

COURSE SYLLABUS - SPRING 2015

MATH 201  
INTRODUCTION TO PROOFS  
(3 credits)

**Section B: 11:00am-11:50am MWF, 282 Carver Hall**

Final Exam: 9:45am-11:45am, Thursday, May 7 2015

**Section D: 1:10pm-2:00pm MWF, 282 Carver Hall**

Final Exam: 2:15pm-4:15pm, Wednesday, May 6 2015

**Instructor:** Bernard Lidický, 422 Carver Hall, lidicky@iastate.edu

Web page: <http://orion.math.iastate.edu/lidicky/201/>

Office hours: 2:10pm - 3:00pm MW

Grader: Matthew Jacobs, 453 Carver Hall, jacobsm@iastate.edu

**Brief description of goals and objectives:** We will learn how to read and write mathematical proofs using logical reasoning, including quantifiers and truth tables. We also learn various proof techniques including mathematical induction method while learning selected basic facts in set theory, elementary number theory, combinatorial mathematics and calculus. We will learn and apply the methods of thought that mathematicians use to verify theorems, explore mathematical truth and create new mathematical theories. This will prepare us for advanced mathematics courses, for we will be better able to understand proofs, write our own proofs and think critically and inquisitively about mathematics.

**Prerequisites:** MATH 166 or MATH 166H

**Textbook:**

Book of Proof (Second Edition) - Richard Hammack

Basic Analysis: Introduction to Real Analysis - Jiří Lébl

**Topics to be covered:** Math 201 covers parts of Chapters 1–2 and 4–13 in Book of Proof, together with parts of Chapters 1–3 in Basic Analysis.

**Study habits:** This course does require considerable work. You should be devoting time to reading the book, thinking about the proofs, ideas, concepts, and techniques, talking

with some of your classmates about them, doing all the assigned homework problems. It is expected that you will read the book - not everything you should learn and know will be discussed in class. Regular attendance and participation in class activities are the prerequisites for success.

**Online resources:** The class has a webpage <http://orion.math.iastate.edu/lidicky/201/> and a page in Blackboard. The webpage contains basic information about the class and class log, which serves as a tentative schedule of the course as well as list of what was done in class. The Blackboard contains grades as well as a forum where you can seek help. Department also maintains a general MATH 201 description <http://orion.math.iastate.edu/dept/CoursePages/201/>.

**Homework assignments:** The assignments will be given weekly. They will be always due Wednesday BEFORE the class begins, including the Wednesday of the dead week. The homework assignment does not cover all exercises in the chapters in the book. You are strongly encouraged to read all the exercises in the book and try to solve them. You will get the most knowledge if you try to solve as many exercises as possible. No late assignments will be accepted. If you cannot make it to class on some Wednesday, you can scan your work and email it to the instructor. Your work on any assignments should be well-presented in good English, and not written carelessly. While you can discuss the assignments with classmates, the work you hand in should be your own write-up and not copied from someone else. The homework assignments will be 30% of your final grade.

**Exams:** There will be three in-class exams during the semester, each worth 15% of the final grade, and a final exam, worth 25% of the final grade. The exams will occur during regular class meeting times and are scheduled for February 13, March 13 and April 17 or 20. These dates are unlikely to change but any such change will be announced both in class and on Blackboard.

I do not intend to give make-up exams. A missed exam due to an extenuating circumstance will be prorated based on the performance on the final examination. Please check <http://www.math.iastate.edu/Faculty/ClassPolicies.html> for the university policy on “excusable absences”. The only possible excuses are medical excuse, extra curricular activities as a representative of Iowa State University, armed forces deployment, or officially mandated court appearances, including jury duty. Official documentation is required in all cases.

**Grading policy:** Your final grade will be 30% for homework, 15% for each of the three midterms and 25% for the final exam. Grades thresholds are 90% for A, 80% for B, 70% for C and 60% for D. Below 60% is F.

Because of this absolute standard, you are not in competition with your classmates nor does their performance influence positively or negatively your performance. You are encouraged to form study/problem groups with your classmates; things not clear to you may become

obvious when you try to explain them to others or when you hear other points of view. Sometimes just verbalizing your mathematical thoughts can deepen your understanding.

As already mentioned, if you discuss with others the exercises, each person should write up her/his own version of the solution.

If you do not have a anybody in class to talk to, you are welcome to use the forum on Blackboard to ask questions. Anybody from the course can answer. Please, never post a complete solution of any homework assignment to the Blackboard.

**Classroom etiquette:** Communication devices must remain switched off during the class periods and final. Laptops or iPads are allowed only for textbook reading or taking notes.

**Attendance:** Although attendance will not be taken, it is expected and strongly suggested that you attend all of the class meetings. Office hours are for those of you who need additional help beyond that given in the class; they are not substitutes for class.

**Academic dishonesty:** The class will follow Iowa State University's policy on academic dishonesty. Anyone suspected of academic dishonesty will be reported to the Dean of Students Office. <http://www.dso.iastate.edu/ja/academic/misconduct.html>

**Disability accommodation:** Iowa State University complies with the Americans with Disabilities Act and Sect 504 of the Rehabilitation Act. If you have a disability and anticipate needing accommodations in this course, please contact instructor to set up a meeting within the first two weeks of the semester or as soon as you become aware of your need. Before meeting with the instructor, you will need to obtain a SAAR form with recommendations for accommodations from the Disability Resources Office, located in Room 1076 on the main floor of the Student Services Building. Their telephone number is 515-294-7220 or email [disabilityresources@iastate.edu](mailto:disabilityresources@iastate.edu). Retroactive requests for accommodations will not be honored.

**Dead week:** There will be a homework assignment due Wednesday of the dead week.