

Instructor : Aaron Montgomery
Class : M–F @ 8, 9 in Hertz 118
Office Hours : M–F @ 10, TWR @ 11 in Bouillon 107F
Email : montgoaa@cwu.edu **Phone** : 963-1906
Text : **Mathematics for Computer Science**
 : by Lehman, Leighton, Meyer (online)
Web : <http://webwork.math.cwu.edu/~montgomery/173/330/>

Textbooks:

Almost everything we will cover is in the textbook above. Various versions of this are available online as PDF files and one is at the course website. Versions without Meyer as an author are shorter and less formal. Other texts available that cover this material include:

- **Combinatorics** by Brualdi
- **Combinatorics and Graph Theory** by Harris, Hirst, and Mosshinghoff
- **Discrete Mathematics and Its Applications** by Rosen
- **Concrete Mathematics** by Graham, Knuth, Patashnik

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 (Chapter 6)
- III. Induction Proofs (Chapter 5, based on Chapters 1-4)
- IV. Number Theory (Chapter 8)
- V. Graph Theory (Chapter 9, 11)
- VI. Networks (Chapter 10)

Grades:

We will be using Standards Based Grading 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.

There are 19 standards for this course, with 8 identified as key (required) areas. Standards will be graded with an *A* (4, excellent) or *B* (3, very good) or Not Yet (*NY*, 0) passed.

To get a *C* in the course, a student must pass 10 standards, including all 8 key standards, and obtain a 75% or better score on homework and reading assignments.

To get a *B* in the course, a student must pass 13 standards, including all 8 key standards, with at least 8 evaluated as an *A*, and obtain a 75% or better score on homework and reading assignments.

To get an *A* in the course, a student must pass 16 standards, including all 8 key standards, with at least 11 evaluated as an *A*, and obtain 85% or better score on homework and reading assignments.

Homework

Computation oriented homework is assigned through WeBWorK (link on the website). You are allowed an unlimited number of attempts on this homework.

Non-computation homework is posted at the website, there will be three versions and each will be graded at most once.

Tests

There will be approximately nine class days during the quarter that are devoted to testing (see the website).

On testing days the first evaluations given to a student will be the oldest required evaluations. Once those are complete, students may use the remaining time to test and pass other evaluations.

On challenging material, students should expect to test during office hours or by appointment.

You may retest on a required standard up to 5 times (6 total tries). You may retest on an optional standard up to 3 times (4 total tries).

I will require you to resubmit the homework before attempting the test a third time or a fifth time. The last opportunities to test are Friday of the last week of the quarter and, after that, during the final exam period for either the 8 am or the 9 am class.

Accommodations

Central Washington University is committed to creating a learning environment that meets the needs of its diverse student body. Students with disabilities should contact Disability Services to discuss a range of options to removing barriers, including accommodations. Disability Services is located in Hogue 126. Call (509) 963-2214 or email ds@cwu.edu for more information.