MATH 4158: Foundations of Mathematics   Fall 2017

Lectures: Lockett 119, MWF 12:30 – 1:20

> **Professor:** Karl Mahlburg
> **Office:** Lockett 320
> **Office Hour:** M 1:30
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Website   All important course information, including lecture information, homework assignments, and other announcements will be found on the course Moodle page. Most announcements will also be sent by e-mail. Please check frequently!

Textbook   Ian Stewart and David Tall, *The Foundations of Mathematics, 2nd edition*, Oxford University Press, 2015.

Content   This course introduces a rigorous approach to the logical foundations of modern mathematics. We will cover most of Chapters 1 – 10, 12, and 14, as well as additional selected material as time permits. Topics will include logical operations, axiomatic set theory, real numbers, relations, product spaces, order and cardinality.

Prerequisites   You must have completed MATH 2057 (or 2058): Multidimensional Calculus in order to enroll in this course; otherwise you will need instructor approval.

Schedule   Due to University holidays, class will **not** be held on Monday, Sep. 4; Friday, Oct. 20; Wednesday, Nov. 22; or Friday, Nov. 24. If you are unable to attend the regularly held office hours, you may also schedule an appointment.

Grading   Your grade will be based on weekly homework assignments and three Exams. Regular attendance and participation during lectures is also expected. Your grade may be lowered by one full letter for every **three** unexcused absences. Course grades will be weighted as follows:

	Percentage
Problem Sets	40%
(Optional) Bonus Problems	3%*
3 Exams	60%

∗ For each **3** Bonus Problems that you complete, your grade will be raised by 1%, up to a maximum of one position on the ± system.

As of Fall 2015, LSU has implemented a ± grading system. Your course grade will be determined based on your total percentage score as follows:

Grade	Total Course Percentage
A+/A/A-	97%/93%/90%
B+/B/B-	87%/83%/80%
C+/C/C-	77%/73%/70%
D+/D/D-	67%/63%/60%
F	Less than 60%

Homework Homework assignments will be due on most **Wednesdays** at the beginning of class (12:30), and will be posted on the course Moodle page one week in advance. You are expected to complete the problems as thoroughly as possible, though some questions will be open-ended and/or computational. You should spend $4-5$ hours weekly on homework assignments and reading. If you find that you are spending significantly more time than this, please schedule a meeting with me to discuss your progress.

Homework assignments will be graded based on correctness and completeness, although you will receive detailed feedback on only some of the problems.

Group Work You are allowed, and even encouraged to work in small groups on homework assignments, subject to the following conditions:

1. You must list the names of all of the other students with whom you discussed the problems at the top of your assignment;
2. You must write up your own solutions using your own words and arguments.

Exams No supplemental materials are allowed during exams, including calculators, computers, class notes, etc. You may not communicate by any means with other students during exams. If you have any conflicts with the scheduled exam times, or have any University-approved special needs, you must inform me *in advance*.

Exam 1	Friday, Sep. 29 (in-class)
Exam 2	Friday, Oct. 27 (in-class)
Exam 3	Thursday, Dec. 7*

∗ The third Exam will be take-home, and will be due during Finals Week.

Conduct LSU students are expected to maintain high standards of academic integrity. Any incidences of suspected cheating on exams and quizzes will be reported directly to the Judicial Affairs Division in the Dean of Students Office; offenses can result in loss of course credit or expulsion from the university. Instances of direct copying on homework assignments will result in loss of credit for **both** students involved.

Scientific calculators and touchscreen or stylus computers are allowed *solely* for note-taking. Cell phones, MP3 players, and all other electronic devices are not allowed in the classroom at any time.