

**Linfield College**  
**Division of Continuing Education: Adult Degree Program**  
**Course Syllabus for MAT-150**

**Instructor: Dr. Gowri Meda**

Welcome to **Finite Mathematics with Calculus!!** Please read and understand this syllabus.

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**PART A**

**A1 . Course Number, Title, Credit hours:**

Course Title & Number:      MAT - 150 Finite Mathematics with Calculus - ONLINE Class  
Credit Hours:                      Five  
Term and year:                      Summer 2008 [June 16 to August 21]  
Classroom:                              Online

**A2. Instructor's Contact Information and Biography:**

***Emailing instructions:*** From the **Course Tools Menu**, click on **Mail**. Next, click on **Create**

**Message.** From the **Browse for Recipients list**, choose my name. Compose your message as usual and hit **Send** button.

**My online schedule:** I will reply to your messages on at least four days out of Monday through Friday and I would like to reserve Saturdays and Sundays for my family. However, if I am not out of town on weekends, I will try to reply to your messages. If you have a math question, then please post them in the "Ask Gowri" topic in the discussion area and I will respond to your math question in that same place. Please email to my personal inbox only if you have a non-math question that you want to discuss with me.

**My biography:** I am originally from India although I have been residing in the US for the last 17 years. After receiving my Ph.D. degree in mathematics in 1997 from Bryn Mawr College in Pennsylvania, I taught math full-time for five years. Since September 2002, I have been teaching math part-time at a community college and also part-time online classes at Linfield since September 2003. I enjoy teaching math and I am looking forward to working with you this semester. By the way, please call me by my first name: Gowri—"Gow" rhymes with "Cow" and "ri" rhymes with "be".

### **A3. Prerequisites for this Course:**

Successful completion of MAT 115 ( Intermediate Algebra) or equivalent.

### **A4. Required Text and Course Materials** (available at the bookstore):

**REQUIRED:** College Mathematics for Business, Economics, Life Sciences and Social Sciences, 11/E by Barnett, Ziegler, Byleen , Prentice Hall and accompanying CD lecture series and also the students solutions manual for this textbook.

### **A5. Course Content and Learning Objectives:**

**Course Content :** Review of algebra including equations, inequalities, functions, graphs, logarithmic and exponentials. Topics in finite mathematics including matrix algebra and linear programming. Introduction to differential calculus and its use in optimization.. Applications in business, economics, and the social and behavioral sciences.

#### **Learning Objectives:**

- Review how to solve linear equations and inequalities in one variable
- Review how to graph a linear equation in two variables and also how to obtain an equation of a line in slope-intercept form
- Solving a system of linear equations using augmented matrices
- Gauss-Jordan elimination
- Solving a system of linear inequalities in two variables
- Linear Programming in two dimensions
- Introduction to the notion and formal definition of a function
- Identify if a given graph or table specifies a function
- Evaluate a given function at a given value
- Find domain and range of function when presented by a graph or a table or an algebraic formula.

- Become familiar with the equations and graphs of several elementary functions
- Read-off slope and intercept of a linear function when presented algebraically
- Graph linear functions and quadratic functions
- Find coordinates of the vertex of the graph of quadratic function, when the function is presented algebraically by a formula
- Find the maximum or minimum (as appropriate) value of a quadratic function by first find the coordinates of the vertex of the corresponding parabola graph.
- Introduction to exponential and logarithmic functions and their applications
- Learn to interpret and use the graphs and formulas of exponential functions
- Learn to interpret and use the graphs and formulas of logarithmic functions
- Determine how to compute the growth time for an investment
- Learn how to find the average rate of change of a function
- Learn how to find the instantaneous rate of change of a function
- Compute derivatives of polynomial functions
- Compute derivatives using product and quotient rules and also chain rule
- Use marginal analysis in applications problems
- Use differential calculus in optimization problems

**A6. Pedagogical Approach:** In order to succeed in this online class, you must take on an *active role* in completing all the course objectives. The structure of an online class requires students to be very disciplined in their study habits. A successful student in an online environment must be willing and able to learn the material independently by reading the textbook, watching the text author's mini-lectures on the CD that accompanies the textbook, participating in "math conversations" in the discussions area (see A7 below where I provide details on this), practicing the exercises at the end of each section and checking their work with the student solution manual that accompanies the textbook. As an instructor in an online environment, I facilitate your learning by providing a weekly study-plan with readings and assignments to complete. I am available to answer your math questions in the online "discussions" area. However, in an online course, it is crucial that you develop the skills to learn the math content independently through reading the textbook. Since our math communications will be solely through discussion-area messages, you should be prepared to read my response-messages and learn math by understanding the math content of my messages.

