APM 2663, Fall 2024
Updated August 28, 2024

- **Instructor:** Eddie Cheng, Office: 348 MSC, Tel: 370-4024, email:echeng@oakland.edu

- **Time and Place:** CRN 41289: Tuesday and Thursday, 5:30pm to 7:17pm, 120 Mathematics and Science Center (MSC).

- **Text:** *Discrete Mathematics: An Introduction to Concepts, Methods, and Applications* by Grossman, published by Pearson. ISBN-13: 978-0023483318

- **Supplementary Text:** *Student Solutions Manual, Discrete Mathematics: An Introduction to Concepts, Methods, and Applications* by Grossman, published by Pearson. (Optional.)

- **Prerequisite:** MTH 1555 with a grade of C or better, or its equivalent.

- **Office hours:** By appointment. Contact me to find an available time that is best for you, the following time slot is almost always available: TuTh 2:30pm–3:30pm.)

- **Syllabus:** abridged version of 1.1–1.3 and selected topics from 2.1–2.3, 3.1–3.4, 4.1–4.3, 5.1–5.3, 6.1–6.3, 7.1,7.4, 8.1–8.5, 9.1–9.2, 10.1–10.2, Travelling Salesman Problem and the spanning tree heuristics (if time permits), deletion and contraction algorithm for coloring (if time permits).

- **Website:** Schedule of lectures and information on relevant exercises are available at following address (updated on a continuous basis):
  https://sites.google.com/a/oakland.edu/echeng/home/teaching/apm2663.

- **Course objective:** To provide a thorough discussion of various proof techniques via various topics in discrete mathematics such as enumeration and graph theory. The learning outcomes for this course are (1) for you to be able to write proofs and (2) for you to learn the necessary material to take courses in theoretical computer sciences and advanced mathematics.

- **Lectures:** This is an on-campus class. Under special circumstances, recorded lectures may be used as a replacement of or as a supplement to the lectures. Lectures may be recorded using Panopto (integrated with Moodle) if bandwidth and technology permit, and if it does not negatively affect the attendance rate. So do not count on the recordings if you cannot attend the lectures.

- **Technology:** In general, you are required to submit your work in pdf format via Moodle. You need to have a mechanism to scan your work into a single pdf file. (Note that there are free apps available for you to scan papers into a pdf file using

your phone. For example, CamScanner and Abode Scan.) Please note that although you will take assessments such as tests and exams in class, you need to submit the scanned pdf file of your solutions to Moodle using a smart phone. If you do not have a smart phone, please contact me by September 12 to make alternate arrangements.

THIS COURSE HAS PROOFS.

There will be two quizzes, one technology evaluation, two tests during the term and a final exam at the end of the term. Each quiz is worth 2% of your final grade, the technology evaluation is worth 2% of your final grade, each term test is worth 27% of your final grade, and the final exam is worth 40%. The quizzes are open-book assessments which you will complete at home. The technology evaluation, the terms tests and the final exam are closed-book on-campus assessments. The sample test (with solutions) for each test will be handed out in advance. Your OU letter grade will be assigned according to the following conversion table where the first column corresponds to ranges of the overall percentages from the quizzes, the tests and the exam. (I reserve the right to adjust your final grade but such an adjustment will only be an upward adjustment.)

$[95, 100]$	A
$[90, 95)$	A−
$[85, 90)$	B+
$[80, 85)$	B
$[75, 80)$	B−
$[70, 75)$	C+
$[65, 70)$	C
$[60, 65)$	C−
$[55, 60)$	D+
$[50, 55)$	D
$[0, 50)$	F

Important Information:

- The sample tests are not study guides. You should use them to test your understanding of the material rather than use them to guess which sections are more important. It is important to understand all the covered material.

- If you answer a question (in class participation) correctly, you will be given a bonus check mark. These bonus check marks will convert into a bonus at the end of the semester. The person with the most bonus check marks will receive a 2 percentage points grade boost. Each student will receive a grade boost at least proportional to this maximum based on the number of bonus check marks.

- Cheating is a serious academic offense. Oakland University policy requires that all suspected instances of cheating be reported to the Office of Dean of Students. Anyone found responsible of cheating in this course will receive a course grade of F, in addition to any penalty assigned by the Academic Conduct Committee. Handing in written work that has essentially been copied from someone else is cheating. Receiving help from someone else or from unauthorized written material during a quiz, test, or final exam is also cheating, as is using a calculator as an electronic "crib sheet." I have forwarded cases to the Office of Dean of Students/the Academic Conduct Committee before and I will not hesitate to do this again if I suspect academic misconduct has occurred.

- The policy for university excused absences applies to any student participating in a university sponsored event as an official representative of Oakland University. Please see https://oakland.edu/provost/administrative-policies/ for additional information. Other types of absences will be handled on a case-by-case basis.

- Oakland University has a number of polices and offices/support centers for various issues. Some examples are Academic Success Center (x4215), Disability Support Services (x3266), Diversity, Equality and Inclusion (x3496), Veterans Support Services (x2010), and OU Counseling Center (x3465).

- On the webpage, you will find a time table of lectures (updated regularly) and a set of relevant exercises. These are not homework assignments but you should work on them. These exercises do not include the more challenging exercises from the problem set in the text. Please talk to me for more information about these problems.

- On a quiz/test/exam, apart from multiple choice questions, to receive full credit for a question, you must provide all logical steps (like those in a typical solutions manual).

- Please note the dates of the all assessments to ensure that you can be there on these days (barring any unforeseen emergencies). If you will be away on official university business such as competing in athletic events on these days, you need to inform me within the first week of the semester (or within 3 days of knowledge of such events,

if the information is not available at the beginning of the semester) so that we can make arrangements. For example, the athletic office provides letters to be given to the instructors. If you require DSS accommodation, you need to inform me within 3 days of the issuance of the DSS accommodation letter by giving me the letter.

- The information in this handout is subject to change and/or update.
- If you have concerns regarding the grading policy, please contact me before September 10.
- Important dates: See https://oakland.edu/registrar/important-dates/
- Technology evaluation, September 19.
- Quiz 1: Due 9:00am on October 17.
- Test 1: October 31.
- Quiz 2: Due 9:00am on November 19.
- Test 2: November 26.
- Exam: 7:00pm to 10:00pm on December 10.