

**University of Texas at El Paso**  
**College of Science**  
**Department of Mathematics**

**Course Number:** MATH 1320

**Course Title:** Mathematics for the Social Science I

**Credit Hours:** 3

**Term:** Fall 09

**Course Meeting Time and Location:**

- Section 13906, meeting MWF 11:30 – 12:20, LART 209
- Sections 13907 and 16592, meeting MWF 12:30 – 13:20, LART 206
- Sections 13137 and 16593, meeting TR 9:00 - 10:20, LART 208
- Sections 13138 and 16594, meeting TR 12:00-13:20, LART 206

**Prerequisites:**

Students who scored 35-50 on the AccuPlacer Math Test, and who have not passed Math 0311 with a C or better, are permitted to enroll in Math 1320, if they are concurrently enrolled in an associated Math 0120 support lab. Attendance in Math 0120 is required. Students who either withdraw from the lab or are withdrawn by a Math 0120 instructor may also be withdrawn from this course.

**Instructor:** Fan Chen

**Office Location:** CRBL 404A

**Contact Info:** [fchen2@utep.edu](mailto:fchen2@utep.edu)

**Office Hours:** TR 10:30-11:30 or by appointment

**Text and Materials:**

Text: Finite Mathematics & Applied Calculus by Waner and Costenoble, 4th Edition.  
The nine-chapter single edition is for Math 1320 only.

The fourteen-chapter combined edition is for students that will take both Math 1320 and Math 2301.

The text can also be bought, chapter by chapter, here: <http://www.ichapters.com/>  
(Type “Waner, Costenoble” in the Basic Search.)

Required Technology: a WebAssign account.

WebAssign: <http://www.webassign.net/>. When first signing onto WebAssign, click on the red “Log In” button on the left hand side of the page.

Username: last name.first name.middle initial.  
Institution: utep  
Password: fall09

### **Catalog Description:**

Math 1320 is a precalculus course for liberal arts, business, and other nonscience majors.

The topics covered include:

- \* Linear, quadratic, exponential and logarithmic functions;
- \* Systems of linear equations;
- \* Matrix algebra
- \* The mathematics of finance;
- \* The algebra of sets; and
- \* Probability.

Students will learn mathematical concepts and methods used in management, social science, and business. Students will develop the view that mathematics is an evolving discipline that is interrelated with human culture. Students will also understand the connections of mathematics to other disciplines.

### **Course Objectives:**

#### 1. Linear Functions:

- \* Calculate the slope of a line; graph a line; find the equation of a line.
- \* Use linear concepts in a business context (eg: supply/demand and break-even analysis).
- \* Understand the concept of linear regression and use MS Excel to apply it to real-world data to make predictions.

#### 2. Nonlinear Functions:

- \* Calculate the difference quotient using a nonlinear function.
- \* Read information from graphs and sketch graphs of nonlinear functions.
- \* Identify the vertex of a parabola as the maximum or minimum of a quadratic formula and apply this concept to real-world problems (eg: maximize the profit and minimize the cost).
- \* Solve exponential and logarithmic equations.
- \* Construct exponential models in applications problems (eg: radioactive decay and bacteria population growth).
- \* Understand the concept of quadratic and exponential regression and use MS Excel to apply it to real-world data to make predictions.

#### 3. Linear Systems of Equations:

- \* Use substitution and elimination to solve systems with two equations.
- \* Use the method of Gaussian elimination to solve systems with three equations by hand.
- \* Use technology (MS Excel or graphing calculators) to solve systems.
- \* Solve real-world problems involving systems of equations.

4. Financial Mathematics
  - \* Solve applications problems using simple interest and compound interest.
  - \* Find the present value of or payments made on an annuity or loan.
  - \* Find the future value of or payments made into a sinking fund.
  - \* Use technology to solve financial math problems.
5. Sets and Operations
  - \* Find the union, intersection, complement, and Cartesian product of sets. Also, find the cardinality of these.
  - \* Draw Venn diagrams from real-world data.
  - \* Do applications-based problems involving: the addition principle, the multiplication principle, permutations, and combinations.
6. Probability
  - \* Identify the sample space of an experiment.
  - \* Understand the properties of a probability distribution.
  - \* Be able to solve probability (including conditional probability) problems.

**Attendance Policy:**

As with every college course, attendance is essential for success. Although there are many online resources used in Math 1320, this is not an online course. Please do not miss class unless absolutely necessary.

**Grading Scale**

<u>Average Grade</u>	<u>Letter Grade</u>
90 – 100%	A
80 - 89 %	B
70 - 79%	C
60 - 69%	D
0 - 59% or cheating	F

**Course Requirements:**

**Exams**(weights 50%): Three exams are given. There are no retest or make-up exams. There are no extra credit assignments. Each exam will count 100 points with the lowest grade of the unit exams to be replaced by the final exam grade, if it is to the student’s advantage. Each student is required to take all the four exams and the final exam. The final grade for the course will be assigned according to the scale.

**Final Exam** (weights  $\frac{2}{3}$  ) The comprehensive final exam will be given on

- Section 13906 meeting MWF, 10:30 - 12:00, Dec. 7<sup>th</sup>, Monday
- Sections 13907 and 16592 meeting MWF, 12:00 – 13:30, Dec. 7<sup>th</sup>, Monday
- Sections 13137 and 16593 meeting TR, 9:00 – 10:30, Dec. 8<sup>th</sup>, Tuesday

Sections 13138 and 16594 meeting TR, 12:00 – 12:30, Dec. 8<sup>th</sup>, Tuesday

**Bonus Test-Out Exam:** For students who earn either a D or F after taking the final, an optional Test-Out Exam may be taken on December 10<sup>th</sup>. The test is a WebAssign exam that must be taken in the Thursday, December 10<sup>th</sup>, 2009, Room will be announced, with a start time between the hours of 9AM and 3PM. Students will be allowed 3 hours to complete the exam. A passing score of 70% or above will result in a grade change to a C in the course. This is a bonus exam, and the date and time offered cannot be changed. More information about this exam will be emailed to the students during the semester.

