

X—Degree Programs, Bachelor of Computing (B.Comp.)

Students graduating from this program obtain a solid foundation in the theory and application of all aspects of computing and information science. Core subjects, combined with in-depth study in an area of application, give students the freedom to combine their interests in computing with other areas of study and application.

Guelph's Bachelor of Computing degree combines the necessary theoretical background with an applied focus to learning. Course projects which are based on real-world software development scenarios allow students to get the practical experience valued by today's high-tech employers. The focused study in a second discipline gives students the necessary background to effectively apply their knowledge.

For the degree of Bachelor of Computing the University of Guelph offers a specialized program requiring the equivalent of 8 semesters of successful full-time study ([honours program](#)) and a general program requiring the equivalent of 6 semesters of successful full-time study ([general program](#)). The honours program is also available as a Co-op degree.

A student may register in any of the 3 semesters (Summer, Fall, Winter). Since not all courses are offered in every semester and prerequisite dependencies must be observed, students are encouraged to consult the program counsellor for the B.Comp. program to plan an initial program of study or when considering modifications to the suggested schedule of studies list (below).

Program Information

B.Comp. Program Regulations

The [general program](#) is designed to provide a sound general education in computing.

The [honours program](#) is designed to provide depth of study and specialization beyond that available in the general program, while at the same time ensuring a complementary background in an area of application.

1. Requirements for a General Degree

To graduate from a general program a student must:

- earn 15.00 credits. These must include courses that fulfill the distribution requirements of the General Degree (see below). At least 4.00 credits must be at the 3000 level or above. Not more than 6.00 credits at the introductory (1000) level may be counted towards the 15.00 credit requirement.
- no more than 11.00 credits in any one subject or discipline, as indicated by the course prefix code, can be counted towards a general degree.
- successfully complete the following credits:

CIS*1650	[0.50]	Programming I
CIS*1900	[0.50]	Discrete Structures in Computer Science
CIS*2030	[0.50]	Structure and Application of Microcomputers
CIS*2420	[0.50]	Data Structures
CIS*2450	[0.50]	Software Systems Development and Integration
CIS*2650	[0.50]	Programming II
CIS*3110	[0.50]	Operating Systems
CIS*3430	[0.50]	System Analysis and Design in Applications
CIS*3530	[0.50]	Data Base Systems and Concepts
1.00 additional C.I.S. credits at the 2000 level or higher		
One of:		
MATH*1080	[0.50]	Elements of Calculus I
MATH*1200	[0.50]	Calculus I
One of:		
STAT*2040	[0.50]	Statistics I
STAT*2100	[0.50]	Introductory Probability and Statistics

2. Requirements for an Honours Degree

To graduate from an honours program a student must:

- successfully complete 20.00 credits. These must include the 11.50 credits that fulfill the Computing Core Requirements (below), a minimum of 4.00 credits in an Area of Application (below) and an additional 4.50 credits as free electives. Not more than 6.00 credits from courses at the introductory (1000) level may be counted towards the 20.00 credit requirement.
The core requires 5.50 credits at the 3000 level or above and 2.00 credits at the 4000 level, while the area of application requires an additional 1.00 credits at the 3000 level or above. The Area of Application is a graduation requirement only, and is not declared.
- complete the following Computing Core Requirements:

CIS*1650	[0.50]	Programming I
CIS*1900	[0.50]	Discrete Structures in Computer Science
CIS*2030	[0.50]	Structure and Application of Microcomputers
CIS*2420	[0.50]	Data Structures

CIS*2450	[0.50]	Software Systems Development and Integration
CIS*2650	[0.50]	Programming II
CIS*3110	[0.50]	Operating Systems
CIS*3200	[0.50]	Software Engineering
CIS*3430	[0.50]	System Analysis and Design in Applications
CIS*3490	[0.50]	The Analysis and Design of Computer Algorithms
CIS*3530	[0.50]	Data Base Systems and Concepts
CIS*3650	[0.50]	Compilers
CIS*4000	[0.50]	Applications of Computing Seminar
CIS*4600	[0.50]	Elements of Theory of Computation
0.50 additional C.I.S. credits at the 3000 level or above		
1.00 addition C.I.S. credits at the 4000 level or above		
MATH*1200	[0.50]	Calculus I
MATH*1210	[0.50]	Calculus II
MATH*2130	[0.50]	Numerical Methods
MATH*2150	[0.50]	Applied Matrix Algebra
One of:		
ENGL*1200	[0.50]	Reading the Contemporary World
ENGL*1410	[0.50]	Major English Writers
One of:		
STAT*2040	[0.50]	Statistics I
STAT*2100	[0.50]	Introductory Probability and Statistics

Note: MATH*3240 may be substituted for MATH*2130 but this course is offered only in fall semesters and additionally requires MATH*2200 as a pre-requisite.

