

MATH 443: GRAPH THEORY

September 2009

SCHEDULE: Section 101, 2:00-3:00 MWF in MATH 104

INSTRUCTOR: Richard Anstee

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OFFICE HOURS: tentatively 3-4 MW, (we can sometimes use MATX 1118 as a study room), but you can try anytime (I usually arrive by 9:00 but teach 9-10 MWF)

WEBSITE: <http://www.math.ubc.ca/~anstee/math443/math443.html>

TEXT: *Introduction to Graph theory*, Doug West.

OUTLINE: This is an honours course which will be dominated by proofs in the area of Graph Theory. Students find Graph Theory a very appealing subject because of the ease of drawing pictures. In addition the subject doesn't require a huge array of tools at an introductory level. We hope to have a number of in class activities. We will be unable to cover the text in complete detail.

- Graph Definitions, Paths, cycles and trails, Degrees
- Trees and Distance (e.g. shortest paths)
- Matchings and Factors (e.g. Tutte's Theorem)
- Connectivity and Paths (e.g. Mengers Theorem)
- Colouring of Graphs (e.g. Brooks Theorem)
- Planar Graphs (e.g. Kuratowski's Theorem)
- Edges and Cycles (e.g. edge colouring and Vizing's Theorem, Hamiltonians)

GRADING: 50% final, 30% midterms, 20% assignments and term work.

ASSIGNMENTS: There will be about 10 assignments. Students may work together on assignments but must write up their work independently. Copying is forbidden. Any 2 (or more) assignments with some virtually identical answers deemed the result of copying will be given 0 total credit. The students are reminded of the plagiarism policies of the University.

MIDTERMS: Two 50 minute midterms scheduled for Friday Oct. 9 and Friday Nov. 13 .

FINAL: 3 hours

MISSED WORK: From time to time students may be unable to finish assignments or attend midterms or the final exam. In the case of the Final Exam, the students should contact the Faculty of Science office and the missed final will be handled in a formal way. In the case of assignments, please contact me before class time on the due date, and given your reasons for the missed work. Assuming the reasons are legitimate, I will note that you will be missing the assignment. A missed midterm/quiz can be handled in a similar way, if you contact me before the test time. In such circumstances your grade is computed out of a smaller number than 100 and then scaled appropriately to get a grade out of 100. For example, if a midterm counts 15% and a student informs me in advance of legitimate reasons for missing the midterm, the student would have a grade computed out of 85 and then this would be scaled to a grade out of 100 by multiplying by 100/85. Without advance notice (to me by email or phone message to Math Office etc) the default

will be a grade of 0 in the missed work but you may contact me. A student must finish a significant amount of term work in order to pass.