**Homework** (weights  $16\frac{2}{3}\%$ ) : Homework grade will be worth the same amount as an exam (100 points) and will be included when computing the final grade for this course. Late homework will not be accepted.

Our homework will be done online, through [www.webassign.net](http://www.webassign.net).

**Quizzes** (weights  $16\frac{2}{3}\%$ ) : There will be pop homework quizzes during the semester. There is no make-up quiz. Quiz grade will be worth the same amount as an exam (100 points) and will be included when computing the final grade for this course.

### **Electronic and Wireless Devices:**

Please do not use cell phones, pagers, iPods, MP3 players, blue tooth devices, etc. during class. Cell phones and pagers should be set to silent or vibrate, and any calls should be taken outside of class. Please do not wear headsets or blue tooth devices during class. Cell phone calculators may not be used on quizzes or exams.

### **Drop Deadlines:**

It is the student's responsibility to attend class as per the schedule. It is also the student's responsibility to withdraw from the course for whatever reason. The instructor assumes no responsibility for student withdrawal from the course or for the completion of student's course work.

The last day to drop the course without a "W" is Sept. 9<sup>th</sup>, 2009.

The last day to drop the course with a "W" is Oct. 30<sup>th</sup>, 2009.

### **Tutoring:**

Online tutorials can be found here: <http://www.zweigmedia.com/UTEPMath...> Click on the link to the "Fourth Edition Student Website." MS Excel worksheets and tutorials are available here: <http://www.math.utep.edu/classes/math1320/>. Free tutoring is offered on the second floor of the campus Library. There are numerous private tutors available. Please also make use of the instructor's office hours.

Selected Solutions to the Text: Selected answers to mostly-odd problems can be found here: [http://custom.cengage.com/static\\_content/temp\\_websites/0495461342/](http://custom.cengage.com/static_content/temp_websites/0495461342/)

**Academic Dishonesty:**

Any form of scholastic dishonesty is an affront to the pursuit of knowledge and jeopardizes the quality of the degree awarded to all graduates of UTEP. Any student who commits an act of scholastic dishonesty is subject to discipline. Scholastic dishonesty includes, but is not limited to cheating, plagiarism, collusion, submission for credit of any work or materials that are attributable in whole or in part to another person, taking an exam for another person, any act designed to give unfair advantage to a student, or the attempt to commit such acts. Proven violations of the detailed regulations, as printed in the Handbook of Operating Procedures and available in the Office of the Dean of Students, may result in sanctions ranging from disciplinary probation, to failing grades on the work in question, to failing grades in the course, to suspension or dismissal, among others.

**Military Students:**

If you are a military student with the potential of being called to military service and/or training during the semester, please contact me by the end of the first week of class.

**Students with Disabilities:**

If a student has or suspects he/she has a disability and needs an accommodation, he/she should contact the Disabled Student Services Office (DSSO) at 747-5148 or at <dss@utep.edu> or go to Room 106 Union East Building. The student is responsible for presenting to the instructor any DSS accommodation letters and instructions.

## MATH 1320 CALENDAR

Week	Dates	Sections	Covered Events
1	8/24 – 8/28	1.1 1.2 1.3	Functions – Algebraic Viewpoint Functions – Graphical Viewpoint Linear Equations
2	8/31 – 9/4	1.3 1.4 1.5	Linear Equations (Continued) Linear Models Linear Regression
3	9/7 – 9/11	1.5 9.1	Linear Regression (Continued) Quadratic Functions & Models
<b>9/7 Labor Day, No Class.</b>			
<b>9/9 Census Day</b> (last day to drop without W)			
4	9/14 – 9/18	9.2	Review (If time allows) Exponential Functions <b>Exam #1</b>
5	9/21 – 9/25	9.2 9.3	Exponential Functions (Continued) Logarithmic Functions
6	9/28 – 10/2	2.1 2.2	Systems of 2 Eqns/2 Unknowns Using Matrices to Solve Systems
7	10/5 – 10/9	2.3 5.1	Applications of Systems of Eqns Simple Interest
8	10/12 – 10/16	5.2 5.3	Compound Interest Sinking Funds and Annuities
9	10/19 – 10/23	5.3	Annuities and Loans (Continued) Review (If time allows) <b>Exam #2</b>
10	10/26 – 10/30	6.1 6.2 6.3	Sets and Set Operations Cardinality Addition & Mult. Principles
<b>10/30 Drop Deadline</b>			
11	11/2 – 11/6	6.3 6.4	Addition & Mult. Principles (Continued) Permutation & Combinations
12	11/9 – 11/13	7.1 7.2	Sample Spaces & Events Est. & Theoretical Probabilities
13	11/16 – 11/20	7.3 7.4	Properties of Prob. Distributions Prob. & Counting Techniques
14	11/23 – 11/27	7.4 7.5	Prob. & Counting Techniques (Continued) Conditional Probability Review (If time allows)
<b>11/26 – 11/27 Thanksgiving Holiday, No Classes</b>			
15	11/30 – 12/4	7.6	Bayes' Theorem & Applications Review (If time allows) <b>Exam #3</b>

**12/4, Friday No Classes**

The Comprehensive Final will be given on

Section 13906 meeting MWF, 10:30 - 12:00, Dec. 7<sup>th</sup>, Monday

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