Computer Science (COMP) 200

Introduction to Computing and Information Systems (Revision 7)

Status:	Replaced with new revision, see the **course listing** for the current revision
Delivery mode:	**Individualized study online** with **eText**
Credits:	3
Area of study:	Science
Prerequisites:	None. Basic computer literacy and competence are required. Complete the steps to **Are You Ready to Start an SCIS Program or Course?**
Precluded:	None
Challenge:	COMP 200 has a challenge for credit option.
Faculty:	**Faculty of Science and Technology**

Notes:	Students who are not Computer Science majors, professionals, or who are not committed to a program of studies in CS should NOT take this course and should consider **COMP 210** or COMP 214 instead.

Overview

COMP 200 is a three-credit course designed to cover the fundamentals of information systems, and to serve as an introduction to, and prerequisite for, a program in computing and information systems (CIS). The course covers basic hardware concepts; the structure (or architecture) of computers; the software hierarchy, from systems software to application programs; as well as concepts and development of the field.

Students in this course will be expected to use a combination of locally installed and external electronic materials to develop skills needed for further study in the field. These skills include downloading, installing, and using specialized software tools, and setting the paths to allow programs to access their components and files. Because in COMP 200 is a preparatory course for further study in computer science, the level and difficulty of technical content is fairly high.

For students not majoring in computer science, COMP 200 may not be an appropriate choice. For students seeking a junior Science option or introductory, user-oriented computer course, COMP 210 or COMP 214 are recommended. (Check your program regulations and transfer credit agreements where appropriate).

Outline

COMP 200 consists of the following six units:

Unit One — Foundations of Computer Science

- Section 1: An Introduction to Computer Science

- Section 2: Algorithm Discovery and Design
- Section 3: The Efficiency of Algorithms

Unit Two — Hardware

- Section 1: Binary Numbers, Boolean Logic, and Gates
- Section 2: Computer Systems Organization

Unit Three — The Virtual Machine

- Section 1: System Software and Virtual Machines
- Section 2: Computer Networks, the Internet, and the World Wide Web
- Section 3: Information Security

Unit Four — Software

- Section 1: Introduction to High Level Programming
- Section 2: The Tower of Babel
- Section 3: Compilers and Language Translation
- Section 4: Models of Computation

Unit Five — Applications

- Section 1: Simulation and Modeling
- Section 2: Electronic Commerce and Databases
- Section 3: Artificial Intelligence
- Section 4: Computer Graphics and Entertainment

Unit Six — Social Issues in Computing

- Section 1: Making Decisions about Computers, Information, and Society

Learning outcomes

Upon successful completion of this course, you should be able to

- identify the features of the essential units in computer organization, including peripheral or auxiliary devices.

- explain the roles and functional structure of the operating systems, virtual machines, and network computing.
- design the computational operations process of the algorithms in pseudocode.
- measure and analyze the efficiency of the algorithms.
- install a programming toolkit and debug software packages.
- explain the typical social issues and emerging technologies in computing.
- write the algorithms in Python.
- analyze a data-modeling problem and create a simple relational database.
- carry out a simple comparison analysis of the basic computer applications in computational modeling, artificial intelligence, or e-commerce.

Evaluation

To **receive credit** for COMP 200, you must achieve a course composite grade of at least **D (50 percent)** , including an average grade 50 percent on the course projects, and at least 50 percent on the final examination. The weighting of the composite grade is as follows:

Activity	**Weight**
Quiz 1	2%
Assignment 1	3%
Quiz 2	2%
Assignment 2	3%
Quiz 3	2%
Assignment 3	3%

Activity	Weight
Quiz 4	2%
Assignment 4	3%
Quiz 5	2%
Assignment 5	3%
Quiz 6	2%
Assignment 6	3%
Project 1	10%
Project 2	10%
Project 3	10%
Conference Participation	10%
Final Exam	30%
Total	**100%**

The **final examination** for this course must be requested in advance and written under the supervision of an AU-approved exam invigilator. Invigilators include either ProctorU or an approved in-person invigilation centre that can accommodate online exams. Students are responsible for payment of any invigilation fees. Information on exam request deadlines, invigilators, and other exam-related questions, can be found at the **Exams and grades** section of the Calendar.

To learn more about assignments and examinations, please refer to Athabasca University's **online Calendar** .

Materials

Schneider, G. Michael & Gersting, Judith L. (2013). *Invitation to Computer Science* (6 th Ed.). Boston, MA: Nelson Education. (eText)

eText

Registration in this course includes an electronic textbook. For more information on **electronic textbooks**, please refer to our **eText Initiative site**.

The remaining learning materials are distributed in electronic format. At this time, those materials include:

- Computer Science 200 Study Guide.
- Detailed descriptions of the requirements for the individual quizzes and assignments.
- A course evaluation form.
- selected online resources.
- Additional supporting materials of interest to students of COMP 200 may occasionally be made available electronically.
- MS-Access may also be used in Comp 200, but is not required. A free option to download MS-Access is included in the online course materials, or the database design project may be done without using a database management program.

Challenge for credit

Overview

The challenge for credit process allows you to demonstrate that you have acquired a command of the general subject matter, knowledge, intellectual and/or other skills that would normally be found in a university-level course.

Full information about **challenge for credit** can be found in the Undergraduate Calendar.

Evaluation

To **receive credit** for the COMP 200 challenge registration, you must achieve a grade of at least **D (50 percent)** on the examination and D (50 percent) on the project.

Activity	Weight
Project	50%
Exam	50%
Total	**100%**

Challenge for credit course registration form

Important links

- Academic advising
- Program planning
- Request assistance
- Support services

Athabasca University reserves the right to amend course outlines occasionally and without notice. Courses offered by other delivery methods may vary from their individualized study counterparts.

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View **previous revision**