

## King Fahd University of Petroleum &amp; Minerals

## Prep-Year Math Program

**SYLLABUS**

## MATH 002 (063)

<b>Pre-Requisite</b>	MATH 001
<b>Textbook</b>	College Algebra with Trigonometry by Aufmann/Barker/Nation, 5 <sup>th</sup> Edition, Houghton Mifflin (2005)
<b>Objectives</b>	The students are expected to develop the comprehension of the course material in English, improve their computational skills and demonstrate writing ability of solutions with logical steps. An emphasis will be given to the understanding of the statement of problem and the mathematical terminology. The medium of instruction will be strictly English from the <u>first day of classes</u> . The course primarily aims at the development of critical thinking among the students through the mathematical concepts studied at the <u>High School level</u> . Word problems will be an important part of the course. MATH 001 will be regarded as a base of this course.

Week #	Date	Text Sections	Topic	Homework Problems
1	July 1 – 4	4.2	Exponential Functions and Their Applications	6,16,26,29,33,36,64
		4.3	Logarithmic Functions and Their Applications	6,20,30,36,44,46,56,57,68,79
		4.4	Logarithms and Logarithmic Scales	8,14,26,,32,36,37,42,44
		4.5	Exponential & Logarithmic Equations	6,16,20,28,30,32,34,38,42,46,77
	July 5	<b>Normal Saturday Classes</b>		
2	July 7 – 11	5.1	Angles and Arcs	6,10,18,20,26,36,44,50,58,61,70
		5.2	Trigonometric Functions of Acute Angles	12,14,16,18,34,42,61,75
		5.3	Trigonometric Functions of Any Angle	4,10,20,24,30,32,36,40,42,46,66,78,90
		5.4	Trigonometric Functions of Real Numbers	6,34,38,48,53,76,82,96,98,102,106
3	July 14 – 18	5.5	Graphs of Sine and Cosine Functions	8,15,34,50,54,58,62,78,84,
		5.6	Graph of Other Trigonometric Functions	4,14,18,28,36,44,52,54,56,58,70
		5.7	Graphing Techniques	4,12,19,21,32,43,44,53,60,80,88
<b>Major Exam I, Wednesday, July 18, 2007 [4.2 – 5.7]</b>				
4	July 21 – 25	6.1	Verification of Trigonometric Identities	4,8,14,25,33,43,56,66,76,82
		6.2	Sum, Difference and Co-function Identities	16,18,24,32,40,45,49,68,70,72,78,88
		6.3	Double and Half Angle Identities	6,22,30,40,,46,56,64,79,90,102,106
		6.4*	Only Functions of the form: $f(x) = a \sin x + b \cos x$	54,64,74,76,88,97,
5	July 28 – Aug. 1	6.5	Inverse Trigonometric Functions	4,12,20,26,32,36,50,56,60,66,70,74,78,9 8,102
		6.6	Trigonometric Equations	6,8,18,22,42,49,54,64,68,70,79,83, 106,111
		7.3	Vectors	4,12,16,22,26,32,38
		8.1	Parabolas	12,14,16,28,30,33,50,52,56
6	Aug. 4 – Aug. 8	8.2	Ellipses	10,28,32,34,36,40,42,46,50,52,74
		8.3	Hyperbolas	12,16,22,24,32,36,40,44,48,52,64,68,70
		9.1	Systems of Linear Equations in Two Variables	8,18,22,30,40,44,66,70
<b>Major Exam II, Wednesday, Aug. 8, 2007 [6.1 – 9.1]</b>				
7	Aug. 11 –15	9.3	Nonlinear Systems of Equations	4,6,12,20,26,30,32,36,50,52
		10.1	Gaussian Elimination Method	4,8,14,20,22,28,38,50,52
		10.2	The Algebra of Matrices	8,12,16,20,22,28,32,38,72
		10.3	The Inverse of a Matrix	4,10,16,20,24,26,44
8	Aug. 18 – 20	10.4	Determinants	4,10,14,18,24,26,30,36,42,50,56
		Review		

<b>Evaluation Policy</b>	Exam I (MCQ) 22 points	Exam II (MCQ) 22 points	Final Exam (Comprehension & MCQ) 36 points
	<b>Class Work:</b> (At least 4 quizzes, one class test, CAL Activity, Home work, Class Attendance, etc) 20 points		
<b>CAL</b>	The syllabus of the weekly CAL Classes is on the back of this sheet. CAL Questions may be asked in the Exams.		

