## Dana Bartosova



# Sets and Logic (MHF 3202)

Time and Location MWF Period 7, Little Hall 221.

## Office hours

M W Period 8, F Period 5, or by appointment in LIT 346.

#### Announcements

1/6: Please email me which presentation topic you would like to work on by Monday, January 13. The topics will be distributed at first come first served basis. If I do not receive your choice, I will randomly assign a project to you. Recommended reading will be updated weekly.

## Textbook and recommended reading

Daniel J. Velleman, How To Prove It: A Structures Approach, Second Edition, Cambridge University Press, New York, NY 10013.

Recommended book chapters:

Wednesday 1/8: Preface, Introduction, Sections 1.1. and 1.2.

Friday 1/10: Sections 1.2., 1.3., 1.4.

## Description and Goals

This is an introduction to rigorous mathematical proofs. The goal is to learn how to structure a proof that contains no gaps, how to correctly and coherently reason. Some statements may look (intuitively) obvious but one can prove them false, which is why we need to be able to prove what seems to be a triviality. The content we will be working with will likely be quite familiar to you already. You will be responsible to read assigned book chapters before the class and work on problems. You are welcome to discuss together but you have to write up homework solutions independently and you are not allowed to copy any part of your work.

## Homework

There will be biweekly homework assigned here on every other Wednesday. The lowest grade will be . . . . . . . . .

aropped and you can hand in one nomework up to 2 days late with no reasoning. Otherwise, late nomework will no be accepted unless extreme situation occurs (such as serious illness), for which a proof will be required. Homework will receive two equally weighed grades: one for completeness and one for two randomly selected problems graded in detail. Reach out to me in time with any difficulties when completing homework.

#### Exams

There will be 3 midterms and a final exam. The exams will be closed book, closed notes and no devices will be allowed. Unless you have a serious well-documented reason, there will be no make up exams.

Midterms are tentatively scheduled for the following dates in class

January 29

February 26

April 8

#### Presentation

Everyone will be required to give a presentation. Presentations will be prepared in teams of 5 and each person will have 5 minutes to present their part.

#### Presentation topics

- 1. Why do we need formal proofs.
- 2. Proof systems and automated proving.
- 3. Relations and Functions
- 4. Recurrence and mathematical induction.
- 5. Infinite sets.

#### Grades

Homework will be worth 10 (completeness) + 10 (2 random problems) points each, midterms and a presentation 50 points each and final 100 points = total 400 points.

A above 93%, A- 90-92%, B+ 87-89%, B- 83-86%, C+ 77-79%, C 73-76%, C- 70-72%, D+ 67-69%, D 63-66%, D- 60-62 %, E, I, NG, WF 59% and below.

## Honor Code

UF students are bound by The Honor Pledge which states, We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by chiding by the Honor Code. On all work submitted for credit by students at the Honor time of Elorida, the

following pledge is either required or implied: On my honor, I have neither given nor received unauthorized aid in doing this assignment. The Honor Code specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

## **Class Attendance**

Requirements for class attendance and makeup exams, assignments, and other work in this course are consistent with university policies that can be found at https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx.

## Accommodations for Students with Disabilities

Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, https://www.dso.ufl.edu/drc) by providing 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.

## **Online Evaluations**

Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations 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.

## Contact information for the Counseling and Wellness Center

https://counseling.ufl.edu, 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.



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