- obtain a cumulative average at least 70% in CIS courses. Students who do not satisfy this requirement at graduation can still be granted a General degree.
- complete at least 4.00 credits in an area of application. These credits must be taken from a single department or school other than Computing and Information Science, with 1.00 credits at the 3000 level or above. Students wishing to pursue an interdisciplinary area should consult the B.Comp. program counsellor for approval for their subject area. It is also recommended that the area of application be a reduced-course version of a minor in another area. This would allow a student to upgrade to a minor with minimal additional courses (typically two) should they decide to do so. A list of pre-approved interdisciplinary areas is available in the B.Comp. program booklet and is also published on the Department of Computing and Information Science web-site (<http://www.cis.uoguelph.ca>). 1000 level courses in the Computing Core Requirements may not be counted towards the area of application ("double counted"). Students may also take a minor from another degree program. All courses in the area of application may be ("double") counted towards the Minor. Thus, a student doing a Minor will typically already have completed the requirements of an area of application. Students failing to meet the graduation requirements of the honours program may apply to graduate with a general degree if the requirements for the general degree are met. Students should note that the selection of an area of application is not required to graduate with a general degree.

3. Continuation of Study

Students are advised to consult the regulations for Continuation of Study which are outlined in detail in [Section VIII—Degree Regulations & Procedures](#) of this calendar.

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Schedule of Studies

Since many courses are offered in only one semester and course prerequisites place an ordering on courses, the following program of studies is designed so that students can schedule their courses over 8 semesters of study. Students deviating from this schedule must consult with their academic counsellor. This schedule assumes a Fall/Winter semester sequence.

Major (Honours Program)

School of Computing and Information Science, College of Physical and Engineering Science.

Semester 1

CIS*1650 [0.50] Programming I

MATH*1200 [0.50] Calculus I

1.00 credits in the Area of Application or elective

One of:

ENGL*1200 [0.50] Reading the Contemporary World

ENGL*1410 [0.50] Major English Writers

Semester 2

CIS*1900 [0.50] Discrete Structures in Computer Science

CIS*2650 [0.50] Programming II

MATH*1210 [0.50] Calculus II

1.00 credits in the Area of Application or elective

Note: COOP*1100 must be completed in the second academic semester (winter of year 1) by students in the Co-op program.

Semester 3

CIS*2030 [0.50] Structure and Application of Microcomputers

CIS*2420 [0.50] Data Structures

MATH*2150 [0.50] Applied Matrix Algebra

0.50 credits in the Area of Application or elective

One of (STAT*2100 is preferred):

STAT*2040 [0.50] Statistics I

STAT*2100 [0.50] Introductory Probability and Statistics

Note: CIS*2450 is substituted for CIS*2030 in Semester 3 by students in Stream A of the Co-op program.

Semester 4

CIS*2450 [0.50] Software Systems Development and Integration

CIS*3110 [0.50] Operating Systems

1.00 credits in the Area of Application or elective

One of:

MATH*2130 [0.50] Numerical Methods

0.50 elective

Note: MATH*2130 in Semester 4 or MATH*3240 in Semester 5 must be taken.

Note: CIS*2030 is substituted for CIS*2450 in Semester 4 by students in Stream A of the Co-op program.

Semester 5

CIS*3430 [0.50] System Analysis and Design in Applications

CIS*3530 [0.50] Data Base Systems and Concepts

CIS*3650 [0.50] Compilers

0.50 credits in the Area of Application or elective

One of:

MATH*3240 [0.50] Operations Research

0.50 elective

Note: MATH*2130 in Semester 4 or MATH*3240 in Semester 5 must be taken.

Semester 6

CIS*3200 [0.50] Software Engineering

CIS*3490 [0.50] The Analysis and Design of Computer Algorithms

1.50 credits in the Area of Application or elective

Semester 7

CIS*4600 [0.50] Elements of Theory of Computation

0.50 C.I.S. credits at the 3000 or 4000 level

0.50 C.I.S. credits at the 4000 level

1.00 courses in the Area of Application or elective

Semester 8

CIS*4000 [0.50] Applications of Computing Seminar

0.50 C.I.S. credits at the 4000 level

1.50 courses in the Area of Application or elective

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Major Co-op (Honours Program)

School of Computing and Information Science, College of Physical and Engineering Science.

The Honours Bachelor of Computing degree is also available as a Co-operative Education Program. Students may apply for this option at the time of University admission or completion of semester 2. Three co-op work terms are required in [Stream A](#) and four are required in [Stream B](#). Recommended terms as follows:

Work/Study Semesters

Stream A

	Year 1	Year 2	Year 3	Year 4
Fall	1	COOP*1000	5	7
Winter	2	4	COOP*3000	8
Summer	3	COOP*2000	6	

Stream B

	Year 1	Year 2	Year 3	Year 4	Year 5
Fall	1	3	5	COOP*3000	8
Winter	2	4	COOP*2000	7	
Summer	OFF	COOP*1000	6	COOP*4000	

Other sequences may not be viable for the co-op student. Please check with the CIS Co-op faculty advisor for semester planning. COOP*1000, COOP*2000, COOP*3000, and COOP*4000 represent the first, second, third, and fourth work terms respectively.

The course COOP*1100 must be successfully completed before the student may apply for a placement for the first work term (normally 2 semesters before the first work term).

Conditions for graduation are the same as the corresponding regular B.Comp. program. In addition, all work reports and performance evaluations must have a grade of satisfactory or better.