Syllabus for MAT 118: Mathematical Thinking

Stony Brook University, Spring 2017

Course URL: https://www.ic.sunysb.edu/Faculty/cscaduto/teaching/mat118/

In this course, we will explore various applications of mathematics with a view towards developing your mathematical thinking and problem solving abilities. The emphasis will be on real-life mathematical problems, such as determining the outcomes of elections, finding efficient routes, and studying population growth.

Instructor:

Christopher Scaduto
Lectures: MWF 10:00am-10:53am, Engineering 143
Email: cscaduto@scgp.stonybrook.edu
Office: Simons Center for Geometry and Physics 309
Office hours: MW 11:00am-12:00pm

Recitations:

R01:	W	9:00am- 9:53am,	Library E4310,	Xujia Chen
R02:	M	1:00pm- 1:53pm,	Library E4330,	Tobias Shin
R03:	Th	1:00pm- 1:53pm,	Library E4330,	Rayne Goldberg

Recitations can be very helpful. There, your TA will go over the homework problems, answer your questions, and hand out the graded homework.

Textbook:

Excursions in Modern Mathematics by Peter Tannenbaum, 8th edition.

The textbook is available at the campus bookstore. I recommend that you try to read the text before lecture, in order to greatly increase your comprehension.

Calculators:

Following the precedent set by previous instructors, calculators will **not** be allowed during exams. However, you are free to use a calculator when learning the material or doing the homework. Try to avoid becoming too dependent on your calculator!

Homework:

Each week you will be assigned 5 to 7 homework problems. These will be posted both on the course webpage and on *Blackboard*. The problems will be taken from the course textbook. I recommend that you read the corresponding material before doing homework. Only some of the problems will be graded by your TAs, but you will not be told which ones: you are supposed to solve all of them. There will also be some extra suggested problems which will not be graded; your textbook will typically contain the answers to these.

The due date for each homework will be posted along with the posted problems. *No late homework will be accepted*. If you have trouble solving the homework problems, please attend your recitation section, meet with your TA, go the Math Learning Center, or meet with me during one of my office hours.

Exams:

There will be two midterms and a final.

♣ Midterm 1: Wednesday, March 1 (in class)

♣ Midterm 2: Wednesday, April 19 (in class)

♣ Final Exam: Monday, May 15, 8:00am-10:45am (location TBA)

There will be no make-up exams. However, if you have a valid reason for missing an exam, your grade may be computed using the balance of your work in the course.

Grading scheme:

♠ Homework = 25%

♠ Each Midterm = 20%

♠ Final Exam = 35%

Some topics to be covered in the course:

◇ Mathematics Behind Elections, Power and Sharing

◇ Networks and Graphs

◇ Population Growth Models

◇ Financial Mathematics

◇ Fibonacci Numbers and the Golden Ratio

◇ Probabilities and Expectations

For a more detailed schedule of the course content, see the course webpage.

Disability Support Services (DSS) Statement:

If you have a physical, psychological, medical or learning disability that may impact your course work, please contact Disability Support Services, ECC (Educational Communications Center) Building, room 128, (631) 632-6748. They will determine with you what accommodations, if any, are necessary and appropriate. All information and documentation is con- fidential. Students who require assistance during emergency evacuation are encouraged to discuss their needs with their professors and Disability Support Services. For procedures and information go to the following website: http://www.stonybrook.edu/ehs/fire/disabilities.

Academic Integrity Statement:

Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Faculty are required to report any suspected instances of academic dishonesty to the Academic Judiciary. Faculty in the Health Sciences Center (School of Health Technology & Management, Nursing, Social Welfare, Dental Medicine) and School of Medicine are required to follow their school-specific procedures. For more comprehensive information on academic integrity, including categories of academic dishonesty, please refer to the academic judiciary website at http://www.stonybrook.edu/commcms/academicint egrity/index.html.

Critical Incident Management Statement:

Stony Brook University expects students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of Judicial Affairs any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students' ability to learn. Faculty in the HSC Schools and the School of Medicine are required to follow their school-specific procedures.

Conduct:

Stony Brook University expects students to maintain standards of personal integrity that are in harmony with the educational goals of the institution; to observe national, state, and local laws and University regulations; and to respect the rights, privileges, and property of other people.