

# CSC465H1 F

## Formal Methods in Software Design

### Fall 2024 Syllabus

#### Course Meetings

##### CSC465H1 F

Section	Day & Time	Delivery Mode & Location
LEC0101	Thursday, 3:00 PM - 5:00 PM	Hybrid: UC 179

Refer to ACORN for the most up-to-date information about the location of the course meetings.

See course website [hehner.ca/465-2104](http://hehner.ca/465-2104).

#### Course Contacts

**Instructor:** Eric Hehner

**Email:** [hehner@cs.utoronto.ca](mailto:hehner@cs.utoronto.ca)

**Office Hours and Location:** By appointment only.

#### Course Overview

Using mathematics to write error-free programs. Proving each refinement; identifying errors as they are made. Program development to meet specifications; modifications that preserve correctness. Useful for all programming; essential for programs that lives depend on. Basic logic, formal specifications, refinement. Conditional, sequential, parallel, interaction, probabilistic programming, and functional programming.

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#### Course Learning Outcomes

By the end of the course, students will be able to use formal methods to design error-free software.

**Prerequisites:** CSC236H1/ CSC240H1/ MAT309H1/ CSC236H5/ CSCB36H3

**Corequisites:** None

**Exclusions:** NOTE: Students not enrolled in the Computer Science Major or Specialist program at A&S, UTM, or UTSC, or the Data Science Specialist at A&S, are limited to a maximum of 1.5 credits in 300-/400-level CSC/ECE courses.

**Recommended Preparation:** None

Credit Value: 0.5

## Marking Scheme

Assessment	Percent	Details	Due Date
Test 0	20%		2024-09-26
Test 1	20%		2024-10-17
Test 2	20%		2024-11-14
8 checkpoints	4%		2024-09-12,2024-09-19,2024-10-03,2024-10-10,2024-10-24,2024-11-07,2024-11-21,2024-11-28
In-Person Final Exam	36%		Final Exam Period

### Late Assessment Submissions Policy

If a student misses a test for a good reason, the marks will be redistributed so that the student does not suffer any penalty.

## Policies & Statements

### Attendance

This item is listed here to remind you that you may wish to include your attendance policy, if you have one, in your syllabus. For more information, see Section 3.1 in the [A&S Academic Handbook \(https://www.artsci.utoronto.ca/faculty-staff/teaching/academic-handbook#CourseClassroomProcedures\)](https://www.artsci.utoronto.ca/faculty-staff/teaching/academic-handbook#CourseClassroomProcedures).

### Attendance not required for lectures and help sessions.

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### Assignment Submission Method

This item is listed here to remind you that if you have specific directives for your class about how they should submit assignments (e.g. electronically, in person, at the departmental office), you should spell those out clearly in your syllabus. Many departments have a protocol for students submitting assignments at the departmental office, and you should take those into account.

### **Checkpoints are submitted by email to the instructor.**

This item is listed here to remind you that if you have specific directives for your class about how they should submit assignments (e.g. electronically, in person, at the departmental office), you should spell those out clearly in your syllabus. Many departments have a protocol for students submitting assignments at the departmental office, and you should take those into account.

### **Online Communication**

Instructors are strongly advised to require students use their mail.utoronto.ca email addresses for all course-related communications, and to flag for students that they are expected to check this address regularly. University of Toronto email accounts are more secure, and are also governed by the institution's codes of conduct, meaning that the University has recourse to address any inappropriate communications (e.g., racist, aggressive, threatening, harassing, etc.) between students and other students as well as with the instructor. Also, if a student claims to have emailed you an assignment, this can be verified by IT staff if needed. For these reasons, instructors can state that they will only respond to emails received from a mail.utoronto.ca account. Note that Quercus has a built-in communication tool, called "Inbox". This is not the same as email. Instructors are advised to review its functions and limitations. If you prefer students to use email instead, you should clearly specify this expectation. You may also wish to remind students not to include attachments in replies to any Quercus system notifications they receive through email; messages with attachments included in replies to these system notification messages are not sent to the instructor.

### **Online Communication by email and Piazza.**

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### **Re-marking Policy - Timeline and Protocol**

This item is listed here to remind you that A&S policy on re-mark requests for term work specifies that students have two weeks from when the work was returned to make such a request. If you want to include a re-marking policy in your syllabus, please consult Section 4.13

in the [A&S Academic Handbook](https://www.artsci.utoronto.ca/faculty-staff/teaching/academic-handbook#AssignmentsAssessmentTermWork) on re-marking protocol (<https://www.artsci.utoronto.ca/faculty-staff/teaching/academic-handbook#AssignmentsAssessmentTermWork>).

### **See course webpage [hehner.ca/465-2104](https://www.hehner.ca/465-2104)**

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### **Course Materials, including lecture notes**

Course materials are provided for the exclusive use of enrolled students. These materials should not be reposted, shared, put in the public domain, or otherwise distributed without the explicit permission of the instructor. These materials belong to your instructor, the University, and/or other sources depending on the specific facts of each situation and are protected by copyright. Students violating these policies will be subject to disciplinary actions under the Code of Student Conduct.

### **All course materials are online at [hehner.ca/465-2104](https://www.hehner.ca/465-2104)**

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