Topics in Graph Theory
CSCI 4115/ MATH 4330/5330
Winter 2014
www.mathstat.dal.ca/∼janssen/4115

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Office hours: by appointment

Time and place: TR 10:05–11:25, Chase 319

Text: Handouts and class notes. I recommend that you have a standard graph theory text available for the duration of the term. Recommendations will be given in class.

Evaluation method: Class attendance is mandatory; any student that has less than 90% attendance will fail the course. Evaluation will be based on assignments, a final take-home exam and, for MATH 5330 students, a final project. For in-class participation, students will occasionally be ased to present class material. Assignments may be done in groups of at most two students. You may consult books, but not find the answers through the internet, or copy the answer verbatim from an external source. Assignments should be taken as seriously as a take-home exam. At least one assignment will be due every class. Students taking this class as MATH 5330 will occasionally have different assignments, and will be expected to do a final project.

Computation of final mark (CSCI 4115 or MATH 4330):

Assignments:	60%
In-class participation:	15%
Final exam	25%

Computation of final mark (MATH 5330):

Assignments:	50%
In-class participation:	10%
Final project:	20%
Final exam	20%

Students with disabilities are encouraged to register as quickly as possible at the Student Accessibility Services if they wish to receive academic accommodations. To do so please phone 494-2836, email access@dal.ca, drop in at the new Mark A. Hill Accessibility Centre or visit our website at www.studentaccessibility.dal.ca. Students are also reminded that, for your convenience, all forms are now available on our website.

Topics:

(1) Graph Colouring and related topics: chromatic number and index, independence number and clique number, lower and upper bounds, colouring special classes of graphs, perfect graphs, list colouring, independence number.

(3) Random graphs and models for self-organizing networks: Erdos-Renyi random graphs and its basic properties, geographic threshold graphs, preferential attachment.

(3) The Laplacian of a graph, spectral graph theory

(4) Graph similarity, graph homomorphisms and graph limits

Other topics may be added if time permits.