

LIBERAL SCIENCE

PROFESSOR(S)

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ASSOCIATE PROFESSOR(S)

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ADJUNCT PROFESSORS

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L. Duchesne, B.Sc. (Laval), M.Sc. (Toronto), Ph.D. (Guelph);
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PROFESSOR(S) EMERITUS

T. A. Allaway, B.A. (Hons) (Swarthmore), M.A., Ph.D. (Pennsylvania), C. Psych.;
I. W. Brown, B.A., M.A. (McGill), Ph.D. (Lehigh);
J. A. Dunning, B.A. (Grinnell), M.A. (Western Michigan);
R. G. Ewing, M.A. (Hons), Ph.D. (Edinburgh);
F. R. Guth, B.A. (Hons), M.A., L.Ph. (Ottawa), Ph.D. (Toronto);
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M. A. Keppel-Jones, B.Sc. (Natal), B.A. (Hons) (Toronto), M.Sc. (Queen's), Ph.D. (Cornell);
J.J. Rajnovich, B.A. (Hons), M.A. (Toronto), B.Sc. (LSSU), M.Sc. (McMaster), Ph.D. (Western Ontario);
L. Sorensen, B.A., M.A., Ph.D., (Western Ontario), Reg. Psychologist (Ontario);
S. W. Sanders, B.Sc. (Hons) (Hillsdale), M.Sc., Ph.D. (Michigan)

BACHELOR OF LIBERAL SCIENCE

This highly adaptable, three year program is most suitable for students interested in acquiring a basic understanding of a number of disciplines. The program leading to the degree of Bachelor of Science (Liberal) is offered on a full-time and part-time basis, as well as through Co-operative Education. Within the requirements of the program considerable flexibility exists to accommodate the various thematic interests of students. In the sections which follow, students are directed to the regulations which apply to this degree, the various subjects and their specific requirements, and the courses which may be included as a part of the science component of the degree.

PURPOSE OF THE PROGRAM

A liberal education has been defined as an education which develops a broad-based intellectual, moral and aesthetic maturity. The Liberal Science degree is designed to serve the needs of students who wish to emphasize, in the context of a liberal education, an understanding of the status, concepts, and orientations of modern science.

A Liberal Science degree is a suitable background for a number of professions. Students with Liberal Science backgrounds can go into science information processing careers (science librarians, public relations, journalism); some use the degree as an entry point into other professions such as teaching, law, and medical fields; some students already in the work force use the degree as a basis for professional upgrading.

The degree program is flexible, so therefore it is possible to design a program to fit divergent career plans.

DEGREE REQUIREMENTS

To graduate with a Bachelor of Science (Liberal), a student must:

1. Satisfy all stated requirements for the degree.
2. Complete 90 credits in no more than 132 credit attempts with a minimum overall average of 60 per cent on all passed courses (*only courses taken at Algoma University are to be included in the calculation of averages*).
3. Complete a minimum of 54 credits in science courses chosen from at least three departments.
4. Complete at least six credits in each of two of the following disciplines: Biology, Chemistry, Mathematics, and Physics.
5. Complete two continuations in different science disciplines (*a continuation is a sequence of 18 credits in one discipline with six credits taken from the first-year level and 12 credits taken from upper-year courses*).
6. Complete six credits from among the following courses:

ENGR 4117 E	Engineering, Technology and Society
HIST 2245 E	History of Science
PHIL 2216 E	Principles of Environmental Ethics
PHIL 2217 E	Topics in Environmental Ethics
PHIL 2346 E	Principles of Biomedical Ethics
PHIL 2347 E	Biomedical Ethics: Case Studies
PHIL 2505 E	Straight Thinking and Argument
PHIL 2915 E	Philosophy of Science
PHIL 2916 E	Science and Philosophy
RLST 3306 E	Religion and Science

7. Complete 30 additional credits in elective courses, 12 credits of which must come from non-science courses (*if the student is required to take language course(s) as part of his/her admission requirement, these language course(s) may count as non-science credits to fulfil this elective requirement*).
8. Achieve at least a 60% average on the courses presented for each continuation.
9. Not exceed a maximum of 48 credits at the first year level.

