

Welcome to Math 330 Discrete Math – Winter 2016
9:00 - 9:50 M-F in Black 202-01

Instructor: Dr. Jean Marie Linhart

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Webpages: (course) <http://canvas.cwu.edu>
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Office Hours: MWTh 3-3:50 pm
and by appointment.

Text: *Mathematics for Computer Science*, by Eric Lehman, F. Thomson Leighton, Albert R. Meyer, available freely on the web at <http://webwork.math.cwu.edu/~montgomery/143/330/2013.pdf> as well as on Canvas. You may notice that one of the authors of this book, F. Thomson Leighton, is CEO Akamai Technologies, and Eric Lehman is a software engineer at Google – they are doing their best to present ideas that will be of use to you later. I have enjoyed reading this book; it has a lot of subtle humor woven into the technical information. That said, you may need to use resources such as Khan Academy online in addition to the textbook to learn the material.

This syllabus is subject to modification. Students will be notified of changes in class and on Canvas.

Course Goals: Math 330 is a course in the mathematics behind computer science concepts and applications. Mastery of college algebra is required for success in this course. This course is meant to familiarize you with mathematics foundational to computer science such as the logic rules you learned in Math 260, and math that is used to analyze algorithms, such as recurrence relations and counting arguments, and math in computer science applications, such as applications of graph theory. Understanding why things work, and being able to explain your logic is as or more important than getting the correct answer. Abstract thinking, good writing skills, logic and (un)common sense are required for success.

This course will cover the following topics:

- I. Counting, Cardinality and Combinatorics (Chapter 14)
- II. Recurrence relations (handout, chapter 6)
- III. Induction Proofs (chapter 5, based on chapters 1-4)
- IV. Number Theory (chapter 8)
- V. Graph Theory (chapter 11, 9)
- VI. Networks (chapter 10)

It is my hope that this course is a step in your preparation for a successful career. The behavior and standards expected of a professional in the work place are what you should aim for in all aspects of work, attendance, and preparation for this course.

Grades/Exams/Homework

Grades

We will be using Standards Based Grading this quarter in discrete Math, which means that the course is broken down into standards, or key learning areas, and student's must demonstrate their competency on the standards to get a *C*, *B* or *A* for the course. Students may retest on the standards if their first attempt was not successful.

I have a list of 21 standards (including attendance and homework) on Canvas for this course, with 8 identified as key areas. Standards will be graded with an *A* (4, excellent) or *B* (3, very good) or Not Yet (*NY*) passed. Attendance and homework are both standards for the class.

To get a *C* in the course, a student must pass 11 standards, including all 8 key standards.

To get a *B* in the course, a student must pass 13 standards, including all 8 key standards, with at least 6 evaluated as an *A*.

To get an *A* in the course, a student must pass 15 standards, including all 8 key standards, with at least 10 evaluated as an *A*.

Other grades will be assigned based on this standard as logically as possible. Modifications may be made to this grading scheme to the benefit of the students.

Because of privacy rights, I do not discuss grades over email or telephone.

Standards Based Grading and Standards Testing

There will be at least one opportunity to test against a standard every week of class, and three days during the quarter that are devoted to testing. Additionally, students may request to retest on up to two test-based standards weekly either during office hours or by appointment. In order to take a re-test during office hours, students must also submit or show practice that has been done to master the given standard. The **last** opportunity to test is during the final exam period for our class.

- You may retest on up to two test-based standards during office hours or by appointment every week.
- You must be able to show evidence that you have been practicing problems based on the standard retested in order to retest during office hours.
- You may retest up to twice on a given test-based standard. After the third unsuccessful attempt, you must meet with me to formulate a plan before being allowed to take another test on that topic.

Attendance

Regular attendance, as is required for any job or area of endeavor, is one of the standards for the class. A student is tardy if they arrive after the beginning of class (9 am) but before 9:06 am. An *A* rating for attendance requires no more than two unexcused absences, and no more than two days tardy. A *B* rating requires no more than 4 unexcused absences and no more than four days tardy.

Excused absences will be handled on a case-by-case basis. If you must be out of class for a field trip, court date, work event or other planned event, contact me and provide documentation ahead of time. If you are absent due to illness or emergency, contact me and provide documentation within 2 working days of the absence.

Students are responsible for all material presented in class. If you miss a day, get notes from a classmate.

Homework

Completing required practice carefully and thoroughly is also a standard for the course. Homework will be assigned with regular due dates and will be scored as *A*, *B*, and *NY*. Solution keys for homework will be available in office hours and possibly also posted to Canvas; students are responsible for checking the correctness of their solutions themselves. The instructor will mark each homework *A*, *B*, or *NY* based on the completeness and quality of the work presented. 85% of homework must be completed with an *A* for an *A* to be given on the homework standard. 75% of homework must be completed with a *B* for a *B* to be given on the homework standard. One homework will be accepted up to one class day late, no questions asked.

Academic Integrity

You are expected to do your own work. While you are welcome to use outside resources and consult with others on all work taken home, you are subject to the requirement that what you hand in should, in fact, represent your own understanding of the material and not work copied or memorized from another source. See my [guide to group work and using outside resources](http://www.cwu.edu/math/group-work-and-using-outside-resources), <http://www.cwu.edu/math/group-work-and-using-outside-resources>, on the web.

All in-class work and tests are expected to be done without any resources except those explicitly authorized by the instructor. Exams and quizzes are not to be discussed with others who may not yet have taken the exam or quiz or within earshot of anyone who may be taking the exam or quiz at a later time. Note that I have two sections of this course, and so it is entirely possible for someone to be taking an exam at a later time than you are.

If a paper or report is assigned, students are expected to conform to academic standards for citing summarized, paraphrased and quoted work used; if you are not sure what this means, please **ask**.

Cheating will result in at minimum a zero on the assignment, quiz or exam. Cheating will be reported to the office of student conduct. Egregious offenses may result in a failing grade for the course and/or more serious consequences as merited by the situation.

Students with Disabilities

I am happy to work with students with disabilities. To set up academic adjustments in this class, you should give me or email me a copy of your *Confirmation of Eligibility for Academic Adjustments* from the Disability Support Services Office. **You must also come see me in office hours or make an**

appointment to come see me as soon as possible so we can discuss how the approved adjustments will be implemented in this class. Students without this form should contact the Disability Support Services Office, Bouillon 140 or dssreceipt@cwu.edu or (509) 963-2171. **Testing requests with testing services must be submitted at least 48 hours before an exam is given, or you may have to take the exam with the rest of the class.**

Important Dates

January 5 – classes begin

January 8 – self-study day

January 11 – last day for add/drop

January 29 – (tentative) Testing Day

February 15 – President's Day (no class)

February 19 – (tentative) Testing Day

March 4 – (tentative) Testing Day

March 14 – Final Exam 8 am