Section A7 below provides you the specifics of classroom assessment. PART B of this syllabus lists the activities and assignments for each week. Each online week starts on a Monday and ends on the following Sunday. In this online environment, while you have the advantage of studying the material at a time of the day that fits your schedule, it is crucial that you understand that each week you will have a list assignments (textbook-readings, online quizzes and "math conversation" discussion area posts and also exams in some weeks) to complete and there is no flexibility in the due-dates of these assignments. Hence, be sure to read and understand the next two sections very carefully.

In this class you are advised to:

- complete all the activities and assignments on time as listed in the weekly study plan.
- Complete the online-quizzes/exams on time and follow all the rules that go with it.

In this class you can expect that I will:

- respond to your math-questions
- respond to messages sent to my “mail”
- actively manage this webpage

### **A7. Class assessment and Grading Scheme:**

Your course grade will be based on the following assessment areas. Please also see the next section “Grading Scheme” which explains how I will determine your Course-grade.

- **Weekly online math-conversations:** In the discussions area (located under "course tools"), you will notice there is a topic titled "math conversations". Each week in this topic, I will post a thread with a list of specific practice problems from the text. Each week by 10.00 pm on Thursday, every student is required to post at least two messages: (1) a complete solution to one practice problem (2) a comment on the accuracy of one posted solution by another student. The practice problems I choose will be similar to worked-out examples in the text.

The purpose of these "math conversations" are for students to interact with each other, help each other, and work together to solve math problems. I will only read messages in the "math conversation" topic, and will refrain from posting my responses.

Use the "Ask Gowri" topic if you need my comments or help on a specific math question

- **Weekly online quizzes:** Almost each week you will be required to take an online quiz online. Please see PART B of this syllabus to view in which of the weeks the quizzes take place. The weekly quiz will be available from 8:00am on Monday until 10.00 pm on Sunday of the week. You may take your quiz at any time during the available period but once you start an online quiz, you will have to finish it in within two hours.
- **EXAMS:** There will be three online exams: Exam-One, Exam-Two and a cumulative Final Exam. Please see PART B of this syllabus to view in which of the weeks each of these exams takes place. In the week that it is due, each exam will be available from 8:00am on Monday until 10.00 pm on Sunday of the week. You may take your EXAMS at any time during the available period but once you start an online EXAM, you will have to finish it in four hours.

**I will calculate your grade based on the following grading scheme**

Assessment Area	Maximum Points	Percent of Course-grade
Math Conversations	20	10 %
Six Weekly Online Quizzes	70	35 %
Exam One	35	17.5 %
Exam Two	35	17.5 %
Final Exam	40	20 %
<b>TOTAL</b>	<b>200</b>	<b>100 %</b>

**Total**

Grade	Percent	Point Equivalent
A	90-100%	180-200
B	80-89%	160-179
C	70-79%	140-159
D	60-69%	120-139
F	0-59%	0-119

**A8. Academic Honesty Policy :** Cheating and plagiarism will not be tolerated. Any student found to be engaging in either of these activities at any point in the course will receive a failing grade for the assignment and/or entire course and may be subject to further college sanctions.

**A9. Missed assignments/quizzes/exams policy:**

No make-ups are allowed for missed math-conversations or online quizzes/or online exams. If you have an emergency that does not allow you to take an online quiz or exam, contact me immediately or as soon as possible by Blackboard mail and before the exam/quiz due date. In such emergency situations, at my discretion, a make-up exam may be given to you (with possible penalty). It is your responsibility to plan your semester in a way that you will be able to complete quizzes, exams on time. Computer crashes and inability to access this class online will **not** be considered as valid reasons for make-up quizzes and exams and hence it is important that you have back-up plans so as to avoid such situations.

**A10. Disability Statement:** Students with documented disabilities who may need accommodations, who have any emergency medical information the instructor should know, should communicate with the instructor as early as possible, no later than the first week of classes.

