Math 239 Introduction to Combinatorics
Fall 2012

Note: No printed material will be distributed in class. All information about the course will be posted on the Waterloo LEARN course page.

Sec.	Time	Room	Instructor	Office (Phone)	email 'at'uwaterloo.ca
001	10:30MWF	STJ 3014	J. Dietrich	MC 5164 (ext. 36673)	jedietrich
002	12:30MWF	MC 4021	A. Childs	MC 4031 (ext. 33481)	amchilds
003	1:30MWF	MC 4021	P. Haxell	MC 6063 (ext. 35595)	pehaxell

Teaching Assistants: Contact details for the teaching assistants will be posted on the course web page.

Textbook: *Introduction to Combinatorics: Course Notes for Math 239,* printed copies available from Campus Copy, MC2018.

Outline: The first portion (five weeks) of the course is Combinatorial Analysis. We introduce generating functions and apply them to enumerate compositions of an integer and $\{0, 1\}$-strings. We then consider the solution to recurrence equations.

The second portion (seven weeks) of the course is Graph Theory. We introduce graphs, isomorphisms, paths, cycles, trees, and connectivity, and continue with planarity, colouring, bipartite matching, and applications.

The material we will cover mostly corresponds to Sections 1.1–1.6, 2.1, 2.3–2.8, 3.1–3.4, 4.1–4.4, 4.6, 4.8–4.9, 5.1–5.5, 7.1–7.7, 8.1–8.4, 8.6 of the text. If time allows, additional material might be covered.

Tutorial Centre: Graduate student Teaching Assistants will be in the Tutorial Centre, MC4067, (certain hours, TBA) beginning the week of September 17.

Assignments: There will be nine assignments. They will be due on Fridays by 10am in the drop boxes opposite MC 4067 (or at St. Jerome's, for Section 1). The assignments and solutions will be posted on the course web page. The first assignment will be available at the beginning of term, and will be due Friday, September 21. There will be a tenth practice assignment, which will not be submitted for marking. Students may discuss among themselves their ideas for solving the assignment problems, but each student must write up his or her assignment solutions independently.

Late assignments will not be accepted.

Assignment Schedule:
The nine assignments to be handed in will be due September 21, 28; October 5, 12, 19, 26; November 2, 16, 23.

Tutorials: Graduate student Teaching Assistants will be responsible for the main campus tutorials. They will present examples, answer student questions, and return marked assignments. They will *not* present solutions to assignment problems before the deadline. However, they can do related examples, and can also answer some specific questions related to an assignment problem (without giving away the solution) provided the problem has been seriously attempted. The tutorials will begin on September 17/19.

Midterm Examination: Thursday November 8, 2012, from 4:30-6:20 p.m. in rooms TBA.

Final grade: Final exam 60%, Midterm 30%, Assignments 10%.

Policy on Lectures and Assignments: Students are expected to attend all lectures and tutorials, and to submit all assignments for grading. This is *especially important* for instance when students encounter serious medical difficulties, and academic progress must be estimated.

Policy on INC Grades: If a student has not achieved a passing grade on both the **assignments** and the **midterm exam**, we do not consider it appropriate to assign an INC grade, even in the event of serious illness.

University Policies:

Academic Integrity: In order to maintain a culture of academic integrity, members of the University of Waterloo community are expected to promote honesty, trust, fairness, respect and responsibility.

[Check www.uwaterloo.ca/academicintegrity/ for more information.]

Grievance: A student who believes that a decision affecting some aspect of his/her university life has been unfair or unreasonable may have grounds for initiating a grievance. Read Policy 70, Student Petitions and Grievances, Section 4, http://www.adm.uwaterloo.ca/infosec/Policies/policy70.htm. When in doubt please be certain to contact the department's administrative assistant who will provide further assistance.

Discipline: A student is expected to know what constitutes academic integrity to avoid committing academic offenses and to take responsibility for his/her actions. A student who is unsure whether an action constitutes an offense, or who needs help in learning how to avoid offenses (e.g., plagiarism, cheating) or about "rules" for group work/collaboration should seek guidance from the course professor, academic advisor, or the undergraduate associate dean. For information on categories of offenses and types of penalties, students should refer to Policy 71, Student Discipline,
http://www.adm.uwaterloo.ca/infosec/Policies/policy71.htm.
For typical penalties check Guidelines for the Assessment of Penalties,
http://www.adm.uwaterloo.ca/infosec/guidelines/penaltyguidelines.htm.

Appeals: A decision made or penalty imposed under Policy 70, Student Petitions and Grievances (other than a petition) or Policy 71, Student Discipline may be appealed if there is a ground. A student who believes he/she has a ground for an appeal should refer to Policy 72, Student Appeals,
http://www.adm.uwaterloo.ca/infosec/Policies/policy72.htm.

Note for students with disabilities: The Office for Persons with Disabilities (OPD), located in Needles Hall, Room 1132, collaborates with all academic departments to arrange appropriate accommodations for students with disabilities without compromising the academic integrity of the curriculum. If you require academic accommodations to lessen the impact of your disability, please register with the OPD at the beginning of each academic term.