COIS-1020H-R: Programming for Computer Science 2024FA - Peterborough Campus

Instructor:

Instructor: Richard Hurley

Email Address: rhurley@trentu.ca

Phone Number: 705-748-1011 x7542

Office: OC 102.3

Office Hours: See BlackBoard

Meeting Times:

The course involves a 2-hour lecture, a 1-hour lecture, a 1-hour remote workshop, and a 1-hour lab weekly. Attendance is highly recommended but not required.

The 2-hour lecture is Mondays from 2-4pm (ENW 114)

The 1-hour lecture is Wednesdays from 9-10am (ENW 114)

The 1-hour workshop is Thursdays from 4-5pm (Zoom)

The lab periods are (1) Fridays from 11am-12pm, (2) Fridays from 12-1pm, (3) Tuesdays from 7-8pm, (4) Tuesdays from 6-7pm, (5) Tuesdays from 5-6pm, (6) Fridays from 10-11am, and (7) Fridays from 9-10am . All labs will be held in OC202.

Please see the academic timetable for updated times and locations. http://www.trentu.ca/timetable/

Co-instructors and Teaching Assistants:

Lab Demonstrator: Jamie Mitchell, Trevor Hill

Email: jamiemitchell@trentu.ca; trhill@trentu.ca;

SC 113; Lab Hours: See Blackboard

Lab Assistants: TBA

Department:

Academic Administrative Assistant: Hannah McSweeney

Email Address: cois@trentu.ca

Phone Number: 7802

Office: OC 102.6

Description:

Programming for computing systems requires a solid foundation in the software development process, including algorithmic design, abstraction, implementation, testing and documentation. Core topics include sequencing, selection, iteration, simple data types, expressions and arrays, as well as the object-oriented notions of classes, methods, inheritance and polymorphism. **Pre- or co-requisite:** COIS 1010H or PHYS 1001H or MATH 1110H (or 1100Y). Students without prior programming experience should take COIS 1010H as a prerequisite.

Learning Outcomes:

By the end of the course, students should:

1. have a solid grasp of the concepts of object-oriented programming
2. be familiar with creating programs in C#
3. understand repetition and selection structures
4. have a solid foundation in the various types of parameter passing mechanisms
5. understand the concept of an array and how to use them in C#
6. recognize various searching and sorting techniques,
7. have the ability to design and implement algorithms to solve small- to medium-sized programming problems
8. be able to utilize debugging tools provided by the program development software interface
9. understand classes, objects, constructors, properties, and inheritance.

Texts:

Recommend Texts:

- Farrell, Joyce. *Microsoft Visual C# 2012: an introduction to object-oriented programming*, 5th edition, or
- Farrell, Joyce. *Microsoft Visual C# 2015: an introduction to object-oriented programming*, 6th edition, or
- Farrell, Joyce. *Microsoft Visual C# 2017: an introduction to object-oriented programming*, 7th edition

Other references:

- Chegwidden, James and Tony Gaddis. *Starting out with C#.*
- Deitel, Harvey M. et al. *C#: how to program.*
- Gittleman, Arthur. *Computing with C# and the .NET framework.*

Assessments, Assignments and Tests:

Labs:

There are 12 weekly labs. Each lab should take up to 1 hour to complete. Students are assigned to one of seven lab periods based on registration (you may only attend the lab session to which you registered). The labs commence Week 1 (Thursday, Sept. 5th). Labs involve the practical application of concepts covered in class. Attending lab sessions permit students to ask questions and get help. Students who complete the lab during the lab session will demonstrate their work to receive a mark and are not required to hand anything in (although Blackboard may warn about an upcoming submission since there is a Dropbox even if nothing needs to be submitted).

Labs are marked out of 5 based on both completeness and correctness.

Students unable to attend a lab will be subject to a 20% attendance penalty but can still complete the lab on their own (and submit via Blackboard) for the remaining marks. Students who attend lab but don't finish in time to demonstrate will be given their attendance mark (1/5) at the end of the lab period, and their mark will be upgraded once their blackboard submission has been marked. With the exception of Lab 1 (Special Case: see below), the due date for students who are submit lab write-ups is three days after your registered lab period (by 11:59pm). Thus, Friday labs are due by 11:59pm on Mondays and Tuesday labs are due by 11:59pm on Fridays. No extensions will be granted for labs.

Only 10 of the 12 labs will be counted when calculating final grades to compensate for missed or poorly completed labs.

Students should check Blackboard to ensure they have their grade before they leave the room.

Lab 1 is very simple: the purpose of it is to have students install Visual Studio on their devices (if they plan to) and to get use to the software. We have students who for no fault of their own, register late in the course. As a result, irrespective of the lab section, we will accept submissions of Lab 1 up until Monday, September 16th at 11:59pm.

Assignments:

Based on the theoretical foundations arising from the lectures as well as the practical foundations from the labs, the five assignments provide students with the opportunity to develop programming solutions for original problems. The programming assignments are to be done individually and give the students exposure to the constructs of C# and help to develop their problem-solving skills. Each assignment consists of one medium-sized programming problem.

Midterm:

The midterm test will be online, 55 minutes in length, and consist of multiple choice, true/false, and problem-solving questions -- all selected to examine the key aspects of

the curriculum. Students will be permitted to refer to their textbook and course notes during the tests but not permitted to use a C# compiler.

Final examination:

The exam will be in-person, 2.5 hours long and contain material spanning the entire course. It will contain a mixture of theoretical and practical questions -- both short-answer and programming problems. As with the midterm, students will be permitted to refer to their textbook and course notes (not permitted to use a C# compiler).

