



Ontario Tech University
Faculty of Engineering and Applied Science
Dean's Office

Course Outline

ENGR 1200U

Introduction to Programming for Engineers

Winter 2020

Offering Approval:

Approved

Course Description:

Introduction to the anatomy of a computer: CPU, memory, machine cycle, input and output devices, data representation; fundamental programming concepts: flowcharting, algorithm design, use of procedures, program control flow, arrays and vectors, arithmetic and logic operations, input and output, data declaration; programming in C++.

Major Topics:

- Introduction to Computers & Data Representation
- Introduction to C++ Programming
- Control Structures
- Working with Data Files
- Modular Programming with Functions
- Arrays & Vectors
- Pointers

Graduate Attributes:

The graduate attributes developed and required by the Canadian Engineering Accreditation Board's Accreditation Criteria and Procedures are listed below, with those covered in the course to some degree (introduced, developed, applied). More details

about the accreditation of engineering programs and graduate attributes can be found here: <http://www.engineering.uoit.ca/undergraduate/ceab-accredited-programs-and-admissions>

Attributes	Covered in this Course
Knowledge base	✓
Problem analysis	✓
Investigation	✓
Design	✓
Use of engineering tools	✓
Individual and team work	✓
Communication skills	✗
Professionalism	✗
Impact of engineering on society and the environment	✗
Ethics and equity	✗
Economics and project management	✗
Life-long learning	✓

Course Content Breakdown

Math	Basic Science	Complementary Studies	Engineering Science	Engineering Design
0%	0%	0%	100%	0%

Course Outcomes:

Students who successfully complete this course will have reliably demonstrated an understanding of the following areas:

- Describe how the various hardware devices and software programs interact to perform the basic functions of a PC
- Explain how application programs manipulate data to produce the desired results
- Formulate problems for solution by a computer, such as flowcharts, and selection of application programs
- Describe the main characteristics and benefits of structured programming
- Write, debug and test programs in C++ to achieve specified outcomes

Instructors

Instructor:	Email:	Office:	Phone:	Office Hours:
Dr. Anwar Abdalbari	anwar.abdalbari@uoit.ca	SIRC3386	9057218686 Ext. 7377	Fridays 4:00 pm to 5:00 pm
Instructor:	Email:	Office:	Phone:	Office Hours:
Dr. Khalid Elgazzar	Khalid.Elgaazar@uoit.ca	SIRC 3384	9057218686 Ext. 7365	Tuesdays 12:30 pm - 01:30 pm

Teaching Assistants

TA Name:

Check Blackboard for the list of TAs and their contact information.

Required Course Text and Other Materials:

- Engineering Problem Solving with C++, 4th Edition by Delores M. Etter, Jeanine A. Ingber. Pearson, 2017.

Reference Books and Information Sources:

- Lecture slides and additional material will be posted on Blackboard.

Course Organization and Delivery Mode:

Week	Topic
W1: Jan 6	Introduction to Computing and Programming
W2: Jan 13	Simple C++ Programs
W3: Jan 20	Simple C++ Programs (continued)
W4: Jan 27	Control Structures: Selection
W5: Feb 3	Control Structures: Repetition
W6: Feb 10	Working with Data Files
Feb 15	Working with Data Files (continued)
W7: Feb 17	Midterm Break
W8: Feb 24	Midterm Test (Time TBA)
W9: Mar 2	Modular Programming with Functions
W10: Mar 9	Functions (continued)
W11: Mar 16	One-Dimensional Arrays
W12: Mar 23	Two-Dimensional Arrays and Pointers
W13: Mar 30	Pointers & Review

Scheduled Regular Class Meeting Times:

Section 70607 (Dr. Anwar Abdalbari):

Wednesday and Friday, 5:10 pm - 6:30 pm (SIRC2060)

Section 70041 (Dr. Khalid Elgazzar):

Tuesday and Thursday, 11:10 am - 12:30 pm (SIRC2060)

Section 71610 (Dr. Khalid Elgazzar):

Tuesday and Friday, 12:40 pm - 2:00 pm (UA1350)

Final Grade Breakdown:

- **In-Class Quizzes:** 15% (best 9 quizzes will be counted, equal weighting)
- **Midterm Test:** 30% (**Sat., Feb. 15**)
- **In-Tutorial exercises:** 10%
- **Final Exam:** 45% (to be scheduled by the university during the final exam period)

Note (1): No makeup quizzes or tests will be offered no matter what is the reason.

Note (2): You must pass the final exam to pass the course.

Note (3): The instructors reserve the right to use electronic means to detect and help prevent plagiarism. Students agree that by taking this course that all assessment items are subject to submission for textual similarity review to online (or manual) services for detecting any form of plagiarism.

Note (4): Quizzes must be done in class using the lockdown browser. Students should check the IT department for the correct version of the lockdown browser and a network patch cable.

Midterms

Midterm Date:

Midterm Location:

Saturday, February 29, 2020 - 03:30 to 06:30 TBA

Tutorials:

Please check mycampus for your tutorial section timing. The tutorials will be facilitated by Teaching Assistants (TAs) and will include important hands-on training. There are 10 marks assigned for Tutorial activities, students are highly encouraged to

attend the tutorial section they are officially registered in and complete the assigned activities and practice programming -- **because learning to program is a lot like learning how to swim, which cannot be learned simply by reading.**

Other Course Information:

Problem Sets: This course has no take-home assignments that will need to be submitted or graded, however, problem sets and programming for practice will be posted on Blackboard. Students should attempt all of them but do not need to submit solutions for grading. Sample solutions will be posted on Blackboard the week after the practice assignments are released.

