

Math 3710 – Graph Theory

Lecture Time: 12:00pm – 1:50pm (MW) Location: Knudson Hall 301

Textbook: Bondy and Murty, Graph Theory 2nd Ed.

Grinberg, An Introduction to Graph Theory

Prerequisite: Math 2200

Instructor: Mei Yin mei.yin@du.edu

Office and Office Hours: Zoom, 10:30am – 12:00pm (TR), or by appointment

Course Description

Topics of study will include paths, cycles, trees, Euler tours and Hamilton cycles, bipartite graphs, matchings, basic connectivity theorems, planar graphs, Kuratowski's theorem, chromatic number, n-color theorems, and introduction to Ramsey theory.

Tentative Calendar

The Week Of	Sections Covered
March 30 – April 3	Introduction, Ramsey theory
April 6 – April 10	Paths, cycles, connectivity
April 13 – April 17	Euler tours, Hamilton cycles
April 20 – April 24	Multigraphs, digraphs
April 27 – May 1	Trees, forests
May 4 – May 8	Spanning trees, matrix-tree theorem

May 11 – May 15	Bipartite graphs, matchings
May 18 – May 22	Networks, flows
May 27	Planar graphs, Kuratowski's theorem
June 1 – June 5	Chromatic number, n-color theorems
June 8	Project Presentation

Grading: Your final grade for the course will be determined based on a numerical weighted average calculated as follows: **Homework 30% Midterm 30% Term Project 40%**.

Homework: There will be four homework sets, due at the beginning of the class on **Mondays April 13, April 27, May 18, and June 1**.

Midterm: A take-home midterm will be given, with a tentative due date on **Monday, May 4**.

Term Project: The term project can be targeted towards either the theoretical or the applied aspect of graphs and is due on **Monday, June 8**.

Students with Disabilities: If you qualify for academic accommodations because of a disability or medical issue, please submit a faculty letter to me from AccessibleDU: Student Disability Services (SDS) in a timely manner so that your needs may be addressed. SDS determines accommodations based on documented disabilities/medical issues. SDS is located in Suite 22 on the lower level of Driscoll South, 303-871-3241. Information is also available online at <https://studentaffairs.du.edu/disability-services-program>.

Honor Code: All work submitted in this course must be your own. You are encouraged to work together on homework, but make sure that working together does not turn into copying another student's answer. For consequences of violating the Academic Misconduct policy, refer to the University of Denver website on the Honor Code (<https://studentaffairs.du.edu/student-rights-responsibilities/honor-code>).

Religious Accommodations: University policy grants students excused absences from class or other organized activities for observance of religious holy days, unless the accommodation would create an undue hardship. Faculty are asked to be responsive to requests when students contact them **in advance** to request such an excused absence. Students are responsible for completing assignments given during their absence, but should be given an opportunity to make up work missed because of religious observance. Once a student has registered for a class, the student is expected to examine the course syllabus for potential conflicts with holy days and to notify the instructor by the end of the first week of classes of any conflicts that may require an absence (including any required additional preparation/travel time). The student is also expected to remind the faculty member in advance of the missed class, and to make arrangements in advance (with the faculty member) to make up any missed work or in-class material within a reasonable amount of time.

Other: Check the **DU academic calendar** for important dates throughout the quarter: <http://www.du.edu/registrar/calendar/index.html>.