Repetitio est mater studiorum
(Repetition Is the Mother of Learning)
Latin wisdom

Interest increases as a result of success,
and success is the outcome of hard work
Professor Yaroslav Tagamlizki

Eastern Connecticut State University
MAT 135-01, Math for Liberal Arts, Fall 2023

Instructor: Christian Yankov
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Time and Place: MWF 8:00-8:50 am, Science 117.
Text: Tannenbaum, ***Excursions in Modern Mathematics, 10th Edition,*** published by Pearson, ***ISBN-13: 9780136921967.*** You have various options to get it at the University bookstore. You **do not need** to buy MyLab access. There will be also some additional materials to download (without charge) of which you will be informed later.
Calculator: You will need a calculator for some topics. A simple one will do, but it should be capable of computing powers and logarithms.
Office hours: **MF:** 10:00-11:00 am **and** 12:00-1:00 pm,   **W:** 10:00-11:00 am.
Prerequisites: Placement at this level.
Course description: Mathematics will be applied to solving practical problems in a variety of disciplines. Mathematical topics include voting theory, management science, and financial mathematics. This course is for **non-STEM disciplines only** and thus cannot be used to satisfy the Precalculus Mathematics Plus (MAT 155P) or Precalculus Mathematics (MAT 155) prerequisite for Calculus I with Technology (MAT 243).
Course topics: The Mathematics of Elections, The Mathematics of Power, The Mathematics of Getting Around, The Mathematics of Touring, The Mathematics of Finance.
Class format: Each class meeting will consist of a lecture and include related problem solving.
Eastern Liberal Arts Curriculum (LAC) Tier I Mathematics Outcomes: This course meets the Tier I requirements for the Mathematics category of the Liberal Arts Core Curriculum. This course will achieve the following outcomes:

- Use mathematical thinking as a model of deductive reasoning (lecture content, class activities, homework, quizzes, and/or exams);

- Understand the importance of variation - both how a single quantity can vary and how one quantity varies in relation to another (i.e. functional relationships) (lecture content, class activities, homework, quizzes, and/or exams);

- Understand the important mathematical idea of growth (linear, quadratic, exponential, etc.) (lecture content, class activities, homework, quizzes, and/or exams);

- Apply quantitative reasoning to problems encountered in other academic areas (lecture content, class activities, homework, quizzes, and/or exams);

- Use appropriate technology (e.g. graphing calculators, spreadsheets, mathematical manipulation software) to solve quantitative problems (lecture content, class activities, homework, quizzes, and/or exams);

- Effectively communicate ideas orally, visually, and in writing (group activities, student responses to questions during lectures, quizzes, and/or exams);

- Understand the value of rigorous inquiry and research, academic integrity, and active engagement in the ECSU learning community and beyond (contributing to class activities, timely completion of homework, clearly crediting work of others, penalties for violations of academic integrity)

- Discern the ethical dimensions of the production and acquisition of knowledge within disciplines (penalties for violations of academic integrity, contributing to class activities);

- Ability to think critically (lecture content, class activities, homework, quizzes, and/or exams);

- Effectively seek and employ information to achieve academic goals (lecture content, class activities, homework, quizzes, and/or exams).

Voting Learning Outcomes: We will look at various techniques of voting. In this course, students will:

1. Analyze and interpret preference ballots and schedules.
2. Apply the Plurality voting method to determine the winner in an election.
3. Understand and explain the Majority criterion.
4. Understand and explain the Condorcet criterion.
5. Apply the Borda count method to determine the winner in an election.
6. Apply the Plurality with Elimination voting method to determine the winner in an election.
7. Apply the Method of Pairwise Comparisons to determine the winner in an election.
8. Understand and explain the Monotonicity criterion and the Independence of Irrelevant Alternatives criterion.

Finance Learning Outcomes: We will cover the basics of finance, which include topics about saving and borrowing money. In this course, students will:

1. Understand the meaning of the terms principal and interest.
2. Apply the simple interest formula to calculate the balance of a savings account.
3. Apply the compound interest formula to calculate the balance of a savings account.
4. Understand the difference between arithmetic and geometric growth.
5. Apply the interest formula for continuous compound interest to calculate the balance of a savings account.
6. Use the Future Value formula to determine required deposits into a sinking fund.
7. Use the Present Value formula to determine the payments required to fully amortize a loan.

