

**DEPARTMENT OF MATHEMATICAL AND COMPUTATIONAL SCIENCES  
UNIVERSITY OF TORONTO MISSISSAUGA**

**CSC498H5S LEC0101  
Topics in Computer Science  
Course Outline - Winter 2020**

<b>Class Location &amp; Time</b>	Tue, 03:00 PM - 05:00 PM IB 385
<b>Instructor</b>	Vincent Maccio
<b>Office Location</b>	DH 3015
<b>Office Hours</b>	Tuesdays 1:00-3:00
<b>E-mail Address</b>	vincent.maccio@utoronto.ca
<b>Course Web Site</b>	<a href="http://vincentmaccio.com">vincentmaccio.com</a>

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### Course Description

Introduction to a topic of current interest in computer science intended for CSC majors and specialists. Content will vary from year to year.

*Prerequisite:* A minimum of 8.0 credits and P.I. (SCI E)

*Distribution Requirement:* SCI E

Students who lack a pre/co-requisite can be removed at any time unless they have received an explicit waiver from the department. The waiver form can be downloaded from [here](#).

### Detailed Course Description

Introduction to performance analysis and stochastic modelling. Covered topics will include, simulation, operational laws, continuous and discrete Markov chains, basic queueing models (M/M/1, M/M/c, M/G/1), Jackson networks, mean value analysis, implications of increasing and decreasing failure rates.

### Learning Outcomes

By completing this course students will have the ability to determine/develop appropriate models for real-world stochastic systems, be able analyse those models, i.e. derive meaningful system metrics, suggest ways to efficiently improve it, spot potential problematic assumptions, etc., and construct accurate simulations where analysis falls short.

### Textbooks and Other Materials

There is no required textbook for this course, however, I recommend:

Performance Modeling and Design of computer Systems: Queueing Theory in Action by Mor Harchol-Balter

### Assessment and Deadlines

Type	Description	Due Date	Weight
Assignment	Assignment 1	2020-01-21	7.5%
Assignment	Assignment 2	2020-02-11	7.5%
Assignment	Assignment 3	2020-03-17	7.5%
Assignment	Assignment 4	2020-04-21	7.5%
Term Test	Midterm	2020-03-03	20%
Final Exam		TBA	40%
Other	Better Testing Grade	On-going	10%
<b>Total</b>			<b>100%</b>

### More Details for Assessment and Deadlines

The 10% of the better testing grade will be allocated to either your midterm or exam (whichever has the higher grade).

## Penalties for Lateness

No assignments will be accepted late

## Procedures and Rules

### Missed Term Work

To request special consideration, bring supporting documentation to the instructor in person during office hours at least one week in advance.

In case of illness, bring a U of T medical certificate to the instructor within one week of the missed work. The certificate must specify the exact period during which you were unable to carry out your academic work.

### Missed Final Exam

Students who cannot write a final examination due to illness or other serious causes must file an [online petition](#) **within 72 hours of the missed examination**. Original supporting documentation must also be submitted to the Office of the Registrar **within 72 hours of the missed exam**. Late petitions will **NOT** be considered. If illness is cited as the reason for a deferred exam request, a U of T Verification of Student Illness or Injury Form must show that you were **examined and diagnosed at the time of illness and on the date of the exam, or by the day after at the latest**. Students must also record their absence on ACORN on the day of the missed exam or by the day after at the latest. Upon approval of a deferred exam request, a non-refundable fee of \$70 is required for each examination approved.

### Academic Integrity

Honesty and fairness are fundamental to the University of Toronto's mission. Plagiarism is a form of academic fraud and is treated very seriously. The work that you submit must be your own and cannot contain anyone else's work or ideas without proper attribution. You are expected to read the handout How not to plagiarize (<http://www.writing.utoronto.ca/advice/using-sources/how-not-to-plagiarize>) and to be familiar with the Code of behaviour on academic matters, which is linked from the UTM calendar under the link Codes and policies.

## Final Exam Information

Duration: 3 hours  
Aids Permitted: Non-Programmable Calculators  
1 page(s) of double-sided Letter (8-1/2 x 11) sheet

## Additional Information

N/A

Last Date to drop course from Academic Record and GPA is March 8, 2020.