**PART B**

This is a tentative calendar. I will post a note in the online "announcements" area if I ever have to make changes to the following.

**B1. Activities and assignments for the week of June 16-22**

**Reading activities**

- Textbook:
  - Basic algebra Review (Appendix A-page 903): A-1, A-2, A-3, A-4, A-5, A-5, A-6, A-7
  - Chapter 1: A Library of Elementary Functions - Sections 1-1, 1-2
  - Chapter 2: Functions and Graphs - Sections 2-1, 2-2, 2-3
- Download the handouts from " Week-one handouts and assignments" link available from the "Course Content" page.

**Assignments due** (See A7 for details.)

- **Quiz ONE** due 10:00 pm , Sunday.
- Math-conversations -two posts due 10:00 pm, Thursday

1.

## **B2. Activities and assignments for the week of June 23-29**

### **Reading activities**

- Textbook:
  - Chapter 2: Functions and Graphs- Sections 2-4, 2-5
  - Chapter 3: Mathematics of Finance - Sections 3-1, 3-2, 3-3, 3-4
- See "Week-two handouts and assignments" link

### **Assignments due**

- **Quiz TWO** due 10:00 pm , Sunday.
- Math-conversations -two posts due 10:00 pm, Thursday

## **B3. Activities and assignments for the week of June 30-July 6**

### **Reading activities**

- Textbook:
  - Chapter 4: Systems of Linear Equations; Matrices - Sections 4-1, 4-2, 4-3, 4-4, 4-5, 4-6, 4-7
- See "Week-three handouts and assignments" link

### **Assignments due**

- **Quiz THREE** due 10:00 pm , Sunday.
- Math-conversations -two posts due 10:00 pm, Thursday

## **B4. Activities and assignments for the week of July 7-13**

### **Reading activities**

- Textbook:
  - Chapter 5: Linear Inequalities and Linear Programming - Sections 5-1, 5-2, 5-3
- See Exam-One Review sheet and other handouts in "Week-four handouts and assignments" link

### **Assignments due**

- **EXAM ONE** due 10:00 pm , Sunday
- Math-conversations -two posts due 10:00 pm, Thursday

## B5. Activities and assignments for the week period of July 14-20

### Reading activities

- Textbook:
  - Chapter 6: Linear Programming: Simplex Method - Sections 6-1, 6-2, 6-3
  - Chapter 10: Limits and Derivatives - Sections 10-1, 10-2, 10-3
- See "Week-five handouts and assignments" link

### Assignments due .

- **Quiz FOUR** due 10:00 pm , Sunday.
- Math-conversations -two posts due 10:00 pm, Thursday

## B6. Activities and assignments for the week of July 21-27

### Reading activities

- Textbook:
  - Chapter 10: Limits and Derivatives - Sections 10-4, 10.5, 10.6, 10-7
  - Chapter 11: Additional Derivative Topics - Sections 11-1
- See "Week-six handouts and assignments" link

### Assignments due

- **Quiz FIVE** due 10:00 pm , Sunday.
- Math-conversations -two posts due 10:00 pm, Thursday

## B7. Activities and assignments for the week of July 28 - Aug 3

### Reading activities

- Textbook:
  - Chapter 11: Additional Derivative Topics - Sections 11-3, 11-4,11-5, 11-6
- See Exam-Two Review sheet and other handouts in "Week-seven handouts and assignments" link

### Assignments due

- **EXAM TWO** due 10:00 pm , Sunday
- Math-conversations -two posts due 10:00 pm, Thursday

## B8. Activities and assignments for the week of Aug 4 -10

### Reading activities

- Textbook: Chapter 9: The Derivative - Section 9-7

- Chapter 12: Graphing and Optimization - Sections 12-1, 12-2, 12-5, 12-6
- See "Week-eight handouts and assignments" link

### Assignments due

- **Quiz SIX** due 10:00 pm , Sunday
- Math-conversations -two posts due 10:00 pm, Thursday

## **B9. Activities and assignments for the week of Aug 11 -17**

### Reading activities

- See Final-Exam Review sheet a in "Week-nine handouts and assignments" link

### Assignments due

- **FINAL EXAM** due 10:00 pm , Sunday.