<b>General Information</b>	<b>Attendance:</b> A student will be awarded the GRADE “DN” after missing SIX classes without an OFFICIAL excuse. It is the responsibility of the student to keep the record of his absences. (1 <sup>st</sup> warning: 3 absences;      2 <sup>nd</sup> warning: 5 absences;      “DN”: 7 absences)
	<b>Being late in the Class:</b> Your instructor may mark you absent if you are not in time in the class.
	<b>Homework:</b> Students are required to submit homework according to a plan suggested by their instructors.
	<b>Office Hours:</b> The course instructors will hold daily office hours. Students must confirm the place and time from their instructors.

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 MATH 002 (Term 063)

**Textbook:** College Algebra with Trigonometry *by* Aufmann/ Barker / Nation, 5<sup>th</sup> ed., Houghton Mifflin, (2005)

Sections in the Textbook	Section Exercises (in Larson's CD)	Tutorial Exercises (In Larson's CD)
4.2 Exponential Functions and their Applications	<b>5.1:</b> 16,18,28,30	<b>5.1:</b> 4,5,8,9,10
4.3 Logarithmic Functions and their Applications	<b>5.2:</b> 6,18,20,50	<b>5.2:</b> 1,2,6,11
4.4 Properties of Logarithms	<b>5.3:</b> 44,66,72,92	<b>5.3:</b> 3,5,8,10
4.5 Exponential and Logarithmic Equations	<b>5.4:</b> 16,18,52,64	<b>5.4:</b> 6,10,12
5.1 Angles and Arcs	<b>6.1:</b> 8,44,48,80	<b>6.1:</b> 1,6,15
5.2 Trigonometric Functions of Acute Angles	<b>6.2:</b> 2,10,48,60	<b>6.2:</b> 1,5,7
5.3 Trigonometric Functions of Any Angles		
5.4 Trigonometric Functions of Real Numbers	<b>6.3:</b> 2,12,16,40,52	<b>6.3:</b> 2,5,8,9,12
5.5 Graphs of Sine and Cosine Functions	<b>6.4:</b> 4,22,34,46,72	<b>6.4:</b> 2,5,7,9
5.6 Graphs of other Trigonometric Functions	<b>6.5:</b> 6,12,20,34	<b>6.5:</b> 1,3,5
5.7 Graphing Techniques	<b>6.4:</b> 12,52 <b>6.5:</b> 26,30	<b>6.4:</b> 5,7 <b>6.5:</b> 2,4
6.1 Verification of Trigonometric Identities	<b>7.2:</b> 10,18,24,28,36,44	<b>7.1:</b> 7,9,14,16
6.2 Sum, Difference and Cofunction Identities	<b>7.4:</b> 2,22,26,38	<b>7.4:</b> 1,3,8,9
6.3 Double-and Half-Angle Identities	<b>7.5:</b> 6,26,40, 44,54	<b>7.5:</b> 5,11,12
6.5 Inverse Trigonometric Functions	<b>6.6:</b> 2,10,44,52,74	<b>6.6:</b> 2,4,5,9,12,13
6.6 Trigonometric Equations	<b>7.3:</b> 32,38,40 <b>7.5:</b> 12,16,60	<b>7.3:</b> 3,5,6,9,10 <b>7.5:</b> 1,2
7.3 Vectors ( <i>Without Applications</i> )	<b>8.3:</b> 4,32,34,42,44,50 <b>8.4:</b> 18,30	<b>8.3:</b> 1,3,5,9,11,12,13 <b>8.4:</b> 2,7
8.1 Parabolas	<b>4.4:</b> 10,24,28 <b>4.5:</b> 6,16,20	<b>4.4:</b> 1,4 <b>4.5:</b> 5,7
8.2 Ellipses	<b>4.4:</b> 38,50 <b>4.5:</b> 34,42	<b>4.4 :</b> 6,8 <b>4.5</b> 9,11
8.3 Hyperbolas	<b>4.4:</b> 72,82 <b>4.5:</b> 58,76	<b>4.4:</b> 11,12 <b>4.5:</b> 2,14
9.1 Systems of Linear Equations in Two Variables	<b>9.1:</b> 12,68 <b>9.2:</b> 16,32	<b>9.1:</b> 6,7 <b>9.2:</b> 1,2,7
9.3 Nonlinear Systems of Equations	<b>9.1:</b> 4,44	<b>9.1:</b> 8,10
10.1 Gaussian Elimination Method	<b>10.1:</b> 8,16,28,52,70	<b>10.1:</b> 3,5,8
10.2 The Algebra of Matrices	<b>10.2:</b> 4,18,28,36,44,50	<b>10.2:</b> 1,2,4,7
10.3 The Inverse of a Matrix	<b>10.3:</b> 2,16,24,38	<b>10.3:</b> 1,2,6,8
10.4 Determinants	<b>10.4:</b> 24,26,52,54,56,70	<b>10.4:</b> 1,4,7,10,13

