

Course selection for Integrated Science



Integrated Science is a full-time, first-year program designed to prepare BSc students for undergraduate *science honours degrees*. The program emphasizes the connections among the different science disciplines, and provides students with research training and experience. Students take the core program as a cohort (max 80 students).

The core consists of two 9-credit-hour courses, Integrated Science I (SCIE 1506.09), and Integrated Science II (SCIE1507.09), as well as Ethics in Science (PHIL 1050.03). In the fall, students have lectures, laboratories and field trips in Biology, Psychology and Statistics, and receive training in research skills (experimental design, analysis, scientific writing). The winter term consists of lectures and laboratories in Biology, Psychology and Earth Sciences, and students conduct a 10-week independent research project in a Dalhousie or Dalhousie-affiliated research lab. Students present the results of their research at a conference-style event.

Integrated Science I and II are equivalent to two terms of Biology and Psychology, and one term of Earth Sciences and Statistics. Together with PHIL 1050 (Ethics in Science), the core fulfills the writing requirement for BSc students.

Students also register for several science co-requisite courses; these are taken along with other BSc students, typically in larger classes. Students take a full year of Chemistry (CHEM 1011.03/CHEM 1012.03) and a half year of Calculus (MATH 1000.03 or MATH 1215.03). Students have the option to enroll in a second term of Calculus (MATH 1010.03) and to take Physics (full year or half year). See co-requisite details below:

Fall term* co-requisites taken at the same time as Integrated Science I (SCIE 1506.09)

Required:

1. Ethics in Science (PHIL 1050.03)
2. Concepts in Chemistry: Structure and Reactivity (CHEM 1011.03)
3. One of 1) Differential and Integral Calculus I (MATH 1000.03) or 2) Life Sciences Calculus (MATH 1215.03)

Optional:

One of 1) Introduction to Physics (PHYC 1190.03) or Physics in and Around You I (PHYC 1310.03)

Winter term co-requisites taken at the same time as Integrated Science II (SCIE 1507.09)**

Required:

1. Concepts in Chemistry: Energy and Equilibrium (CHEM 1012.03)

Optional:

1. Differential and Integral Calculus II (MATH 1010.03).
 2. One of 1) Introduction to Physics (PHYC 1290.03) or 2) Physics in and Around You II (PHYC 1320.03)
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**In the fall term Integrated Science students take a course overload with 18-21 credits (21 credits if Physics is included). 15 credit hours is a full course load for regular BSc students. Students enrolling in 21 credits can expect a significantly heavier work load. Students planning to take only one term of calculus have the option of taking MATH 1000.03 in the winter to lighten their fall course load.*

***In the winter term, Integrated Science students may take an overload (18 credits), a regular full course load (15 credits,) or a lighter course load of 12 credits (if they choose not to take MATH or PHYSICS in winter).*

Choice of Math and Physics courses

Prior to selecting Math or Physics courses please consult the course descriptions in the Dalhousie Academic Calendar.

- PHYC 1190/1290 is designed for students in Physical Sciences and Engineering, and PHYC 1310/1320 is designed for students in Life Sciences.

- MATH 1000 should be taken by students interested in math or the physical sciences, while MATH 1215 is designed for life sciences students.
- One calculus course (MATH 1000.03 or MATH 1215.03) together with SCIE 1506.09 (Statistics) satisfies the full math requirement for BSc students. Students who do not require MATH 1010 for their programs have the option to take only one calculus course.

BSc Programs	First year Math courses	Physics courses
Actuarial Science	1000/1010	
Biochemistry & Molecular Biology	1000 (or 1215) 1010 (recommended)	
Biology	1215 (or 1000)	
Chemistry	1000/1010	1190/1290 or 1310/1320
Economics	1000/1010	
Earth Science	1000 (or 1215) 1010	1190/1290 or 1310/1320 *
Environmental Science	1215 (or 1000)	
Mathematics	1000/1010	
Marine Biology	1215 (or 1000)	1310/1320 (recommended)** or 1190/1290
Microbiology & Immunology	1215 (or 1000)	
Medical Sciences	1215	1310 (required) 1320 recommended
Neuroscience	1000 (or 1215)	
Ocean Sciences	1000/1010	1190/1290 or 1310/1320
Physics	1000/1010	1190/1290
Psychology	1215 (or 1000)	
Statistics	1000/1010	

* *Physics (6 credits) required for Honours but not majors in Earth Sciences. Physics 1190/1290 required for honours (1310/1320 also acceptable but not recommended). Physics 1190/1290 required for Professional Geoscientists (1310/1320 may not be recognized for PGeo registration)*

** *Marine Biology students who wish to include 2nd year courses in Ocean Sciences (other than OCEA 2000.06: The Blue Planet) in their programs should take PHYC 1310/1320 or equivalent.*

BSc degree requirements and the Integrated Science program

The Integrated Science program core satisfies the Writing requirement, the Social Science requirement, the Science requirement, and with MATH 1000 or 1215, the Math requirement for BSc students at Dalhousie. It satisfies *half* of the Humanities/Language requirement; another Humanities or Language course is needed before graduation.

Integrated Science is a unique program, housed in the Faculty of Science at Dalhousie University. For more details, including entrance requirements and admissions procedures, please see disp.science.dal.ca or contact us by phone (902) 494-2765 or e-mail: disp@dal.ca. To discuss your options and whether this program is right for you, please e-mail Dr. Gabrielle Tompkins at gabrielle.tompkins@dal.ca.