Course meetings: Wednesday 2:20 to 4:00 p.m., Memorial Hall 301
Instructor: Dr. Ann Stehney
Office: Colonial Hall 208 Telephone: 861-1555 E-mail: stehney@moravian.edu
Office Hours: Tuesday and Thursday, 11:30 to 1:00, and other times by appointment.

Course topics: This ½-unit course will explore ideas of mathematical modeling through applications in graph theory, including networks, and the mathematics of social choice, including voting and fair division. Part 1 will cover material in chapters 1 through 4 in the text *Introduction to Graph Theory* and selected sections in other chapters of the text. Part 2 will cover topics in the mathematics of social choice, including common voting methods (such as plurality, Condorcet’s method, Borda count, approval voting) and fair division schemes.

Required texts:
Part 2: (text on the mathematics of social choice to be announced)

Course Goals: After successfully completing this course, a student will:
- understand how mathematical models can help us answer questions, draw conclusions and make decisions.
- understand a variety of applications of mathematics using concepts of graph theory.
- be able to convert real-world situations into graphs that can be analyzed quantitatively.
- understand the concept of fairness and the complexities of voting systems.
- be able to apply fair division schemes in a variety of situations.
- be able to explain clearly, both orally and in writing, how the results obtained from analyzing a model relate to the context from which they were obtained.

Homework and preparing for class: At the end of each class, you will be assigned material to read and/or homework to be done for the next class session. The homework will involve various types of activities, including some writing assignments and some longer projects. Some of these assignments will be collected and graded (with notice in advance). Graded homework will be penalized for lateness.

Homework problems assigned for practice will usually be reviewed during the next class; they will not be graded. Students are encouraged to study and work together on these ungraded assignments.

Quizzes and tests: Each half of the course will have six weekly quizzes and an hour exam.
Part 1: quizzes on January 19 through February 23; hour exam on *Wednesday, March 2*.
Part 2: quizzes on March 23 through April 27; hour exam to be given at the time set by the Registrar during final exam week.

Calculators: You will need to have a simple calculator to use for this class. You are expected to have it with you at each class meeting. You may also use it on all quizzes and tests.
**Attendance and Late Work:**  Students are expected to attend all classes and complete work on time. Some of the ideas and concepts of the course will be demonstrated through class activities (questions to answer, problems to solve, or data to contribute). In order to earn credit toward your class participation grade, you must be in class and participate. **There will be no make-ups for absence.**

In addition, there will be graded work (activity and/or quiz) in each class session. **No make-ups will be available for any reason.** However, the lowest quiz grade for each part of the course will be dropped in figuring your course grade.

**Make-up hour exams will be given only in the case of a documented illness or emergency.**

Graded assignments done outside of class will be penalized for lateness. You should inform the instructor of any unavoidable absence in advance, if possible. You are also responsible for obtaining all class handouts and keeping them organized. (A three-ring binder for the course, with sections for class notes, handouts, quizzes and tests will be very helpful.)

**Grading:**  Your course grade will be computed as follows:
- Quizzes on Part 1 (best 5 of 6)  20%
- Quizzes on Part 2 (best 5 of 6)  20%
- Hour exam on Part 1 (March 2)   20%
- Hour exam on Part 2 (date set by Registrar)  20%
- Graded homework assignments and projects  10%
- Class participation  10%

**Classroom etiquette:**  You need to come to class prepared. This means that you have carefully read any assigned material and worked (seriously) on the assigned problems. You have your notebook, your textbook, and your calculator with you. You are ready to ask and answer questions in class and to work with your classmates on any in-class group activities. This classroom needs to be a place where everyone feels comfortable asking and answering questions; you are expected to treat everyone in class with respect. You need to turn off your cell phone and any other electronic devices and keep them put away during class. Finally, you are expected to be on time for class, to stay until class is over, and not leave the room unless there is an emergency. (It is very disruptive to everyone, but especially to your instructor, to have people walking in and out of the classroom.)

**E-mail:**  You may receive course notices and assignments from time to time by Moravian College e-mail. You must check your campus account regularly and be able to read attachments in Microsoft Word.

**Extra help:**  Students are strongly encouraged to ask questions in class and to see Dr. Stehney for help outside of class as much as necessary. Regular office hours are set aside for your benefit. You can make an appointment at other times -- ask me before or after class, send e-mail, or call the number above. You can also ask quick questions by e-mail or phone.

**Special Accommodations:**  If you need accommodation for a disability of any kind, you must work with the staff of the Learning Services Office (for cognitive disabilities) or the Counseling Office (for other kinds of disabilities) to document the disability and identify suitable accommodation(s). **Only professionals in those offices can determine what is appropriate in individual circumstances.** Once they provide me with written notice, I will be glad to discuss how to accommodate your situation as discreetly as possible.
Academic Honesty: For graded homework assignments and projects, you may use your class notes and any books or library sources. However, you may not use the help, orally or in written form, of any individual other than your instructor unless it is specifically a group assignment. You may not copy someone else’s work or allow someone else to copy your work. If an assignment is completed by a group of students, each person who contributed to the work must put his or her name on the work.

The College's academic honesty policy appears in your Student Handbook; all students are expected to be familiar with it. The Academic Honesty Policy Guidelines specific to mathematics classes are clarified below. 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.

ACADEMIC HONESTY POLICY GUIDELINES
MATHEMATICS COURSES

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 Student 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 thoughts 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 for a particular test.