Math 290-01: Foundations of Mathematics	Professor: Dan Singer
Mon-Tue-Thu-Fri 1:00 – 1:50 PM	Webpage: http://mavdisk.mnsu.edu/singed/
Classroom: Wissink Hall 286	Email: dan.singer@mnsu.edu
My Office: Wissink Hall 263	Office Hours: 2-5 Mon-Tue-Thu-Fri

Course Description: The purpose of this course is to teach students how to think about mathematics in a rigorous way and write formal proofs. Topics include mathematical logic, standard mathematical definitions (sets, functions, equivalence relations, integers, divisibility), and proof techniques (direct proof, proof by contradiction, proof by induction, proof by exhaustive case analysis, counting arguments). Prerequisite: Math 247.

Textbook: *An Introduction to Mathematical Reasoning* by Peter J. Eccles, Cambridge University Press, 1997.

Course Format: I will develop the material and work out a variety of examples in class. I am relying on students to take careful notes, read the textbook carefully, and write up the homework solutions thoroughly. The more thorough and precise you are in writing up homework solutions, the better you will understand the material.

Homework: There are two types of homework assignments: routine problems at the end of each section, and six more challenging problem sets at the end of each unit of material (see the Table of Contents of your textbook). Students will be expected to submit all the routine problems (answers are in the back of the textbook) and a selection of the more challenging problems from the problem sets. Please staple your homework before submitting it.

Quizzes: There will be a 20 minute quiz at the end of each Friday (except on exam days). These will be based on the lectures and homework. The purpose of these is to give you regular feedback on your comprehension of the material.

Grade Calculation: 5 Exams: 100 points each. Homework: 100 points. Quizzes: 100 points. The course grade is determined by the scale below:

A: 630 – 700 points	B: 560 – 629 points	C: 490 – 559 points
D: 420 – 489 points	F: 0 – 419 points	

Grade Policy: Your grade is based on your performance during the sixteen weeks of the regular semester in accordance with the grade calculation above. I will not change any grades after they have been submitted to the Registrar, and I will not consent to extra-credit opportunities designed for the express purpose of raising the grade of one individual. All discussions with me regarding your grade should be limited to how you can study and what scores I have currently recorded for you in my records. Consult the handout "Five Tips for Effective Studying in Mathematics Courses."

Student Conduct: Please arrive on time and don't interrupt the class with conversation or electronic devices or by leaving early. Your respectful conduct will be appreciated!

Course Schedule:

Dates	Topics	Remarks
01/13 – 01/17	1, 2	
01/21 – 01/24	3, 4	No class on Monday
01/27 – 01/31	5, Problems I	
02/03 – 02/07	6, 7	Exam 1 on Thursday (sections 1-5)
02/10 – 02/14	8, 9	
02/17 – 02/21	Problems II, 10	
02/24 – 02/28	11, 12	Exam 2 on Thursday (sections 6-9)
03/03 – 03/07	13, 14	
03/17 – 03/21	Problems III, 15	
03/24 – 03/28	16, 17	Exam 3 on Thursday (sections 10-14)
03/31 – 04/04	18, Problems IV	
04/07 – 04/11	19, 20	Exam 4 on Thursday (sections 15-18)
04/14 – 04/18	21, 22	
04/21 – 04/25	Problems V, 23	
04/28 – 05/02	24, Problems VI	Exam 5 on Monday, May 5, 12:30 – 2:30, (sections 19-24)