Grading:

20% - Best 10 of 12 Labs

Lab 1 is due Monday, Sept. 16 at 11:59pm. Labs 2-12 are due 3 days after the lab period. **No late labs will be accepted.**

30% - 5 Assignments

due Sept. 25th, Oct. 9th, Nov. 1st, Nov. 13th, Dec. 4th

10% - Midterm

Wednesday, Oct. 30th (during lecture time)

40% - Final Exam

TBD, during exam period

Grade Total by Withdrawal Date:

Labs 1-6, Assignment 1, Assignment 2, Midterm = 34%

Schedule:

Week 1: Introduction [Ch. 1]

Week 2: Data types, operators and expressions [Ch. 2]

Week 3: Conditionals / Repetition [Ch. 4, 5] */ Assignment 1*

Week 4: Methods [Ch. 7, 8]

Week 5: Methods [Ch. 7, 8] */ Assignment 2*

Week 6: Methods [Ch. 7, 8], Arrays [Ch. 6]

Reading Week - no class

Week 7: Arrays [Ch. 6] */ Assignment 3 / Midterm*

Week 8: Classes and Objects [Ch. 9]

Week 9: Classes and Objects [Ch. 9] */ Assignment 4*

Week 10:Classes and Objects / Inheritance [Ch. 9, 10]

Week 11: Inheritance [Ch. 10]

Week 12: Exceptions [Ch. 11] */ Assignment 5*

Exam Period: *Final Exam*

Course Guidelines:

Blackboard Learning System will be used to post announcements, lecture notes, assignments, labs, and grades. There is also a Course Calendar that will have the due dates for the course deliverables. It is the student's responsibility to monitor the course Blackboard site and their Trent University email.

Completed labs and assignments are to be submitted electronically by **11:59pm** to the corresponding Blackboard Dropbox. A penalty of 10% per day will be applied to late assignments however, **NO late labs** will be accepted. After 5 days, late assignments will be worth 0.

All students are given one **late credit** they can use for any **ASSIGNMENT**. A late credit permits a student to hand in an assignment up to three days late (no excuse or documentation necessary). To use the late credit, a student must indicate *"late credit"* in Notes section of the corresponding assignment Dropbox. **Late credits can not be transferred to other students or used on labs.**

One last note: for assignments, students must submit their own independent program code and testing documentation. Students can assist each other but be careful not to share code (**do not copy, email or hand over your code to another student**). Students whose program code is too similar could be charged with a violation of Trent's Academic Integrity policy. Also, students may not use homework sites (such as Course Hero, Chegg, ChatGPT, etc). The purpose of the assignments is to develop program design and coding skills. Please be careful as we monitor the homework sites.

University Policies:

Academic Integrity

Academic dishonesty, which includes plagiarism and cheating, is an extremely serious academic offence and carries penalties varying from failure on an assignment to expulsion from the University. Definitions, penalties, and procedures for dealing with plagiarism and cheating are set out in Trent University's *Academic Integrity Policy*. You have a responsibility to educate yourself – unfamiliarity with the policy is not an excuse. You are strongly encouraged to visit Trent's Academic Integrity website to learn more: www.trentu.ca/academicintegrity.

Access to Instruction

It is Trent University's intent to create an inclusive learning environment. If a student has a disability and documentation from a regulated health care practitioner and feels that they may

need accommodations to succeed in a course, the student should contact the Student Accessibility Services Office (SAS) at the respective campus as soon as possible.

Sharing and Distribution of Course Content

Students in this class should be aware that classroom activities (lecture, seminars, labs, etc.) may be recorded for teaching and learning purposes. Any students with concerns about being recorded in a classroom context should speak with their professor. If a student shares or distributes course content in any way that breaches copyright legislation, privacy legislation, and/or this policy, the student will be subject to disciplinary actions under the relevant Academic Integrity Policy, the Charter of Student Rights & Responsibilities, or the Policy on the Protection of Personal Information, at a minimum, and may be subject to legal consequences that are outside of the responsibility of the university.

Student Absenteeism, Missed Tests and Examinations

Students are responsible for completing all course requirements, including attending classes and meeting assignment deadlines as specified on their syllabus.

Adjustments and deferrals to dates for participation, assignment submissions, tests, midterms and final examinations are not automatic. It is the student's responsibility to email their instructor immediately if they are unable to fulfill academic requirements.

Courses delivered remotely may involve student participation in scheduled (synchronous) classes via web-based platforms, such as Zoom. Students unable to participate (i.e., by video and/or audio) should email their instructors to request alternative arrangements for participation in these scheduled (synchronous) classes.

Students are required to be available for all tests, midterms and exams that are listed in their course syllabus and scheduled by their instructor or the Office of the Registrar. Depending on their program, the instructor or the chair/director may decide on alternative arrangements for exams and tests. Normally a doctor's note or supporting documentation is not required; however, when a student's success in the course or program is in jeopardy as determined by the instructor or chair/director, documentation may be requested.

Specific SAS accommodations can be implemented for students registered with Student Accessibility Services (SAS), but it is the responsibility of the student to make these arrangements in advance as per SAS guidelines, and to discuss accommodations of due dates with their instructors.

Students can notify the Office of the Registrar of their wish to observe cultural or religious holidays during scheduled examination periods by the deadline set in the Academic Calendar. Personal travel plans are not acceptable reasons for missing tests or exams.

Print