebra and determinants, inner products and orthogonality, eigenvalues, diagonalization and applications.
Precludes additional credit for MATH 1107.
Prerequisite(s): restricted to students in the B.I.T. degree program.
Lectures three hours a week, tutorial and laboratory one hour a week.

BIT 1200 [0.5 credit]
Mathematics I for Photonics
Tailored for students in the Photonics program, this course covers differentiation and integration of the elementary functions, definite and indefinite integrals, partial differentiation, sequences, series, and techniques and applications of integration.
Prerequisite(s): restricted to students in the B.I.T. degree program.
three hours a week, tutorial/laboratory one hour a week.

BIT 1201 [0.5 credit]
Mathematics II for PLT
Tailored for students in the Photonics program, this course covers systems of linear equations, vector space of n-tuples, subspaces and bases, matrix transformations, kernel, range, matrix algebra and determinants, inner products and orthogonality, eigenvalues, diagonalization and applications.
Precludes additional credit for MATH 1104.
Prerequisite(s): restricted to students in the B.I.T. degree program.
Lectures three hours a week, tutorial and laboratory one hour a week.

BIT 1203 [0.5 credit]
Physics for Photonics I
Mechanics, gravitation, oscillations, and thermodynamics. The application of calculus to solve problems in these areas of physics is introduced. This course is intended for students in the physical sciences and engineering. The laboratory is an essential and autonomous part of the course.
Prerequisite(s): Grade 12 Physics or equivalent, plus Grade 12 Advanced Functions or Grade 12 Advanced Functions and Introductory Calculus or equivalent, plus one of MATH 1004 or MATH 1002 (the MATH course may be taken concurrently). Note that Grade 12 Calculus and Vectors or Grade 12 Geometry and Discrete Mathematics is strongly recommended. Restricted to students in the B.I.T. degree program.
Lectures three hours a week, laboratory or tutorial three hours a week.

BIT 1204 [0.5 credit]
Physics for Photonics II
This calculus-based course introduces electricity, magnetism, oscillations, waves and optics. The laboratory is an essential and autonomous part of the course.
Lectures three hours a week, laboratory or tutorial three hours a week

BIT 2000 [0.5 credit]
Introduction to Statistics for NET
Tailored for students in the Network Technology program, this course covers data analysis, introduction to probability theory, some standard discrete and continuous distributions and their application to interval estimation and significance testing, computational aspects of statistics. Precludes additional credit for STAT 2507.
Prerequisite(s): restricted to students in the BIT degree program.
Lectures three hours a week, tutorial/laboratory one hour a week.

BIT 2001 [0.5 credit]
Introduction to Business
An overview of the most fundamental business functions. The management of people, human resources, marketing, accounting and finances, business law and operations.
Prerequisite(s): restricted to students in the B.I.T. degree program.
Lectures: three hours a week.

BIT 2002 [0.5 credit]
Marketing in the IT sector
Basic problems and practices in marketing. Marketing strategies, planning, packaging, branding and promotion at the level of the individual firm; distribution channels.
Prerequisite(s): restricted to students in the B.I.T. degree program.
Lectures three hours a week.

BIT 2003 [0.5 credit]
Elective
Students must choose from among a list of approved Electives at Algonquin College.
Prerequisite(s): restricted to students in the B.I.T. degree program.

BIT 2004 [0.5 credit]
Differential Equations For Photonics
First-order differential equations. Second-order linear equations with constant coefficients, undetermined coefficients, variation of parameters. Systems of equations. Sequences and series, convergence tests, estimation of sums. Power series, Taylor series, remainders. Fourier series.
Lectures three hours a week, laboratory three hours a week.

BIT 2005 [0.5 credit]
Multivariate Calculus for Photonics
Fourier series; expansions for even and odd functions; half-range expansions. Surfaces in R3. Differential calculus of functions of several variables. Extrema and Lagrange multipliers. Exact differentials. Line integrals. Double integrals; polar coordinates; applications. Triple integrals; cylindrical and spherical coordinates; applications.
Prerequisite(s): BIT 1200, BIT 1201. Restricted to students in the B.I.T. degree program.
Lectures three hours a week, tutorial one hour a week.

BIT 2100 [0.5 credit]
Introduction to Statistics for IMD
Tailored for students in the interactive Multi-media Design program, this course covers data analysis, introduction to probability theory, some standard discrete and continuous distributions and their application to interval estimation and significance testing, computational aspects of statistics. Precludes additional credit for STAT 2507.
Prerequisite(s): restricted to students in the B.I.T. degree program.
Lectures three hours a week, tutorial/laboratory one hour a week.

BIT 2300 [0.5 credit]
Introduction to Statistics for PLT
Tailored for students in the Photonics program, this course covers data analysis, introduction to probability theory, some standard discrete and continuous distributions and their application to interval estimation and significance testing, computational aspects of statistics.
Prerequisite(s): Prerequisite: restricted to students in the BIT degree program.
Lectures three hours a week, tutorial/laboratory one hour a week.

BIT 3003 [0.5 credit]
Elective
Students must choose from among a list of approved Electives at Algonquin College.
Prerequisite(s): restricted to students in the B.I.T. degree program.
Lectures three hours a week, or as arranged.

BIT 3999 [0.0 credit]
Co-operative Work Term

BIT 4000 [0.5 credit]
Directed Studies
A course of independent study under the supervision of a member of the School of Information Technology, open only to students in the B.I.T. program. Students are required to obtain their supervisor's written approval prior to registration and are limited to one such course in their programs.
Prerequisite(s): permission of the School of Information Technology.

BIT 4001 [0.5 credit]
Selected Topics in Information Technology
Topics not ordinarily treated in the regular course program due to their contemporary subject matter. The choice of topics varies from year to year.
Prerequisite(s): third-year standing in the BIT Program or permission of the department.
Lecture 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