Plymouth State UNIVERSITY

MA 3110.01: Logic, Proof and Axiomatic Systems
Syllabus, Fall 2008

MWF 11:15–12:05 am, Hyde 315

General Information:

Instructor: Dana Ernst   **Office:** Hyde 312

Email: `dcernst@plymouth.edu`   **Office Phone:** 603.535.2857

Office hours: MWF 1:30–2:30 pm (or by appointment)

Webpage 1: `http://oz.plymouth.edu/~dcernst`

Webpage 2: `http://dcernst.blogs.plymouth.edu` (Coming soon)

Course Information and Policies:

Prerequisites: A satisfactory grade in MA 2550 or MA 2490.

Course Description: Mathematical logic is introduced and used in developing techniques of writing proofs in mathematical settings, including topics in abstract algebra. Although the variety of settings may vary each semester, stresses proof development and includes mathematical induction and relations.

Text: *A Transition to Advanced Mathematics*, by D. Smith, M. Eggen, R. St. Andre, 6th edition, (Thomson/Brooks Cole).

Purpose: The primary objective of this course is to develop skills necessary for effective proof writing. Students will improve their ability to read and write mathematics. Successful completion of MA 3110 provides students with the background necessary for upper division mathematics courses. Also, the purpose of any mathematics course is to challenge and train the mind. Learning mathematics enhances critical thinking and problem solving skills.

Attendance: Regular attendance is expected and is vital to success in this course.

Homework: Homework will normally be assigned *every* lecture day (Monday, Wednesday, Friday) and will be due at the beginning of the next lecture day. Your homework will *always* be graded for completion and *occasionally* some of the problems will be graded for correctness. You are allowed and encouraged to work together on homework. However, each student is expected to turn in his or her own work. Every homework assignment is worth 5 points. There will be roughly 32 homework assignments. Five (possibly more) of your lowest homework scores will be dropped. Your total homework score will be worth approximately 25% of your final grade. Late homework will *not* be accepted unless you have notified me by phone or email that your homework will be late. Email is the preferable method of notification and the deadline for notification of late homework is 5:00 am the day the assignment is due. When notifying me that you will be turning in your homework late, you should tell me what section

the homework is from and when you plan on turning the homework in. This generous policy should not be abused.

Exams: There will be 3 exams, which are *tentatively* scheduled for the following Fridays: **Sep 26**, **Oct 24**, and **Nov 21**. Each exam will be worth 100 points (approximately 19% of your final grade). Exams may be a combination of in-class and take-home. There will also be a cumulative final exam, which will be on **Monday, Dec 15** at **11:00 am–1:30 pm**. The final exam is also worth 100 points (approximately 19% of your final grade). Make-up exams will only be given under extreme circumstances, as judged by me. In general, it will be best to communicate conflicts ahead of time.

Other Comments: Put your cell phone on vibrate (or, turn it off)! If you must be late, try not to disrupt class when you come in.

Course Evaluation:

Grading: You will be graded on your written work, which will be judged on the basis of *correctness*, *completeness*, and *legibility*.

Basis for Evaluation: Your final grade will be determined by the scores of your homework, exams, and final exam.

Homework:	5 points each	(approximately 25% of final grade)
3 Exams:	100 points each	(approximately 56% of final grade)
Final exam:	100 points	(approximately 19% of final grade)

Grade Determination: Grades may be "massaged" at the end of the semester, but in general this is what you should expect:

$$\frac{\text{your total points}}{\text{total possible points}} \times 100 = \text{your percent score}$$

93–100%	A	73–76%	C
90–92%	A-	70–72%	C-
87–89%	B+	67–69%	D+
83–86%	B	63–66%	D
80–82%	B-	60–62%	D-
77–79%	C+	0–59%	F

Additional Information:

General Education: According to the PSU General Education Curriculum, MA 3110: Logic, Proof, and Axiomatic Systems is listed as a Writing Course: development of a writing process that includes the ability to prewrite (brainstorm, outline, take notes, free-write) on a selected topic; to prepare, assess, and organize information; and to compose, revise, and edit a polished product.

Math Center: This student-run organization provides peer tutoring services for most 1000 and 2000 level math courses and some 3000 level courses. Tutors are typically math majors interested in teaching math and practicing their instructional skills. The Math Center is

located in Hyde Hall room 351. You can drop in anytime during open hours. The hours are MTWTh 9 am–5 pm, F 9 am–12 pm, and MW 7–9 pm. More information can be found at:

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`http://www.plymouth.edu/math/resources/center.html`

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Student Handbook: The PSU Student Handbook addresses policies pertaining to students with disabilities, religious observation, honor code, general conduct, etc. The Handbook can be found at:

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`http://www.plymouth.edu/stulife/handbook/handbook.html`

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ACT for Growth: All teacher education majors are subject to the Areas of Concern/Targets for Growth policy, which is located at

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`http://www.plymouth.edu/education/act.html`

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Closing Remarks:
When does the learning happen? It might happen in class, but most likely it happens when you sit down to do your homework. Most of you can follow what I do on the board, but the question is, can you do it on your own? To learn best, you must struggle with mathematics on your own. It is supposed to be difficult. However, if you are struggling too much, then there are resources available for you. I am always happy to help you. If my office hours don't work for you, then we can probably find another time to meet. You can also get help from each other. Get a study buddy! Help each other learn. Go to the Math Center (see above). It is your responsibility to be aware of how well you understand the material. Don't wait until it is too late if you need help. *Ask questions!*