GE192
College Mathematics II
[Onsite]

Course Description:

This course will include, but is not limited to, the following concepts: exponential and logarithmic equations and functions, graphs of trigonometric functions, trigonometric equations, polar coordinates, oblique triangles, vectors and sequences.

Prerequisite(s) and/or Corequisite(s):

Prerequisite: GE127 College Mathematics I or equivalent

Credit hours: 4

Contact hours: 40 (40 Theory Hours)

SYLLABUS: College Mathematics II

Instructor: _____

Office hours: _____

Class hours: _____

MAJOR INSTRUCTIONAL AREAS

1. Trigonometric Functions
2. Additional Topics in Trigonometry
3. Exponential and Logarithmic Functions
4. Sequences and Probability

COURSE OBJECTIVES

1. Interpret the graphs of sine and cosine functions by constructing the graphs from their equations.
2. Evaluate the graphic characteristics of other trigonometric functions from their equations.
3. Perform operations using the properties of logarithmic functions.
4. Solve logarithmic and exponential equations.
5. Use the Law of Sines and the Law of Cosines to solve oblique triangle problems.
6. Solve problems involving complex numbers and polar coordinates.
7. Solve problems requiring the use of vectors.
8. Solve problems using sequences.
9. Solve problems involving counting, permutations, combinations, and/or probability.
10. Solve probability problems.
11. Use the ITT Tech Virtual Library to research selected topics.

Related SCANS Objectives

1. Process information and present it graphically using the computer.
2. Interpret information present in various forms (graphs, charts, and matrices).

TEACHING STRATEGIES

This course is the second quarter of the two-quarter College Math series. Students will build upon the basic concepts learned in College Math 1. Topics to be covered in this course include trigonometry, exponential and logarithmic functions, polar coordinates and complex numbers, vectors, sequences, and probability. The instructional methods used in this class include lectures, assigned homework, practice and graded quizzes, and a final exam. These methods are designed to help students apply the concepts they learn to solve problems. Subsequent courses on physics, electronics, and drafting will require skills in these areas.

COURSE RESOURCES

Student Textbook Package

The student textbook package for College Mathematics II is exactly the same as the package for the prerequisite course, College Mathematics I. Therefore, you will ***not*** *be issued a new package for this course.*

For both courses, the student package includes:

- Blitzer, Robert. *Algebra and Trigonometry. 4th ed. Upper Saddle River, NJ: Pearson Prentice Hall, 2010.*

References and Resources

- Other Resources
  - Book: Blitzer, Robert. *Student Solutions Algebra and Trigonometry. 4th ed. Upper Saddle River, NJ: Pearson Prentice Hall, 2010.*
  - Web site: Prentice Hall Companion Web site: http://www.prenhall.com/blitzer

All links to Web references outside of the ITT Tech Virtual Library are always subject to change without prior notice.

EVALUATION & GRADING

COURSE REQUIREMENTS

1. **Attendance and Participation**

   Regular attendance and participation are essential for satisfactory progress in this course.

2. **Completed Assignments**

   Each student is responsible for completing all assignments on time.

3. **Team Participation (if applicable)**

   Each student is responsible for participating in team assignments and for completing the delegated task. Each team member must honestly evaluate the contributions by all members of their respective teams.

Evaluation Criteria Table

The final grade will be based on the following weighted categories:

CATEGORY	WEIGHT
Participation	15%
Writing Assignments	30%
Quizzes	30%
Final Exam	25%
Total	**100%**

Grade Conversion Table

Final grades will be calculated from the percentages earned in class as follows:

Grade	Percentage	Credit
A	90-100%	4.0
B+	85-89%	3.5
B	80-84%	3.0
C+	75-79%	2.5
C	70-74%	2.0
D+	65-69%	1.5
D	60-64%	1.0
F	<60%	0.0

COURSE OUTLINE

- Unit 1: All the concepts will be covered in the class; therefore, the specified readings are merely for your reference.
- For all other units: It is recommended that you complete the readings before attending the class.
- In addition to general class participation and in-class activities, all discussion questions will be graded under the Participation evaluation category.

