MHF 3202 Sets and Logic - Fall 2015

Time: MWF 4th period (10:40-11:30 am)                     Instructor: Jean A. Larson,
Place: 239 Little Hall                                      Office: 362 Little Hall
Prerequisite: Calculus 2                                    Email: jal at ufl dot edu
Web: http://people.clas.ufl.edu/jal/mhf3202/                Phone: (352) 294-2317

Tentative Office hours: Monday 8th, Wednesday 5th, Friday 3rd, and by appointment.


Course Objectives: MHF 3202 is a bridge course, that is, one designed to help you make the transition from computational mathematics classes like calculus and differential equations into abstract mathematics classes like algebra and analysis. In particular, your goal is to obtain a foundational understanding of standard mathematical notation, to construct logical arguments using standard proof techniques; to detect errors in reasoning in your own arguments and those of others; and to construct illustrative examples and counter-examples.

Class Format and Attendance: The class will be a mixture of lecture, group work, discussion, and dialog between the instructor and the class. You develop the proof skills by writing your own proofs, so be prepared to commit the necessary time to do the homework. You are expected to attend class regularly (attendance is taken every day), to be prepared to answer questions on the reading, and to participate in class discussions and group work. If you miss class, you are responsible for finding out about homework and/or announcements made during the class. Requirements for make-up exams, assignments, and other work in this class are consistent with university policies and can be found at: https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx

Homework: Homework will be collected on Fridays for assignments given the previous Monday and the Wednesday and Friday of the previous week. The class format for homework is that you include the assignment on the top of the first page of a given set, write your name in the upper righthand corner of each page, number the problems by chapter, section and problem number, e.g. 1.1: 2c, write out the problem to be solved and give the solution. Leave margins on all sides for comments. The last page in a problem set should be blank except for your name in the upper righthand corner in the form “Last, First”. All the pages are to be stapled together and folded so the outside has only your name on it.

Academic Honesty: The course will be conducted in accordance with the University honor code and academic honesty policy, which can be found on the following web site: https://catalog.ufl.edu/ugrad/current/advising/info/student-honor-code.aspx

Assessment: Three times during the semester, the grades given for group work, homework, and quizzes will be totaled and scaled to 10 points for work grades, usually after dropping the lowest of one type of assignment, accounting for 15% of the total grade. Attendance will account for 10% of your grade and will be assessed both on the percentage of classes attended and via attendance typically assigned for participation in ungraded activities. There will be four 50-point midterms during the term. The lowest score of the four midterms will be dropped, giving a maximal possible exam score of 150 points, accounting for 75% of the total grade.

The exams will be based upon homework problems, discussion questions, group work, quizzes and the reading. The tests will be cumulative with a focus on recent material. Written medical documentation is required for makeup exams. No other makeups will be given without prior agreement with the instructor.
Grades will be assigned according to the scale below.

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<tr>
<th>Grade</th>
<th>Percent</th>
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<tbody>
<tr>
<td>A</td>
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<td>A−</td>
<td>87.0-89.99%</td>
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<tr>
<td>B+</td>
<td>84.0-86.99%</td>
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<tr>
<td>B</td>
<td>80.0-83.99%</td>
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<tr>
<td>B−</td>
<td>77.0-79.99%</td>
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<tr>
<td>C+</td>
<td>74.0-76.99%</td>
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<tr>
<td>C</td>
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<td>D</td>
<td>60-69.99%</td>
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<td>E</td>
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See the current UF policy on assigning grade points: https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx

**Classroom Accommodation:** Students with disabilities requesting classroom accommodation should first register with the Disability Resource Center (352-392-8565, www.dso.ufl.edu/drc) by proving appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

**Tentative Weekly Schedule:**

1. Sentential logic and operations on sets: 1.1-1.4
2. Quantifiers, logical equivalence, more set operations: 1.5, 2.1-2.2
3. Logical equivalence, more set operations: 2.2-2.3
4. Basic proofs: 3.1-3.5
5. Exam 1 (September 25); further proof techniques, introduction to relations
6. Relations: 4.1-4.3.
9. Exam 2 (October 21); 5.1:
10. Introduction to functions: 5.1-5.3
11. Inverses and equivalence relations: 5.3; 4.6.
13. Introduction to infinity: 7.1-7.2
14. Uncountable sets, Thanksgiving: 7.2
15. Exam 3 (November 30) and Cantor-Schröder-Bernstein Theorem: 7.3
16. Exam 4 (December 9)

**Course Evaluations:** Students are expected to provide feedback on the quality of instruction in this course based on 10 criteria. These evaluations are conducted online at https://evaluations.ufl.edu. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at https://evaluations.ufl.edu/results.