

# Syllabus for MAT 118: Mathematical Thinking

Stony Brook University, Summer 2018

In this course, we will explore various applications of mathematics with a view towards developing your independent 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: Sam Auyeung

Lectures: TTH 1:30pm - 4:55pm, Physics P112

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Office: Math Tower, S-240A

Office Hours: W 10:00am-11:00am

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

## Homework

Each week you will be assigned homework problems on Tuesday, due the following Tuesday, **at the beginning of class**. These will be posted on Blackboard. The problems will be taken from the course textbook and correspond to material from the chapters. Only some of the problems will be graded but you will not be told which ones: you are supposed to solve all of them and completion points are given. No late homework will be accepted (you may email the homework if you cannot make class).

## Exams

There will be one midterm and a final.

- Midterm: Tuesday, June 19 (in class)
- Final Exam: Tuesday, July 3 (in class)

There will be no make-up exams except in very special circumstances.

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!

## Grading scheme

- Homework = 35%
- Midterm = 25%
- Final Exam = 40%

Some topics to be covered in the course:

- Mathematics Behind Elections, Power, and Sharing
- Networks and Graphs
- Population Growth Models
- Fibonacci Numbers and the Golden Ratio
- Probabilities and Expectations

For more details on course content, see the course webpage on the Stony Brook Math Department 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 confidential. 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 and 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 [https://www.stonybrook.edu/commcms/academic\\_integrity/](https://www.stonybrook.edu/commcms/academic_integrity/).

## **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.