

# Math 130 Finite Mathematics

Winter 2009

**Time and Location:** M-F 1:00-1:50 Hertz Hall 122

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

**Office and Contact:** Bouillon 107G, Phone: 963-2124, e-mail: [chueh@cwu.edu](mailto:chueh@cwu.edu)

**Office Hours:** 10:00 to 11:50 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 offered on campus for extended hours.

**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 recommended 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 are given in the following “**SCHEDULE OF CLASS TOPICS AND ASSIGNMENTS**”. They will NOT be collected but some will be discussed and solved in class. The assigned problems 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 outside the class or seek help from me.

**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 at most)

1. **In-class worksheets and Quizzes: 100 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: 200 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.

<u>Week and dates</u>	<u>Textbook Sections to be covered</u>	<u>Topics</u>
<b>1.</b> 1/6-1/9	6.1~6.2	<b>Counting and Probability:</b> <ul style="list-style-type: none"> <li>▪ Sorting a population</li> <li>▪ Counting principle</li> </ul>
<b>2.</b> 1/12-1/16	6.3~6.6	<ul style="list-style-type: none"> <li>▪ Probability</li> <li>▪ Experiments</li> <li>▪ Rules</li> <li>▪ Equally likely prob.</li> </ul>
<b>3.</b> 1/19-1/23	6.7	<ul style="list-style-type: none"> <li>▪ Relative frequency</li> <li>▪ Subjective prob.</li> </ul>
<b>Test 1 (Covering Chapter 6)</b>		
<b>4.</b> 1/26-1/30	7.1~7.4	<b>More counting and prob.</b> <ul style="list-style-type: none"> <li>▪ Counts</li> <li>▪ Variation on counting</li> <li>▪ Conditional prob.</li> <li>▪ Multiplicative Rule</li> <li>▪ Tree</li> </ul>

**5.**  
2/2-2/6

- Independence

**Review**

**Test 2 (Covering Chapter 7)**

**6.**  
2/9-2/13

8.1~8.4

**Random variables and  
prob. dist.**

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

**7.**  
2/16-2/20

**Review**

**Test 3 (Covering Chapter 8)**

**8.**  
2/23-2/27

9.1~9.4

**Statistics**

- Graphical
- Numerical
- Relative standing

**Review**

**9.**  
3/2-3/6

**Test 4 (Covering Chapter 9)**

8.5~8.6

**Normal distributions**

- Density curves
- Applications

**10.**  
3/9-3/13

**Review**

**11.**  
3/16-3/20

**Final Exam**

Date to be announced