Course Outline — FALL 2019
MATH 412: INTRODUCTION TO GRAPH THEORY

Sections X13, (CRN: 30348) : 12:00-12:50 pm MWF, 245 Altgeld Hall
Web page: http://www.math.uiuc.edu/~jobal
József Balogh, 233B Illini Hall, 244-1918, jobal@illinos.edu
office hours: shortly after classes. F: 1:00-1:50. Communication via e-mail is strongly encouraged.
Study Session: Wednesday: 1:00-2:50, location 007 Illini Hall.
Test 1: October 2 Wednesday 6:00pm - 7:30pm, 245 AH
Test 2: November 13 Wednesday 6:00pm - 7:30pm 245 AH
Test 3: December 11 Wednesday 6:15pm - 7:45pm 245 AH.
Final Exam: Final exam: December 17, Tuesday 8:00- 11:00 am.

TEXT: **Introduction to Graph Theory**, D. West (Prentice Hall), 2-nd ed., Chapters 1-7.

This is a serious introduction about properties and applications of graphs. The concepts and theories of paths, circuits (including Euler and Hamiltonian), network flows, coloring, planarity and trees are studied deeply.

REQUIREMENTS:
There are 3 tests, 8 homework assignments, and a final exam.
Each midterm is for 100 points. The final is for 200 points and will cover all of the course material.

Each of the eight homework is counted, and from each homework out of the 6 exercises, the best 5 is counted (a total of 25 points). For students taking for 4 credits, ALL the HOMEWORK is a MUST! Tipically, homework is due on Fridays (check website), study sessions on Wednesdays are recommended.

Students missing a midterm should well-document it, and in general there is no conflict exam. The tests are evening exams, and instead some classes will be cancelled.

The total score is 700 points, the grading is
$600 - A$, $570 - A^-$, $540 - B^+$, $510 - B$, $480 - B^-$, $450 - C^+$, $420 - C$, $390 - C^-$, $360 - D+$, $330 - D$, $300 - D^-$.

To get a C^- or better, at least 40% is needed on the final exam.
To get an A at least 60% is needed on the final exam.
The scale for graduate students registered for 1 unit (4 hours) is different, they must get 40 points higher than undergraduate students to get the same grade, e.g. to get an A, a graduate students must get 640 points. Some very excellent students might get an A^+.

RESOURCES: Electronic mail is a medium for announcements and questions. Collaborative study sessions are offered before tests to aid students in understanding the material and solving problems.

PREREQUISITES: There are no official prerequisites, but students will be best prepared if they have encountered logical reasoning, induction, and equivalence relations. Note that this class is proof based!