

# Mathematics 210 - Communicating in Mathematics

## Section A – Winter 2003

<b>Instructor</b>	Prof. Ted Sundstrom	<b>Office</b>	2268 Mackinac Hall
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<b>Instructor's Home Page</b>	<a href="http://www.faculty.gvsu.edu/sundstrt/">http://www.faculty.gvsu.edu/sundstrt/</a>		
<b>Class Schedule</b>	M W F	10:00 – 10:50	1119 Mackinac Hall
<b>Office Hours</b>	Mon. 11:00 – 12:00 Thur. 9:30 – 10:30	Tue. 2:00 – 3:00 Fri. 9:00 – 10:00	and by appointment
<b>Prerequisite</b>	MTH 201 and completion of the composition requirement.		
<b>Textbook</b>	<i>Mathematical Reasoning: Writing and Proof</i> , by Ted Sundstrom, copyright 2003, Prentice-Hall, Inc.		
<b>Course Content and Objectives</b>	<p>Elementary logic, sets, axiomatic systems, elementary number theory, relations, functions, and methods of mathematical proof including direct proofs, indirect proofs, mathematical induction, case analysis, and counterexamples.</p> <p>The objectives for this course include the following:</p> <ol style="list-style-type: none"><li>1. To develop the ability to read and understand written mathematical proofs.</li><li>2. To develop the ability to construct and write mathematical proofs using standard methods of mathematical proof including direct proofs, mathematical induction, case analysis, and counterexamples.</li><li>3. To develop logical thinking skills and to develop the ability to think more abstractly in a proof oriented setting.</li><li>4. To develop talents for creative thinking and problem solving.</li><li>5. To improve the quality of communication in mathematics. This includes improving writing techniques, reading comprehension, and oral communication in mathematics.</li><li>6. To explore and understand the concepts described in the course content above.</li></ol>		
<b>Internet Access and Student e-mail</b>	Most of the materials and information for this course will be posted to the course home page. This homepage is part of one of Grand Valley's internet sites called "GVSU Blackboard." The internet address for the GVSU Blackboard System is <a href="http://bb.gvsu.edu">http://bb.gvsu.edu</a> . (A link to this page is also on the instructor's home page.)		

**Students are expected to check the course home page daily since the course schedule and assignments will be posted on this home page. Students are also expected to use the e-mail provided by GVSU as the**

- Homework** **instructor will frequently send e-mail messages to the entire class.** Daily reading and exercises will be made and homework will be reviewed in class. These homework assignments will not be collected.
- Assignments** During the semester, there will be several Assignments. These assignments will usually be take-home assignments that will be distributed in class on a Friday and will be due on the following Wednesday. Some of these assignments may have an in-class portion that will be completed on the Friday when the rest of the assignment is distributed. Each assignment will be worth 20 points.
- Supplemental Writing Skills** MTH 210 is a designated SWS (Supplemental Writing Skills) as described in the GVSU catalog. Completion of Writing 150 with a grade of C or better (not C-) is a prerequisite. SWS credit will not be given to a student who completes this course before completing Writing 150. SWS courses adhere to certain guidelines. Students turn in a total of at least 3000 words of writing during the semester. Part of that total may be essay exams, but a substantial amount of it is made up of finished essays or reports or research papers. The instructor works with the students on revising drafts of their papers, rather than simply grading the finished pieces of writing. At least four hours of class time are devoted to writing instruction. At least one-third of the final grade is based on the writing assignments.
- Preview Activities** One of the unique features of the textbook is the set of Preview Activities at the beginning of each section. Students will complete these activities prior to the classroom discussion of each section. Each student can do them individually, but it is strongly recommended that students work in teams of two, three, or four students to complete these preview activities.
- The purpose of the preview activities is to prepare the students for the classroom discussion of the section. It must be emphasized that it is permissible to make mistakes on the preview activities. In fact, the place to make mistakes (and then correct them) is on the preview activities.
- Before the classroom discussion on a section, at least one of the preview activities for that section will be collected and graded. Grading will not be based on whether or not everything is correct, but rather on whether or not a serious and substantial effort was made to complete the Preview Activity. Each Preview Activity that is graded will receive a score of 4 points, 2 points, or 0 points.
- Mid-Term Examination** A mid-term examination worth 150 points will be given in two parts. Part A is tentatively scheduled for Friday February 7, 2003 and Part B is tentatively scheduled for Friday February 28, 2003. No make-up exams will be given without permission from the instructor prior to the date of the exam.

**Portfolio  
Project**

You will be given ten mathematical problems to complete that will be included in a "MTH 210 Portfolio." In addition, you will be given a list of definitions to complete that must be included in your portfolio. You may hand in each of these Portfolio Problems and the list of definitions two times to be critiqued. After each submission, you have the opportunity to rewrite your portfolio proof prior to submission for a final grade. However, no more than one problem may be submitted for review on a given day, and no more than four problems may be submitted for review during any week.

The portfolio will be worth a total of 150 points. Each problem will be worth 10 points (for a total of 100 points), and the list of definitions will be worth 20 points. In addition, there will be 30 points possible for submission of drafts for review by the professor.

The portfolio problems and definitions must be completed using a word processor capable of producing the appropriate mathematical symbols and equations. The last date to have a portfolio problem critiqued is Wednesday April 9, 2003, and the final Portfolio is due on Wednesday April 16, 2003. More details on the process of writing and rewriting as well as due dates for submissions of drafts will be given within the first week of the course.

**Library and  
Internet  
Assignment**

This will be a writing assignment that will involve research in the library and on the internet. This assignment will be worth 50 points. Details about the assignment will be distributed during the first two weeks of class.

**Final  
Examination**

The final examination will be a comprehensive test worth 150 points. The final exam is scheduled for Tuesday April 22, 2003 from 12:00 noon to 1:50 p.m.

**Grading**

Grades will be determined by the scores on the preview activities, assignments, portfolio, mid-term examination, and final examination according to the following scale:

Grade	Minimum Score	Grade	Minimum Score
A	90%	C+	74%
A-	87%	C	70%
B+	84%	C-	67%
B	80%	D+	64%
B-	77%	D	60%