Unit	Activities for the Unit
1– Sinusoidal Functions	• Content Covered ○ Chapter 5, Section 5.5, "Graphs of Sine and Cosine Functions," pp. 536-557 • FDOC • Lecture Presentation • Ungraded In-class Problem-Solution Exercise • Graded Homework Assignment 1 • Ungraded Homework Assignment 2: Quiz

2–
 	
Graphs of Other Trigonometric Functions
	• Read from *Algebra and Trigonometry:*
	  ○ Chapter 5, Section 5.6, "Graphs of Other Trigonometric Functions," pp. 558-570
	  ○ Chapter 5, Section 5.7, "Inverse Trigonometric Functions" pp. 571-586
	  ○ Chapter 5, Section 5.8, "Applications of Trigonometric Functions," pp. 587-597
	• Discussion
	• Graded Quiz
	• Lecture Presentation
	• Ungraded In-class Problem-Solution Exercise
	• Graded Homework Assignment 1

Unit	Activities for the Unit
	• Ungraded Homework Assignment 2: Quiz

3–
 	
Logarithmic Functions
	• Read from *Algebra and Trigonometry:*
	  ○ Chapter 4, Section 4.1, “Exponential Functions,” pp. 412-424
	  ○ Chapter 4, Section 4.2, “Logarithmic Functions,” pp. 424-437
	  ○ Chapter 4, Section 4.3, “Properties of Logarithms,” pp. 437-446
	• Discussion
	• Graded Quiz
	• Lecture Presentation
	• Ungraded In-class Problem-Solution Exercise
	• Graded Homework Assignment 1
	• Ungraded Homework Assignment 2: Quiz

4–
 	
Exponential and Logarithmic Equations
	• Read from *Algebra and Trigonometry:*
	  ○ Chapter 4, Section 4.4, “Exponential and Logarithmic Equations,” pp. 447-460
	  ○ Chapter 4, Section 4.5, “Exponential Growth and Decay; Modeling Data,” pp. 460-473
	• Discussion
	• Graded Quiz
	• Lecture Presentation
	• Ungraded In-class Problem-Solution Exercise
	• Graded Homework Assignment 1

Unit	Activities for the Unit
	• Ungraded Homework Assignment 2: Quiz

5–
 	
Oblique Triangles, Laws of Sines and Cosines
	• Read from *Algebra and Trigonometry:*
	  ○ Chapter 7, Section 7.1, "The Law of Sines," pp. 664-675
	  ○ Chapter 7, Section 7.2, "The Law of Cosines," pp. 676-684
	• Discussion
	• Graded Quiz
	• Lecture Presentation
	• Ungraded In-class Problem-Solution Exercise
	• Graded Homework Assignment 1
	• Ungraded Homework Assignment 2: Quiz

6–
 	
Polar Coordinates and Complex Numbers
	• Read from *Algebra and Trigonometry:*
	  ○ Chapter 7, Section 7.3, "Polar Coordinates," pp. 684-695
	  ○ Chapter 7, Section 7.5, "Complex Numbers in Polar Form; DeMoivre's Theorem," pp. 706-718
	• Discussion
	• Graded Quiz
	• Lecture Presentation
	• Ungraded In-class Problem-Solution Exercise
	• Graded Homework Assignment 1
	• Ungraded Homework Assignment 2: Quiz

7– Vectors	• Read from *Algebra and Trigonometry:* ○ Chapter 7, Section 7.6, "Vectors," pp. 718-732

Unit	Activities for the Unit
	○ Chapter 7, Section 7.7, "The Dot Product," pp. 733-741 • Discussion • Graded Quiz • Lecture Presentation • Ungraded In-class Problem-Solution Exercise • Graded Homework Assignment 1 • Ungraded Homework Assignment 2: Quiz
8– Sequences and Series	• Read from *Algebra and Trigonometry:* ○ Chapter 11, Section 11.1, "Sequences and Summation Notation," pp. 968-978 ○ Chapter 11, Section 11.2, "Arithmetic Sequences," pp. 978-987 ○ Chapter 11, Section 11.3 "Geometric Sequences and Series," pp. 988-1002 • Discussion • Graded Quiz • Lecture Presentation • Ungraded In-class Problem-Solution Exercise • Graded Homework Assignment 1 • Ungraded Homework Assignment 2: Quiz
9– Counting Principles, Permutations, and	• Read from *Algebra and Trigonometry:* ○ Chapter 11, Section 11.6, "Counting Principles, Permutations, and Combinations," pp. 1019-1030

Unit	Activities for the Unit
Combinations	• Discussion • Graded Quiz • Lecture Presentation • Ungraded In-class Problem-Solution Exercise • Graded Homework Assignment 1 • Ungraded Homework Assignment 2: Quiz
10– Probability	• Read from *Algebra and Trigonometry:* o Chapter 11, Section 11.7, "Probability," pp. 1031-1044 • Discussion • Graded Quiz • Lecture Presentation • Ungraded In-class Problem-Solution Exercise • Graded Homework Assignment 1 • Ungraded Homework Assignment 2: Quiz
11– Review and Final Exam	• Review and Final Exam

(End of Syllabus)

