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## MHF 3202 (Fall 2015)

### Time and Location

M W F Period 7 in Little Hall Room 239

Office Hours: TBD in Little Hall Room 439 (or by appointment)

### Textbook

Textbook: How to Prove it: A Structured Approach, 2nd Ed. by Daniel J. Velleman.

This textbook is required as it will both form the basis for in-class lectures and will be the source of homework exercises. On top of that, it's really a nice read.

### Description and Goals

The goal of elementary mathematics courses such as Calculus or Differential Equations is the memorization and application of formulas and techniques, but the goal of the mathematician is the discovery of new mathematics. This includes the discovery of new formulas but extends to the development of new concepts and structures (like derivatives or complex numbers). This class is meant to bridge that gap and give students the fundamental tools for practicing mathematics. First we will learn the terminology and notation necessary to translate between plain English and formal mathematical language. Next, we will learn the tools of deductive reasoning in order to assess the correctness of mathematical arguments. To build on this, we will study a variety of proof techniques in order to construct new mathematical arguments. Finally we will apply this to the study properties of functions, relations, and sets. This corresponds to the entirety of the textbook!

### Homework

Every week I will choose some homework problems from the book. These problems are the ones that I think best represent exam problems. Of these problems, I will mark a few which are to be solved and turned in for grading. I may grade only a subset of the turned in problems. Typically homework will be assigned on Friday, due the following Friday, and returned the following Monday.

### Quizzes and In-Class Work

There will be occasional, typically announced quizzes to reinforce topics that are commonly missed on homework assignments. Furthermore, some class periods may be replaced by an in-class activity which will be assessed like a quiz.

### Exams

We will have three in-class exams and a final exam. The first will cover chapters 1 and 2, the second will cover chapters 3 and 4, and the third will cover chapters 5 and 6. The final will cover chapters 1-7. Since the material in this class keeps building on itself, every exam should be considered cumulative, but it will focus on the most recent material.

### Grading

Homework contributes 15% to your final grade, in-class assignments contribute an additional 10%, the in-class exams contribute a combined 50%, and the final exam contributes the remaining 25%.

Final grades are assigned on a thirteen point scale (100-88 for A, 87-75 for B, etc.) with the top and bottom two points reserved for plus and minus grades.

### Tentative Weekly Schedule

Emphasis should be placed on tentative. We may move more quickly or slowly depending on the class's understanding, and we may omit or add sections based on class interest.

Week 1: Sections 1.1-1.3  
 Week 2: Sections 1.3-1.5  
 Week 3: Sections 2.1-2.2 (Labor Day)  
 Week 4: Sections 2.3, 3.1-3.2  
 Week 5: Exam 1 (On Ch. 1,2), Sections 3.3-3.4  
 Week 6: Sections 3.5-3.7  
 Week 7: Sections 4.1-4.3  
 Week 8: Sections 4.4-4.6  
 Week 9: Exam 2 (On Ch. 3,4) Sections 6.1-6.2  
 Week 10: Sections 6.3-6.4  
 Week 11: Section 6.5 (Homecoming)  
 Week 12: Sections 5.1-5.2 (Veteran's Day)  
 Week 13: Section 5.3, Exam 3 (on Ch 5,6)  
 Week 14: Section 7.1 (Thanksgiving)  
 Week 15: Section 7.1-7.2  
 Week 16: Section 7.3  
 Wed. December 13, 3:00-5:00: Final Exam

### Other Information

- This course will enforce the academic honesty policy which can be viewed at the following link: <https://catalog.ufl.edu/ugrad/current/advising/info/student-honor-code.aspx>
- Students seeking disability must first register with DSO (<https://www.dso.ufl.edu/>). They will then be provided with an accommodation letter which should in turn be provided to the instructor. Accommodations cannot be provided until the instructor has received this letter.
- Various important dates such as the drop date can be found at <https://catalog.ufl.edu/ugrad/current/Pages/adfall1516.aspx>.