SCIENCE CONTINUATIONS

A continuation is a sequence of 18 credits in one discipline; normally, six credits are taken from the first-year level and 12 credits taken from upper-year courses. The exception to this regulation is Mathematics. Continuations are available at Algoma U in the following areas:

Biology

Continuations in Biology may begin with any of BIOL 1000 E, 1506/1507 E, or 1700 E. Continuations may be arranged in consultation with the Biology Department, and will be governed primarily by prerequisite considerations. A Biology continuation in Liberal Science may include up to 9 credits from among PSYC 2606 E, 2617 E, 2906 E, 2907 E, 3506 E, and 3507 E which are available at Algoma U.

Chemistry

Continuations should begin with any of CHMI 1006/1007 E, 1041 E or 1202 E. Continuations may be arranged in consultation with the Chemistry Department, and will be governed primarily by prerequisite considerations.

Computer Science

Continuations in Computer Science must include COSC 1046 E and 1047 E, plus 12 credits of upper-year Computer Science courses. No more than nine credits may be taken from the Service & Practical Courses list.

Mathematics

Continuations in Mathematics may consist of MATH 1036 E, 1037 E, 1056 E, 1057 E, and six credits of Mathematics electives at the upper-year level. Other combinations may be acceptable; please consult the department for further information.

Other

Other continuations may be possible. Students who acquire credits through correspondence or credit transfer may be able to designate continuations in other science disciplines, such as Astronomy or Physics. However, Algoma U offers courses in these areas only at the first year level, and these are normally used to complete the elective science requirements of the degree.

SCIENCE AND RELATED COURSES AVAILABLE AT ALGOMA UNIVERSITY

Please consult the separate subject sections for course descriptions, prerequisites, and other information about individual courses.

BIOL 1000 E	Canadian Environmental Biology	COSC 1702 E	Computer Applications II
BIOL 1506 E	Biology I	COSC 2006 E	Data Structures I
BIOL 1507 E	Biology II	COSC 2007 E	Data Structures II
BIOL 2105 E	Human Anatomy and Physiology	COSC 2036 E	Computer Game Design I
BIOL 2126 E	Cell Biology	COSC 2406 E	Machine Structures
BIOL 2215 E	Environmental Ethics	COSC 2831 E	Computer Software for the Sciences
BIOL 2345 E	Bioethic: Human Life Issues	COSC 2306 E	The UNIX (TM) Operating System
BIOL 2347 E	Diversity of Prokaryotes, Fungi, and Lower Plants	COSC 2307 E	Database Programming
BIOL 2356 E	Principles of Ecology	COSC 2936 E	Programming in APL
BIOL 2606 E	Brain and Behaviour	COSC 2946 E	Object Oriented Programming using Java
BIOL 2706 E	Comparative Vertebrate Anatomy	COSC 2947 E	Programming Using C++
BIOL 2716 E	Introduction to Invertebrates	COSC 2956 E	Internet Tools
BIOL 2727 E	Introduction to Vertebrates	COSC 2976 E	Mathematical Computation using Maple
BIOL 2757 E	Biology of Human Sex	COSC 3036 E	Computer Game Design II
BIOL 2996 E	Scientific Method & Analysis	COSC 3106 E	Theory of Computing
BIOL 3006 E	Evolutionary Biology	COSC 3127 E	Programming Languages
BIOL 3017 E	Genetics	COSC 3136 E	Non-procedural Programming
BIOL 3025 E	Microbiology	COSC 3406 E	Computer Organization
BIOL 3115 E	Biogeography	COSC 3407 E	Operating Systems I
BIOL 3306 E	Vascular Plant Systematics	COSC 3416 E	Numerical Methods I
BIOL 3317 E	Plant Ecophysiology	COSC 3426 E	Digital Design
BIOL 3327 E	Experimental Methods in Biology	COSC 3706 E	Directed Studies I
BIOL 3336 E	Plant Ecology	COSC 3707 E	Techniques of Systems Analysis
BIOL 3346 E	Ethnobotany	COSC 4036 E	Computer Game Artificial Intelligence
BIOL 3506 E	Neuropharmacology	COSC 4086 E	Fourth Year Project
BIOL 3706 E	General Entomology	COSC 4106 E	Analysis of Algorithms
BIOL 3807 E	Applied Entomology	COSC 4107 E	Program Verification
BIOL 3397 E	Biodiversity and Conservation	COSC 4116 E	Language Processors
BIOL 4726 E	The Scientific Enlightenment	COSC 4117 E	Artificial Intelligence
CHMI 1006 E	General Chemistry I	COSC 4126 E	Computer Assisted Instruction
CHMI 1007 E	General Chemistry II	COSC 4226 E	Discrete-Event Simulation
CHMI 1041 E	Chemistry Concepts	COSC 4235 E	Thesis in Computer Science
CHMI 1202 E	Organic Chemistry and Biochemistry for the Health Sciences	COSC 4306 E	Computer Graphics
CHMI 2227 E	Biochemistry I	COSC 4406 E	Microcomputer Systems
CHMI 2426 E	Organic Chemistry I	COSC 4407 E	Operating Systems II
CHMI 2427 E	Organic Chemistry II	COSC 4416 E	Numerical Analysis I
CHMI 3226 E	Biochemistry II	COSC 4417 E	Computer Architecture
COSC 1046 E	Introduction to Computer Science I	COSC 4426 E	Topics in Computer Science I
COSC 1047 E	Introduction to Computer Science II	COSC 4427 E	Topics in Computer Science II
COSC 1701 E	Computer Applications I	COSC 4436 E	Computer Networks
		COSC 4506 E	Software Engineering
		COSC 4516 E	Symbolic Computation
		COSC 4606 E	Data Management Systems
		GEOG 2106 E	Geomorphology I
		GEOG 2107 E	Geomorphology II
		GEOL 1006 E	Introductory Geology I
		GEOL 1007 E	Introductory Geology II
		GEOL 1021 E	Understanding the Earth - The Planet and its Internal Processes

