

MATH 689 Special Topics in Advanced Graph Theory

Spring 2020

Syllabus

Lectures: 9:55am–11:10am, Mon, Wed. Blocker 163.

Instructor: Chun-Hung Liu, Blocker 631B, chliu@math.tamu.edu.

Office hours: 2:00pm-3:00pm Mon, 11:00am-12:00pm Thu, or by appointments.

Course webpage: <https://www.math.tamu.edu/~chliu/teaching/spring20math689.html>

Textbook: No required textbook. Related reading resources are listed in the course webpage.

Course Description: Graphs are useful models applied in many different subjects such as computer science and optimization. This course addresses deeper theorems and wider topics about graph theory than MATH 613. It will concentrate on central research topics and tools in structural and extremal graph theory which study the interplay of graph properties and structures and density of graphs. Tentative topics include Ramsey theory, probabilistic method, fractional graph theory, graph coloring, tree-decompositions, graph minors, Turán-type questions, regularity lemma and topological method.

Learning outcomes: The objective of this course is guiding students to explore central research topics in structural and extremal graph theory. Upon successful completion of this course, students will be ready and have the abilities to work on research problems in graph theory.

Prerequisites: MATH 613 or equivalent or approval of the instructor.

Grading policy:

- Homework assignments (100%).

No late assignment will be accepted except for university approved excuses.

For the final semester grade, students who get **90%-100% of points will be an A, 80%-90% of points will be a B, 70%-80% of points will be a C, 60%-70% of points will be a D, and an F for otherwise.**

Grades record will be frequently updated at the course website at eCampus. You are required to frequently check the correctness of the grades record posted there. Requests for record correction or regrading for any question in assignments should be made by the end of the lecture after it is returned. The deadline for requesting regrading midterm or final exams will be announced when the grading is complete.

Attendance policy: Attending lectures is expected. See student rule 7 (<https://student-rules.tamu.edu/rule07/>).

Make-up policy: Late submission for assignment will be accepted only if it is due to university approved excuses. Based on university rules, all absence notifications should be sent to the instructor in writing no later than the end of the next working day after the absence (and prior to the absence if possible). The submission should be done within two days after you return school. Details about university approved excuses can be found in student rule 7 (<https://student-rules.tamu.edu/rule07/>).

Scholastic dishonesty: “*An Aggie does not lie, cheat or steal, or tolerate those who do.*” You are required to obey the Honor Code. Cheating in any form is not acceptable. See student rules and <http://aggiehonor.tamu.edu/> for more information about scholastic dishonesty.

Copyright: All printed handouts and materials posted at the websites for this course are protected by US Copyright Laws. It is not allowed to share these materials with any person not enrolled in this class.

Americans with Disabilities Act (ADA) Policy Statement:

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Resources, currently located in the Disability Resources building at the Student Services at White Creek complex on west campus or call 979-845-1637. For additional information visit <http://disability.tamu.edu/>

Title IX and Statement on Limits to Confidentiality:

Texas A&M University and the College of Science are committed to fostering a learning environment that is safe and productive for all. University policies and federal and state laws provide guidance for achieving such an environment. Although class materials are generally considered confidential pursuant to student record policies and laws, University employees – including instructors – cannot maintain confidentiality when it conflicts with their responsibility to report certain issues that jeopardize the health and safety of our community. As the instructor, I must report (per Texas A&M System Regulation 08.01.01) the following information to other University offices if you share it with me, even if you do not want the disclosed information to be shared:

- Allegations of sexual assault, sexual discrimination, or sexual harassment when they involve TAMU students, faculty, or staff, or third parties visiting campus.

These reports may trigger contact from a campus official who will want to talk with you about the incident that you have shared. In many cases, it will be your decision whether or not you wish to speak with that individual. If you would like to talk about these events in a more confidential setting, you are encouraged to make an appointment with the Counseling and Psychological Services (<https://caps.tamu.edu/>).

Students and faculty can report non-emergency behavior that causes them to be concerned at <http://tellsomebody.tamu.edu>.