Medical Certificates and Deferred Exams:

Medical statements and academic consideration forms for any missed student work worth 25% or less (not including midterms or tests) will be submitted directly to the course instructor. This includes missed quizzes, assignments and labs.

Missed Midterms or Coursework Worth More than 25%

For any missed midterms or tests, regardless of weight, or coursework worth more than 25%, students will need to submit the UOIT Medical statement or academic consideration form to the FEAS Advising Office following the form guidelines.

Guidelines for Medical Statements

Medical statements cover any missed work due to a medical reason. The student must:

- See a medical doctor within 24 hours of the missed work
- Submit the form to the correct individual within 3 working days

Guidelines for Academic Consideration Forms

Academic consideration forms cover any missed work for non-academic grounds, for example, religious observations, court appearance, personal/family emergency, varsity events. The student must provide supporting documentation if deemed necessary.

Should the medical certificate proven to be invalid due to any kind of action by the student, such student's behaviour will be considered as a major misconduct and respective disciplinary actions will be commenced.

Failure to comply with the above will result in a mark of 0 for the exam.

Accessibility:

Students with disabilities may request to be considered for formal academic accommodation in accordance with the Ontario Human Rights Code. Students seeking accommodation must make their requests through the Centre for Students with Disabilities in a timely manner, and provide relevant and recent documentation to verify the effect of their disability and to allow the University to determine appropriate accommodations.

Accommodation decisions will be made in accordance with the Ontario Human Rights Code. Accommodations will be consistent with and supportive of the essential requirements of courses and programs, and provided in a way that respects the dignity of students with disabilities and encourages integration and equality of opportunity. Reasonable academic accommodation may require instructors to exercise creativity and flexibility in responding to the needs of students with disabilities while maintaining academic integrity.

Academic Integrity and Conduct:

Students and faculty at Ontario Tech University share an important responsibility to maintain the integrity of the teaching and learning relationship. This relationship is characterized by honesty, fairness and mutual respect for the aim and principles of the pursuit of education. Academic misconduct impedes the activities of the university community and is punishable by appropriate disciplinary action.

Students are expected to be familiar with Ontario Tech University's regulations on Academic Conduct (Section 5.15 of the Academic Calendar) which sets out the kinds of actions that constitute academic misconduct, including plagiarism, copying or allowing one's own work to be copied, use of unauthorized aids in examinations and tests, submitting work prepared in collaboration with another student when such collaboration has not been authorized, and other academic offences. The regulations also describe the procedures for dealing with allegations, and the sanctions for any finding of academic misconduct, which can range from a written reprimand to permanent expulsion from the university. A lack of familiarity with Ontario Tech University's regulations on academic conduct does not constitute a defense against its application.

Further information about academic misconduct can be found in the Academic Integrity link on your laptop.

Turnitin:

Ontario Tech University and faculty members reserve the right to use electronic means to detect and help prevent plagiarism. Students agree that by taking this course all assignments are subject to submission for textual similarity review by Turnitin.com. Assignments submitted to Turnitin.com will be included as source documents in Turnitin.com's restricted access database solely for the purpose of detecting plagiarism in such documents for five academic years. The instructor may require students to submit their assignments electronically to Turnitin.com or the instructor may submit questionable text on behalf of a student. The terms that apply to Ontario Tech University's use of the Turnitin.com service are described on the Turnitin.com website.

Students who do not wish to have their work submitted to Turnitin.com must provide with their assignment at the time of submission to the instructor a signed Turnitin.com Assignment Cover sheet:

<https://shared.uoit.ca/shared/departement/academic-integrity/Forms/assignment-cover-sheet.pdf>

Further information about Turnitin can be found on the Academic Integrity link on your laptop.

Student Sexual Violence Policy

Ontario Tech University is committed to the prevention of sexual violence in all its forms. For any Ontario Tech University student who has experienced Sexual Violence, Ontario Tech University can help. Ontario Tech University will make accommodations to cater to the diverse backgrounds, cultures, and identities of students when dealing with individual cases. If you think you have been subjected to or witnessed sexual violence:

- Reach out to a Support Worker, who are specially trained individuals authorized to receive confidential disclosures about incidents of sexual violence. Support Workers can offer help and resolutions options which can include safety plans,

accommodations, mental health support, and more. To make an appointment with a Support Worker, call 905.721.3392 or email supportworker@uoit.ca

- Learn more about your options at: <https://studentlife.ontariotechu.ca/sexualviolence/>

Freedom of Information and Protection of Information Act:

The following is an important notice regarding the process for submitting course assignments, quizzes and other evaluative material in your courses.

As you may know, Ontario Tech University is governed by the Freedom of Information and Protection of Information Act (“FIPPA”). In addition to providing a mechanism for requesting records held by the university, this legislation also requires that Ontario Tech University not disclose the personal information of its students without their consent.

FIPPA’s definition of “personal information” includes, among other things, documents that contain both your name and your Banner ID. For example, this could include graded test papers or assignments. To ensure that your rights to privacy are protected, Ontario Tech University encourages you to use only your Banner ID on assignments or test papers being submitted for grading. This policy is intended to prevent the inadvertent disclosure of your information where graded papers are returned to groups of students at the same time. If you still wish to write both your name and your Banner ID on your tests and assignments, please be advised that Ontario Tech University will interpret this as an implied consent to the disclosure of your personal information in the normal course of returning graded materials to students.

If you have any questions or concerns relating to the new policy or the issue of implied consent addressed above, please contact the Ontario Tech University privacy office.