

# Graph Theory

## MATH 3V03 - Winter 2018



### Objectives

This course offers a mathematical introduction to the theory of graphs. Students will learn basic terminology and results concerning graphs, proof techniques and algorithms involving graphs, and some open problems in graph theory.

### Topics

Topics will include graphs and digraphs, connectedness, Eulerian and Hamiltonian paths, cycles, trees, planarity, colouring, and matchings. Time permitting we will explore other topics such as infinite graphs and matroids.

### Instructor

<b>Name</b>	Federico Galetto
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<b>Location</b>	Hamilton Hall 407
<b>Office hours</b>	Monday 14:30 - 15:30, Wednesday 10:15 - 11:15 or by appointment

### Lectures

<b>Monday</b>	11:30 - 12:20, Hamilton Hall 102
<b>Wednesday</b>	11:30 - 12:20, Hamilton Hall 102
<b>Friday</b>	13:30 - 14:20, Hamilton Hall 102

### Textbook

Robin J. Wilson. *Introduction to Graph Theory*. 5th edition.  
Pearson, 2010. ISBN: 978-0-273-72889-4

### Calculators

Calculators are not allowed during tests and exams.

## Grading Scheme

Your grade will be determined according to the following scheme.

<b>Assignments</b>	30%
<b>Tests</b>	30%
<b>Final Exam</b>	40%

Your letter grade will be computed using the [Grade Point Values conversion table](#) as specified by the Office of the Registrar.

## Assignments

There will be seven written homework assignments. Most of the homework problems will be assigned from the textbook and, depending on the assignment, only a subset of problems may be graded. Proof problems will be graded based on correctness as well as the quality of the writing. The lowest mark of the seven homework assignments will be dropped.

Homework will (typically) be due on Fridays, with due dates announced in class and on the course website. **You are expected to submit assignments before class on the due date. Homework assignments that are late, scanned or not stapled will not be accepted.** Assignments must be delivered, based on your last name, to lockers 44 (A-L) or 45 (M-Z) located on the first floor of Hamilton Hall. Your submissions must reflect your own independent work on the assignments, and must adhere to the standards and practices described in the section on [Academic integrity](#). Please see [below](#) for using an MSAF on a homework assignment.

Other practice problems will be regularly assigned throughout the term. These problems will not be graded but working on them will greatly improve your understanding of the material and your chances of succeeding in this course.

## Tests and Final Exam

There will be two tests (tentative dates: Monday, February 12, and Friday, March 16) held during the lecture period (location will be announced). Topics covered will be announced in class and on the course website. Please see [below](#) for using an MSAF on a test.

There will be one cumulative final exam with an expected duration of 2.5 hours. Date and location of the final exam are determined by the Office of the Registrar, and will be announced in class and on the course website.

You are required to bring your student ID to all tests and exams.

## Relief for Missed Academic Term Work (MSAF)

The University recognizes that students periodically require relief from academic work for medical or other personal situations. Relief for missed academic work worth less than 25% of the final grade resulting from medical or personal situations lasting up to three calendar days can be obtained using the [McMaster Student Absence Form](#) (MSAF) on-line self-reporting tool. Please familiarize yourself with the relevant policies.

There is no need to contact your instructor when using an MSAF in this course. When using an MSAF on an assignment or test, your grade will be recorded as 'MSAF'. This recognizes that your MSAF has been received by your instructor. Please allow one week after submitting your MSAF for the grade to be recorded correctly. You are required to contact your instructor only in the event that your grade is not recorded as 'MSAF' within one week of your submission.

When using an MSAF on an assignment, the weight of the assignment will be transferred to the weight of the next test or exam. When using an MSAF on a test, the weight of the test will be transferred to the weight of the final exam.

## Accommodations

Students who require academic accommodation must contact Student Accessibility Services (SAS) to make arrangements with a Program Coordinator. Academic accommodations must be arranged for each term of study. Student Accessibility Services can be contacted by phone 905-525-9140, ext. 28652, or e-mail [sas@mcmaster.ca](mailto:sas@mcmaster.ca). For further information, consult McMaster University's Policy for [Academic Accommodation of Students with Disabilities](#).

## Academic Integrity

You are expected to exhibit honesty and use ethical behaviour in all aspects of the learning process. Academic credentials you earn are rooted in principles of honesty and academic integrity.

Academic dishonesty is to knowingly act or fail to act in a way that results or could result in unearned academic credit or advantage. This behaviour can result in serious consequences, e.g. the grade of zero on an assignment, loss of credit with a notation on the transcript (notation reads: "Grade of F assigned for academic dishonesty"), and/or suspension or expulsion from the university.

It is your responsibility to understand what constitutes academic dishonesty. For information on the various types of academic dishonesty please refer to the [Academic Integrity Policy](#).

The following illustrates only three forms of academic dishonesty:

1. Plagiarism, e.g. the submission of work that is not one's own or for which other credit has been obtained.
2. Improper collaboration in group work.
3. Copying or using unauthorized aids in tests and examinations.

## Important Message About Course Modifications

The instructor and university reserve the right to modify elements of the course during the term. The university may change the dates and deadlines for any or all courses in extreme circumstances. If either type of modification becomes necessary, reasonable notice and communication with the students will be given with explanation and the opportunity to comment on changes. It is the responsibility of the student to check their McMaster email and course websites weekly during the term and to note any changes.