Class Time: MWF 2:10-3:00 p.m.  Class Location: MA 306
Instructor: Dr. Mary J. Riegel  Office: Math 012
E-Mail: riegelmj@mso.umt.edu
Office Hours: TR 9:10 -11:00 a.m.

Prerequisites:  M325 (Discrete Mathematics),
or M307 (Intro to Abstract Math) & M361 (Discrete Optimization)
or consent of instructor.
Students should have a background appropriate for senior-level mathematics. Although we will begin with first principles we will assume students have, or can quickly learn, basic knowledge and understanding of elementary graph theory.


Important Dates:
- Aug 27 (Mon): Classes Begin
- Sept 3 (Mon): Labor Day Holiday
- Sept 17 (Mon): Last day to add/drop on Cyberbear
- Oct 29 (Mon): Last day to add/drop by paper form
- Nov 12 (Mon): Veterans Day Holiday
- Nov 21 (Wed): Travel Day (No classes held)
- Nov 22-23 (Thu-Fri): Thanksgiving Vacation
- Dec 7 (Fri): Last Regular Class Day
- Dec 7 (Fri): Last day to Add/Drop by Petition
- Dec 10-14 (Mon-Fri): Finals Week

Description:  This course is designed as a senior level treatment of graph theory. We will move quickly through the basics (graphs and subgraphs) before moving on to richer topics. Topics covered may include connectivity, trees, planarity, stable sets and cliques, vertex and edge colorings, matchings and Hamiltonian cycles. Depending on course pacing and student interests additional or fewer topics may actually be covered.

Learning Goals:  In March 2006, UM’s Department of Mathematical Sciences adopted the following learning goals for this course.

1. To learn the basic concepts, terminology, and notation of graph theory;
2. To explore in depth several graph-theoretic themes;
3. To become familiar with basic applications of graph theory;
4. To learn how to construct and present mathematical proofs at the level and sophistication of a 400-level math course.
Assessment: Course grade will be based on homework assignments, two exams, and a cumulative final exam. Traditional letter grades will be assigned using the +/- system. UM’s policy on Incomplete grades will be followed. For more on these and other grading policies see UM catalog.

Homework: Assignments will be given regularly, approximately every other week of class. A (possibly improper) subset of the assigned problems will be graded. Students are encouraged to work together on the homework, however students are required to compile their own solution sets, comprised of their own submissions, augmented by notes from meetings with other students and with me. Students are also responsible for staying up to date with the reading assignments posted at the beginning of each lecture. Reading the sections in advance will help maximize absorption of material in class.

Graduate Increment: Assigned work and exams for graduate students, though overlapping those of the undergraduate students, will be more extensive and will probe the mathematical theory more deeply.

Grading Policy:

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<thead>
<tr>
<th>Item</th>
<th>Date(s)</th>
<th>Weight</th>
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</thead>
<tbody>
<tr>
<td>Homework</td>
<td>27 August - 7 December</td>
<td>30%</td>
</tr>
<tr>
<td>Exam #1</td>
<td>Friday, September 28</td>
<td>20%</td>
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<tr>
<td>Exam #2</td>
<td>Friday, November 2</td>
<td>20%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>Thursday, December 13, 1:10-3:10 pm</td>
<td>30%</td>
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Accommodation: Students with disabilities are welcome to discuss accommodations with me. Disability Services for Students will assist in the accommodation process. For more information, visit their website at http://life.umt.edu/dss. Please note that appropriate forms need to be submitted in a timely fashion.

General Remarks

On Homework: Please use complete sentences, proofread, and polish your work before submitting it for a grade. You are encouraged to type homework solutions unless your handwriting is clear. Solutions should be written/typed in private and in your own words. If you use an important idea from someone else, then please acknowledge that person by giving and appropriate citation in your write-up. This professional courtesy will not affect your grade as you are encouraged to work together.

On make-ups: Make-up exams will not be given unless there is a valid excuse cleared with me prior to the exam.

Academic Honesty All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by the University.

Student Conduct Code All students need to be familiar with the Student Conduct Code, which is available for review online (the easiest way to find it is to search for “Student Conduct Code” via the “A to Z Index” link on top of the UM home page.)