Attendance: It is Department policy that a student **with more than 5 absences of class meetings for the semester will receive a grade of "F" for the course.** Under rare circumstances this policy may be waived by the Department Chair. In addition, I reserve the right to lower grades in lesser cases of poor attendance. You are responsible for all material covered in class or given for homework, independently of your attendance of a class. Attendance is essential and will be recorded!

Homework: After each class you will get a homework assignment. It will not be collected and graded, but must be completed and should prepare you for the quizzes. I cannot stress enough the importance of doing the homework. It is a critical factor in building and reinforcing your knowledge, as well as helping you identify your weak points.

Quizzes: Quite often at the beginning of class time there will be a short quiz, often unannounced in advance. This should keep you alert and following the material carefully, closely and timely.

Exams: There will be two longer exams throughout the semester. The first one will be given around the 5th week of classes and the second one around the 10th week.

Final Exam: There will be a cumulative final on **Friday, Dec. 15, 2023, 8:00-10:00 am.**

Evaluation: Quizzes will account for 15% of your grade, the two longer exams will account for 25% each, and the final exam will account for the remaining 35%.

Grades: The ranges for the grades are the following:

A-, A	90% and above	B-, B, B+	80% - 89%
C-, C, C+	70% - 79%	D, D+	60% - 69%

How to get help: You should come see me during my office hours, if you have difficulties with the subject matter. You can also get free tutoring at the Mathematics Achievement Center (MAC). It is a part of the Academic Success Center (ASC), which is located on the first floor of the E. J. Smith Library, Room 130. Please visit
https://www.easternct.edu/mathematical-sciences/mathematics-achievement-center.html
or call 465-0383 for the schedules of the MAC. If you feel you need help, do not wait until an exam is imminent.

Make-ups: There will be no make-ups for quizzes, since I will drop the lowest one (or, two). Make-ups for exams are strongly discouraged and might be allowed for truly exceptional reasons only, and with my prior permission.

Inclement weather: For cancellation of classes due to bad weather follow the messages on the university weather hot line at (860) 465-4444, or 1-800-578-1449, or visit the website
https://www.easternct.edu/easternalert/
Eastern uses also the local radio and TV station broadcasts to announce cancellations. If you are subscribed to Eastern Alert, you should also be notified via that channel, as well.

Weather Closing Policy: In the event of a delayed opening of the University, any class that would have at least 45 minutes of meeting time remaining after the announced opening time will meet starting at the announced opening time. Any class meeting that would have fewer than 45 minutes of meeting time after the announced opening time will not meet. For example, if opening the campus is delayed until 10 a.m., classes running from 9:30-10:45 a.m. would meet from 10-10:45 a.m.

In the event of an early closing of the University, any class that would have at least 45 minutes of meeting time prior to the announced closing time will meet until the announced closing time. Any class meeting that would have fewer than 45 minutes of meeting time before the announced closing time will not meet. For example, if we were to close the University early at 3 p.m., classes running from 2-3:15 p.m. would meet from 2-3 p.m.

Students with disabilities: Eastern Connecticut State University is committed to following the requirements of the Americans with Disabilities Act and Section 504 of the Rehabilitation Act. If you are a student with a disability (or think you may have a disability), and require adaptations or accommodations, or assistance evacuating a building in the case of an emergency, please contact the Office of AccessAbility Services (OAS) at 860-465-0189 to discuss your request further. Any student registered with the OAS should contact the instructor as

soon as possible for assistance with classroom accommodations. Please note that accommodations are not retroactive, and must be communicated through a Letter of Accommodation which is drafted by the OAS.

Classroom Etiquette: The use of cell phones, or headphones is inappropriate in class. Cell phones should be turned off (or on vibrate for emergencies) and stored off the class desk. No food is allowed during class.

COVID Related Provisions: Students are expected to adhere to current health and safety protocols (if any) implemented by Eastern.

Academic Misconduct: Students should read and understand Eastern's Academic Misconduct Policy, which can be found in the student handbook or at the following website:

https://www.easternct.edu/academic-misconduct/index.html

All violations will be handled under the procedures established in this policy.

Disclaimer: *The instructor reserves the right to make changes to this syllabus during the semester as necessary.*