Math 292   Graph Theory   Fall 2015

Class Meeting: T/TH Reeves 212

Instructor: Nathan Shank

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Office Phone: 610-861-1373

Office Location: PPHAC 219

Office Hours: Monday, Wednesday 11:30 - 1:00 and Friday 9:15 - 10:15. Other times by appointment.

Text: *Introductory Graph Theory with Application* Buckley, Lewinter 2013, and *Pearls in Graph Theory, A Comprehensive Introduction* Hartsfield, Ringel 2003

Course Goals: After completing the course, successful students will

- learn basic definitions and theorems associated with graph theory

- learn different graph classes and parameters

- model mathematical problems using concepts in graph theory

- solve problems using various concepts in graph theory

Course Topics: Throughout this course students will learn the basics of graph theory. First students will learn basic mathematical concepts used in proofs including induction, pigeon hole principle, counting techniques, combinatorial arguments, contradiction, and contrapositive. Definitions, graph classes, graph operators, and several parameters will also be covered early in the course. Other topics covered include graphical models, problem solving with graphs, applications of graph theory, graph algorithms, coloring, trees, connectivity measures, graph characterizations, planar graphs, and networks.

Assignments/Assessment:

- Homework: As you know math is not a spectator sport. You need to practice what you learn. Homework will be assigned weekly and it will be collected at the beginning of class on Tuesdays. First attempt at homework should be done on your own. If you still need assistance you may ask for a hint from a classmate or work on the problem together. However acquiring an entire solution from a classmate in not acceptable. Homework is to be written up individually. Any collaboration must be properly documented. If two or more homework sets look similar, no points will be awarded for the entire homework set (with no warning). Please see the section on

academic honesty policy for more information. You are always welcome to come to office hours to see the instructor. Late homework will not be accepted for a grade. Homework should be neatly written on stapled, lined notebook paper (or typed of course). If you need paper, please see me.

- Homework should be neat, legible and on clean paper. Please DO NOT include your scratch paper. Your final version of your homework should NOT be your first draft.

- You should present your homework in the order they are assigned. It should be clear where one problem ends and the next begins.

- You must show your work. Just supplying an answer will receive no credit. You are grading on your understanding of the tools to SOLVE a problem, not the final answer.

- Your name and date should be on the top of the first page. If there are multiple pages, they should be stapled.

- Homework is to be turned in at the beginning of class on the due date. No late homework will be accepted for a grade.

• Quiz: Although I do not anticipate giving any quizzes, quizzes may be given at any time. Quizzes can not be made up. Quizzes will be used if there is an attendance problem or as a check to see if students are doing the required readings.

• Project: You will be required to do one project for the course. More details will be given at a later date.

• Exams: You will have 2 exams and a cumulative final. These exams can not be made up except under extreme circumstances with appropriate documentation, for example a doctors note or an accident report. If a student is going to miss an exam for an extenuating circumstance, they must notify the instructor at least one full week before the exam date. If a make up exam is approved, an individual exam will be made, differently from the class exam, and administered on the next available day. The tests are tentatively scheduled for Thursday, October 8 and Thursday October 19. The final exam will be Thursday, December 17, 1:30 - 4:30.

Grading: Final determination of your course grade is subject to the discretion of the professor of the course. You are responsible to keep track of your own grade. Grades will be computed as follows:

Homework, Quiz	30%
Tests	30% total (15% each)
Project	10%
Final Exam	30%

Class Structure: Class will consist of lecture, group work, individual work, and problem sessions. Please come to class prepared with you text, notes, and calculator everyday. Please be prepared to participate in class. Class will start promptly at 9:50 and class will not end prior to 11:30. Please turn off your cell phones prior to the start of class.

Attendance: Attendance will be taken everyday. There is a very strong correlation between attendance and grades. In order to understand the material, you need to be present in class. Group work also requires everyone to participate. Any student missing more than two classes will lose two percentage points off their final grade for each additional absence. Remember that no late homework or quizzes are accepted.

Academic Honesty: For graded homework assignments and projects, you may use your class notes and any books or library sources except a solutions manual. Any resources (including people) you use must be documented at the top of the homework assignment. As an example if you get help from Bob for problem 4 only, please write "Help with problem 4 from Bob". No points will be deducted for honestly acknowledging help. However if you do not document any appropriate resource this is considered cheating.

The College academic honesty policy appears in your Student Handbook; you are expected to be familiar with it. The Academic Honesty Policy Guidelines specific to mathematics classes are reiterated at the end of the syllabus. They apply to work done outside of class as well as to in-class quizzes and tests. Please read them carefully. If you are unsure about the propriety of a particular procedure or approach, please consult with your instructor before continuing with the assignment.

Special Accommodations: Students who wish to request accommodations in this class for a disability should contact the Academic Support Center, located on the first floor of Monocacy Hall (extension 1401). Accommodations cannot be provided until authorization is received from the Academic Support Center.

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Academic Honesty Policy Guidelines
Mathematics Courses

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The Department of Mathematics and Computer Science supports and is governed by the Academic Honesty Policy of Moravian College as stated in the Moravian College

Students Handbook. The following statements will help clarify the policies of members of the Mathematics faculty.

In all homework assignments which are to be graded, you may use your class notes and any books or library sources. When you use the ideas or thought of others, however, you must acknowledge the source. For graded homework assignments, you may not use a solution manual or the help, orally or in written form, of an individual other than your instructor. If you receive help from anyone other than your instructor or if you fail to reference your sources you will be violating the Academic Honesty Policy of Moravian College. For homework which is not to be graded, if you choose, you may work with your fellow students. You are responsible for understanding and being able to explain the solution of all assigned problems, both graded and ungraded.

All in-class or take home tests and quizzes are to be completed by you alone without the aid of books, study sheets or formula sheets unless specifically allowed by your instructor for a particular test.