MATH 589 - GRAPH THEORY
Nicholls State University, Summer 2015

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My office hours are 1:00-2:00 pm, 3:45-4:30pm M-Th. Please contact me (phone, email, or in person) during these times if you have any questions. If you need assistance at a different time, let me know and we'll work something out.

Prerequisite: MATH 509.

Text: There is no required text. We will use notes posted to Moodle routinely throughout the semester (http://moodle2.nicholls.edu/moodle).

Course Description (catalog): Selected current topics in mathematics. May be repeated for credit if content differs.

Course Description (instructor): We will cover the basics of graph theory including notations and terminology, simple graphs, bipartite graphs, planar graphs, cycles, digraphs, trees, paths, matchings, colorings, and Eulerian circuits. We'll also cover important theorems such as Min-Max Theorem, Tutte's 1-Factor Theorem, Menger's Theorem, Turan's Theorem, and Kuratowski's Theorem (as time allows).

Course Outline
I   Fundamentals
II   Trees
III   Matchings
IV   Connectivity
V   Colorings
VI   Planar Graphs

A few words need to be said about the Internet aspect of this course. All assignments, notes, announcements, etc. will be posted on Moodle. All students enrolled in an Internet course should have basic computer skills (such as word processing, e-mail, navigating the Internet, etc.). I invite you to visit the distance education webpage (http://www.nicholls.edu/distance) for more information and guidance. As an online student, you will be somewhat self-paced. This therefore requires self-discipline and self-motivation. The problem sets need to be turned in on time. It is the responsibility of the student to notify the instructor of technical and/or personal problems that may interfere with online participation. Since email will be our primary means of communication, you will need to check your Nicholls email account

regularly (***at least*** once a day) for possible news and/or announcements. Additionally, please feel free to email me as often as is necessary if you have questions about the material. Finally, just like a typical class, instances of academic dishonesty such as plagiarism will not be tolerated. Sanctions for such behavior are outlined in the *Code of Student Conduct* (Section 1.9).

       Special Note: Section Five of the Code of Student Conduct, 'Academic Dishonesty and Disruptive Behavior,' includes a requirement that faculty file a charge complaint statement with their respective dean whenever a student is confronted or disciplined for cheating. The Office of Academic Affairs will maintain these records, and any student confronted and/or disciplined for multiple offenses of academic dishonesty will be brought before the Academic Affairs Integrity Committee for further review and potential sanctions. Please read the Code of Student Conduct for further details regarding this policy."

Course Objectives: At the completion of this course, a student will be able to:
- Demonstrate knowledge of the vocabulary of graph theory
- Prove graph-theoretical propositions using definitions and theorems
- Produce examples of graphs with various properties
- Effectively communicate results in writing
- Use theorems of graph theory to solve problems

Grading Structure: Your course grade will consist of problem sets and final exam. These will be described fully below.

       Problem Sets*:** At least once a week, maybe more often, I will upload a set of class notes. Included therein will be several exercises for you to work and turn in within a couple of days. ***This portion will count for 70% of your course grade.

       Final Exam*:** We will have a comprehensive take-home final exam. I say "take home" in that you will not need a proctor and will have several days to complete it. You will be allowed to use your class notes. It is essentially a problem set except that you will not be allowed to work with anyone. ***This portion will count for 30% of your course grade.

       At the conclusion of the semester, letter grades will be assigned based on the usual 10% grading scale (A: 90-100%, B: 80-89%, C: 70-79%, etc). Late assignments will not be accepted unless there are VERY unusual circumstances, and make-up exams will only be administered if the student provides a valid excuse. The instructor decides which excuses are valid and which circumstances are unusual. As I said above, academic dishonesty (i.e. cheating, plagiarism, etc.) will not be tolerated.

Important Dates
       '**W**' Day – Thursday, July 9, 2015

Academic Grievances: The proper procedure for filing grade appeals or grievances

related to academic matters is listed in Section 5 of the *Code of Student Conduct* and at the following link: www.nicholls.edu/documents/student_life/code_of_conduct.pdf.

Continued Learning following an Extreme Emergency: In order to make continued learning possible following an extreme emergency

students are responsible for:
- reading regular emergency notifications on the NSU website;
- knowing how to use and access Moodle (or university designated electronic delivery system);
- being familiar with emergency guidelines;
- evacuating textbooks and other course materials;
- knowing their Moodle (or designated system) student login and password;
- contacting faculty regarding their intentions for completing the course.

faculty are responsible for:
- their development in the use of the Moodle (or designated) software;
- having a plan for continuing their courses using only Moodle and email;
- continuing their course in whatever way suits the completion of the course best, and being creative in the continuation of these courses;
- making adjustments or compensations to a student's progress in special programs with labs, clinical sequences or the like only in the immediate semester following the emergency.

Assistance with Studying and Assignments:
- The Tutoring Center at 143 Peltier Hall. Call 985-448-4100, email tutoring@nicholls.edu, or visit http://www.nicholls.edu/academic-enhancement.
- The Writing Center at 144 Peltier Hall. Call 985-448-4100, email tutoring@nicholls.edu, or visit http://www.nicholls.edu/academic-enhancement.
- Online Tutoring through Moodle. Look for the Brainfuse log-in link on the home page, http://moodle2.nicholls.edu/moodle

ADA Compliance: If you have a documented disability that requires assistance, you will need to register with the Office of Disability Services for coordination of your academic accommodations. The Office of Disability Services is located in 158A Shaver Gym. The phone number is (985) 448-4430 (TDD 449-7002).