Course Outline
Topics in Contemporary Mathematics (AMAT 104)
SUNY Albany

September 2018 – June 2019 (*Full Year*)
Michael Shuda, Teacher
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Office Hours: 3:30 – 4:30 daily in room 112

Prerequisite

Three years of high school mathematics or permission from the math department.

Text

Tannenbaum, Peter: Excursions in Modern Mathematics, 8th edition

Course Description

This course will explore mathematics through a variety of topics and applications. The course will cultivate an appreciation for mathematics as both a means for understanding a variety of real world phenomena and as a problem solving art. Students will be introduced to both the computational and abstract nature of mathematics. Along the way students will be encouraged to rethink any preconceptions they have had about math and discover the joy of viewing the world through the lens of mathematics.

Course Overview (Prospectus)

- This is a year long course covering five units. We will spend an *average* of six to eight weeks on each unit.

- There will be regular homework assignments that must be completed in order to be successful in the course. Solutions to selected problems will be made available online.

- Each unit will include a unit project and will culminate in a unit exam. Each semester will culminate in a comprehensive exam including a comprehensive final.

Learning Objectives

Students who successfully complete the course will be able to demonstrate:

- The ability to read, write, and think about mathematics critically and carefully.

- The ability to formulate and/or represent problems in a manner appropriate to mathematical, statistical, or logical analysis.

• The ability to employ appropriate mathematical computations, statistical techniques, or logical methods to solve problems and/or draw conclusions from data.

• The ability to make claims about the real world, analyze those claims with mathematics, and communicate those findings to others.

• A new appreciation for the utility of mathematics in every day life and the joy of thinking like a mathematician.

Grading Scheme

Grade Scale	Grade Conversion		Grade Scale	Grade Conversion
93-100	A		76-78	C
90-92	A-		73-75	C-
87-89	B+		70-72	D+
83-86	B		66-69	D
80-82	B-		65	D-
79	C+		Grade < 65	E

This course is A – E graded and there are no s/u (pass/fail) options.

Grading Method

Grades are based on a composite of class participation (5%), homework (10%), quizzes (10%), and exams/projects (75%). The final exam will account for 35% of the final grade.

Attendance

Attendance will be taken daily. It is expected that students arrive on time. The course will build upon itself and move at a brisk pace. As this is a full-year course which meets 45 minutes per day, no more than 10 absences are allowed. There will be a deduction of 2 points from the final grade for every absence beyond ten.

Standards of Academic Integrity

The University at Albany expects all members of its community to conduct themselves in a manner befitting its tradition of honor and integrity. Members are expected to assist the University by reporting suspected violations of academic integrity to appropriate faculty and/or administrative offices. Behavior that is detrimental to the University's role as an educational institution is unacceptable. Claims of ignorance, of unintentional error, or of academic or personal pressures are not sufficient reasons for violations of academic integrity.

The following are examples of the types of behaviors that are defined as academic dishonesty and are therefore unacceptable:

Plagiarism: Presenting as one's own work the work of another person. Plagiarism includes paraphrasing or summarizing without acknowledgment, submission of another student's work as one's own, the purchase of prepared research or completed papers or projects, and the unacknowledged use of research sources gathered by someone else; **Cheating on Examinations:** Giving or receiving unauthorized help before, during, or after an examination; **Multiple Submission:** Submitting substantial portions of the same work for credit more than once; **Sabotage:** Destroying, damaging, or stealing of another's work or working materials; **Unauthorized Collaboration:** Collaborating on projects, papers, or other academic exercises that is regarded as inappropriate by the instructor(s); **Falsification:** Misrepresenting material or fabricating information in an academic exercise or assignment; **Bribery:** Offering or giving any article of value or service to an instructor in an attempt to receive a grade or other benefits not legitimately earned or not available to other students in the class. **Circumventing Security:** Users are prohibited from attempting to circumvent or subvert any system's security measures. Users are prohibited from using any computer program or device to intercept or decode passwords or similar access control information. **Forgery:** Imitating another person's signature on academic or other official documents, including class material. **Theft, Damage, or Misuse of Library or IT Resources:** Removing uncharged library materials from the library, defacing or damaging library materials, intentionally displacing or hoarding materials within the library for one's unauthorized private use, or other abuse of reserve-book privileges. **Any violation of the University's Responsible Use of Information Technology policy**. This includes, but is not limited to, unauthorized use of the University's or another person's computer accounts, codes, passwords, or facilities; damaging computer equipment or interfering with the operation of the computing system of the University.

The violations listed above should be reported to the UHS Program Office immediately. All parties involved will be directed accordingly.

Curriculum & Timeline These dates are indicative but approximate.

Topic	Tentative Exam Dates
Unit 1: The Mathematics of Elections (Chapter 1)	October 30th
Unit 2: The Mathematics of Getting Around (Chapter 5)	December 21st
Unit 3: Population Growth Models (Chapter 9)	February 15th
Unit 4: The Mathematics of Symmetry and Fractal Geometry (Chapters 11 - 12)	April 12th
Unit 5: The Joy of Collecting Data (Chapter 14)	May 31st
Final Exam	June 6th