

Math 130 Finite Mathematics

Instructor: Dr. Yvonne Chueh, Ph.D., ASA, MAAA

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Office Hours: 10:00 to 10:50 am M-F, and by appointment.

Students can also catch me whenever my office is open! Check out

<http://www.cwu.edu/~chueh> for my current daily schedule.

Students are encouraged to use Math Center for free tutoring service in Hertz 104.

Course goals: This course is designed to help students become capable of critical thinking, master the basic principles of counting and probabilities, and apply the necessary techniques to quantitative decision makings.

Course description: This course meets General Education "Basic Skills (D)" requirement and prepares student for introductory statistics courses in various departments. It covers the language of sets, counting procedures, introductory probability, decision-making, and introductory descriptive statistics.

Required Text: Bill Owen and Fred Cutlip, *Finite Mathematics: Introductory Probability and Statistics*, Thomson Learning

Calculator: A calculator with scientific functions is needed in class and writing tests. **TI-83 Plus** graphing calculator is advised to have and demonstrated.

Course outlines:

- Introductory counting and probability
- More counting and probability including conditional probability, independence, Bayes' theorem
- Random variables and probability distributions
- Introductory statistics
- Games and decisions (optional, depending upon the class progress)

Homework: Homework problems are directly from the textbook. They will NOT be collected but some will be discussed and solved in class. Odd numbered exercises will form the basis of the quizzes and tests. Similar problems will be explained and solved in class. You are encouraged to solve the homework problems with classmates after each lecture.

Quizzes: The quizzes will be given in class during class period. They are typically pop quizzes consisting of two or three short questions covered on the same day or in the week. Based on the past experience, most students benefit from the quizzes for their overall grade and learning opportunities.

Tests: There will be FOUR tests. Students can drop ONE lowest test score for grade. **Students must not drop the final exam.**

Final Exam: Final exam is accumulative and **required** for passing the course.

Grading: Your course grade will be the **better** grade of the following two schemes:

Scheme A: (All quizzes are counted. Can drop two quizzes)

1. **In-class worksheets and Quizzes: 150 points.**
2. **The three tests you decide to keep: 300 points**
3. **A comprehensive final exam: 100 points.**

Scheme B: (No quiz/worksheet is counted.)

1. **The three tests you decide to keep: 300 points**
2. **A comprehensive final exam: 250 points.**

A perfect score based on the above two schemes will result in a total of 500 points for both Scheme A and Scheme B. Your course grade will be determined by the HIGHER percentage **p** of these points you earn, according the following scale.

93<p	A	74<p<76	C
90<p<93	A-	70<p<74	C-
86<p<90	B+	65<p<70	D+
84<p<86	B	58<p<65	D
80<p<84	B-	p<58	F
76<p<80	C+		

Note: NO make up test will be given unless for medical or emergency reasons with written proof. Absolutely NO make up quiz can be arranged due to the timely nature and fairness of quiz. Students **must** take the final exam to pass the course.

Students with disabilities: If you require accommodation based on a documented disability, have emergency medical information to share, or need special arrangements in case of emergency evacuation; please discuss the situation with me as soon as possible.

SCHEDULE OF CLASS TOPICS AND ASSIGNMENTS

Topic coverage and test schedule are presented below. In order to perform well in this class, **preliminary textbook reading** before each class and reviewing class notes throughout the entire quarter is necessary. Students are advised to complete the homework assignments soon after the each topic is covered. Homework assignments are all the even-numbered textbook exercises.

Week

Textbook Sections to be covered

Topics

1. 6.1~6.2

2. 6.3~6.6

3. 6.7

Test 1 (Covering Chapter 6)

4. 7.1~7.4

5. **Review**
Test 2 (Covering Chapter 7)

6. 8.1~8.4

7. **Review**
Test 3 (Covering Chapter 8)

8. 9.1~9.4

Review

Counting and Probability:

- Sorting a population
- Counting principle

- Probability
- Experiments
- Rules
- Equally likely prob.

- Relative frequency
- Subjective prob.

More counting and prob.

- Counts
- Variation on counting
- Conditional prob.
- Multiplicative Rule
- Tree
- Independence

Random variables and prob. dist.

- Random variables
- Dispersion of r.v.
- Binomial dist.

Statistics

- Graphical
- Numerical
- Relative standing

9. **Test 4 (Covering Chapter 9 and normal distribution)**
8.5~8.6 **Normal distributions**
- Density curves
 - Applications
10. **Review**
Final Exam
Date to be announced

IMPORTANT NOTE

If you have a severe respiratory or influenza-like illness (ILI) (high fever, aches, chills, cough) you should not come to class until you are without fever for 24 hours without the aid of fever-reducing medication. If your absences are related to a severe respiratory or flu-like illness, you will be given the opportunity to make up your assignments and class content without penalty. It is YOUR responsibility to notify your instructor, **in advance**, when absent due to H1N1. Faculty is under no obligation to excuse class absences **related to sickness**. If you are pregnant, work with your instructor to prevent exposure to H1N1. You should utilize the following precautions to prevent H1N1 exposure: 1) Frequent hand washing and carry a bottle of alcohol-based hand sanitizer with you at all times. 2) Cough etiquette (grab your shoulder and cough into your elbow). 3) Place used tissues immediately in the trash, followed by washing your hands. 4) Use CDC-approved disinfectants on shared surfaces such as doorknobs, desks, etc. 4) **Stay home if you have a severe respiratory or flu-like illness**. If you are concerned you may have H1N1, notify student health.

Plan for potential absences and assure you have access to the Internet to send me e-mail (Chueh@cwu.edu) and my webpage (<http://www.cwu.edu/~chueh>) for assignments. **Regardless of your H1N1 flu status, you MUST complete the requirements of the course to receive a passing grade.**

Please check the CWU H1N1 Web page located on CWU's homepage or at www.cwu.edu/~police/emergency/h1n1.html for more information.