Combinatorics and Graph Theory 4700/5700 - Spring 2019

Instructor: Dong Ye
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Office: KOM 274
Time and Room: TR 11:20pm-12:45pm @ KOM 205
Office Hours: TR: 9:00 AM- 11:00 AM or by appointment
Reference books: Bondy and Murty, Graph Theory, Springer (2010 ed. or 1976 ed.);
Prerequisites: Foundation in Higher Mathematics (Math 3460).

1. Purpose: The purpose of the course is primarily to improve students’ writing of proofs in Combinatorics and Graph Theory while learning about discrete structures such as graphs. Some algorithms are presented along the way, and many of the proofs are constructive.

2. Objective: This course is intended as a rigorous course that challenges students to think. Upon successful completion of this course, students should understand some fundamental materials in graph theory, such as matchings, cycles, coloring, and subgraph covering and packings of graphs.

3. Materials To Be Covered:

1. Fundamental concepts;
2. Connectivity;
3. Matchings and factors;
4. Decomposition and partition;
5. Covering and packing;
6. Algebraic graph theory;
7. Probabilistic methods and random graphs.

Note: The instructor reserves the right to make changes to the materials covered by this course.

4. Requirements:

- Attendance is required and monitored. If you regularly fail to hand in assignments or miss tests, the instructor will assume you are no longer attending and is required to report accordingly to the records oce at mid-semester. This will negatively effect any scholarship funding you receive.

- Electronic devices are forbidden to use in class.

- Take good, complete notes during the lectures.
• Carefully read the relevant materials in the Textbook/Notes after each class and LEARN rules, results, and Theorems highlighted in the text.

• Ask questions in class when you are unsure about something.

5. **Tests and Quizzes:** There will be ten quizzes, three tests and one final exam during this semester. All the tests, quizzes and the final exam will be closed notes/closed book. Only two best tests will be counted into the final grade. Any student who wants a makeup for missing a test needs to show a valid excuse in writing or e-mail **BEFORE** the test to get a permission. There will be **NO** makeup for missing quizzes and the final exam.

6. **Attendance:** All students are required to attend every lecture. An excused absence **MUST** be asked for, in writing (e-mail is acceptable), **BEFORE** the class. Students are to be responsible for any missing work (for instance, test, quiz, or schedule change, etc.) due to his/her absence.

7. **Homework:** Doing exercises is an important component to learning. For practice, students should do all of the assigned homework problems.

8. **Grading:**
   Two Tests (100 pts each): 200 pts
   Final Project: 100 pts;
   Ten Quizzes (10 points each): 100 pts;
   Homework: 100 pts
   Total: 500 pts

   **Grade scale:**
   
   A: 450-500 (90%); B: 400-449 (80%); C: 350-399 (70%); D: 300-349 (60%); F: 0-299 (<60%)

9. **Important Dates:**
   January 14 – Classes Begin
   January 27 – Last day to drop without grade
   March 4-9 – Spring Break - No Classes
   March 24 – Last day to drop with grade W
   April 24 – Last Day of Classes
   April 25 – Study Day - No Classes

10. **Department Policy With Regard To Drops after the Official Drop Date:** No grade of W will be assigned after the official drop date except in situations involving extreme extenuating circumstances beyond the student’s control. In particular, a W will not be granted merely because the student is failing. Students should be aware that missing the official drop date and thereby receiving an F can have ramifications on financial aid.

11. **Tennessee Education Lottery Scholarship Information:** Do you have a lottery scholarship? To retain the Tennessee Education Lottery Scholarship eligibility, you must earn a cumulative TELS GPA of 2.75 after 24 and 48 attempted hours and a cumulative TELS GPA of 3.0 thereafter. A grade of C, D, F, FA, or I in this class may negatively impact TELS eligibility.
If you drop this class, withdraw, or if you stop attending this class you may lose eligibility for your lottery scholarship, and you will not be able to regain eligibility at a later time.

For additional Lottery rules, please refer to your Lottery Statement of Understanding form (http://www.mtsu.edu/financial-aid/forms/LOTFEV.pdf) or contact your MT One Stop Enrollment Coordinator (http://www.mtsu.edu/one-stop/counselor.php).

12. **Reasonable Accommodation for Students with Disabilities:** If you have a disability that may require assistance or accommodation, or you have questions related to any accommodations for testing, note takers, readers, etc., please speak with me as soon as possible. Students may also contact the Office of Disabled Students Services (898-2783) with questions about such services.

13. **Judicial Statement:** Academic misconduct is defined as plagiarism, cheating, fabrication, or facilitating any such act. For purposes of this section, the following definitions apply: (1) Plagiarism. The adoption or reproduction of ideas, words, statements, images, or works of another person as one’s own without proper acknowledgment. (2) Cheating. Using or attempting to use unauthorized materials, information, or study aids in any academic exercise. The term academic exercise includes all forms of work submitted for credit or hours. (3) Fabrication. Unauthorized falsification or invention of any information or citation in an academic exercise. (4) Facilitation. Helping or attempting to help another to violate a provision of the institutional code of academic misconduct. Academic misconduct will result in actions taken as defined by the MTSU code of Academic Integrity. A complete description of this code can be found at www.mtsu.edu/judaff.

**Important Note:** The instructor has primary responsibility for control over all classroom behavior and can direct the temporary removal or exclusion from the classroom of any student engaged in disruptive conduct or conduct which otherwise violates the general rules and regulations of MTSU.