GEOL 1022 E	Understanding the Earth - The Earth's Crust: Rocks and Minerals
HIST 2245 E	History of Science and Technology
MATH 1036 E	Calculus I
MATH 1037 E	Calculus II
MATH 1056 E	Discrete Mathematics I
MATH 1057 E	Linear Algebra I
MATH 1911 E	Finite Mathematics
MATH 1912 E	Elementary Calculus
MATH 2037 E	Advanced Calculus
MATH 2056 E	Discrete Mathematics II
MATH 2057 E	Linear Algebra II
MATH 2066 E	Introduction to Differential Equations
MATH 2086 E	Geometry
MATH 2236 E	Probability and Statistics
MATH 2261 E	Statistics for Scientists
MATH 3036 E	Real Analysis I
MATH 3046 E	Complex Analysis
MATH 3056 E	Algebra I
MATH 3066 E	Differential Equations
MATH 3236 E	Probability and Statistics II
MATH 3416 E	Numerical Methods
MATH 3706 E	Directed Studies
PHIL 2216 E	Principles of Environmental Ethics
PHIL 2217 E	Topics in Environmental Ethics
PHIL 2346 E	Principles of Biomedical Ethics
PHIL 2347 E	Biomedical Ethics: Case Studies
PHIL 2505 E	Straight Thinking and Argument
PHIL 2916 E	Science and Philosophy
PHYS 1006 E	Introductory Physics I: Properties of Matter, Thermodynamics and Waves
PHYS 1007 E	Introductory Physics II: Geometrical Optics, Electricity and Modern Physics
PHYS 1906 E	General Astronomy I
PHYS 1907 E	General Astronomy II
PSYC 2606 E	Brain and Behaviour
PSYC 2617 E	Human Neuropsychology
PSYC 2906 E	Sensory Processes
PSYC 2907 E	Perception
PSYC 3106 E	Evolutionary Approaches to Behaviour
PSYC 3107 E	Behavioural Ecology
PSYC 3506 E	Neuropharmacology
PSYC 3507 E	Behavioural Neurobiology