

# KUWAIT UNIVERSITY

Department of Mathematics, College of Science

MATH 91- PRECALCULUS

Spring 2017-2018

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## **Textbook:**

PRECALCULUS: MATHEMATICS FOR CALCULUS (7<sup>th</sup> Edition – Metric Version)

**Authors:** James Stewart, Lothar Redlin, and Saleem Watson

Content		Page	Hours
<b>Chapter 1: Fundamentals</b>			<b>18</b>
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1.2	Exponents and Radicals	13	2
1.3	Algebraic Expression	25	2
1.4	Rational Expression	36	2
1.5	Equations	45	2
1.6	Complex numbers	59	1
1.8	Inequalities	81	2
1.9	The Coordinates plane; Graphs of equations; Circles	92	2
1.10	Lines	106	2
<b>Chapter 2: Functions</b>			<b>8</b>
2.1	Function	148	1
2.2	Graphs of Functions	159	1
2.3	Getting information from the Graph of Functions	170	1.5
2.6	Transformations of Functions	198	1.5
2.7	Combining Functions	210	1
2.8	One-to-One Functions and Their Inverse	219	2

<b>Chapter 3: Polynomials</b>			<b>3.5</b>
3.3	Dividing polynomials	269	2
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<b>Chapter 4: Exponential and Logarithmic function</b>			<b>4.5</b>
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4.2	The Natural Exponential Function	338	0.5
4.3	Logarithmic Function	344	1
4.4	Laws of Logarithms	354	1
4.5	Exponential and Logarithmic Equations	360	1.5
<b>*Chapter 6: Trigonometric Functions, Right Triangle Approach</b>			<b>3</b>
6.1	Angle Measure	472	1
6.2	Trigonometry of Right triangle	482	1
6.3	Trigonometric Function of Angles	491	1
<b>*Chapter 7: Analytic Trigonometry</b>			<b>5</b>
7.1	Trigonometric Identities	538	1
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7.3	Double-Angle and Product-Sum Formulas	553	1
7.4	Basic Trigonometric Equations	564	1
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<b>**Chapter 12</b>			<b>3</b>
12.4	Mathematics of Finance	867	3

**Remarks:**

\* For non CBA students

\*\* For CBA students only

## Teaching Schedule:

Week	Dates	Sections
1	28 Jan – 1 Feb	1.1
2	4 Feb – 8 Feb	1.2, 1.3 ...
3	11 Feb – 15 Feb	1.3, 1.4
4	18 Feb – 22 Feb	1.5, 1.6
5	25 Feb – 1 Mar	1.8
6	4 Mar – 8 Mar	1.9, 1.10
7	11 Mar – 15 Mar	1.10, 2.1, 2.2
8	18 Mar – 22 Mar	2.3, 2.6
9	25 Mar – 29 Mar	2.7, 2.8
First exam: Tuesday 27/3/2018. Included material: Chapter 1		
10	1 Apr – 5 Apr	3.3, 3.4 ...
11	8 Apr – 12 Apr	3.4, 4.1, 4.2, 4.3 ...
12	15 Apr – 19 Apr	4.3, 4.4, 4.5
13	22 Apr – 26 Apr	6.1, 6.2, 6.3
Second exam: Tuesday 24/4/2018. Included material: Chapters 2, 3 and 4		
14	29 Apr – 3 May	7.1, 7.2, 7.3,
15	6 May – 8 May	7.4, 7.5
Final Exam Includes the whole material being taught during the semester.		
Tuesday, 8 <sup>th</sup> of May is the last day of classes		

## Selected Exercises:

Section	Exercices
1.1	9, 27, 29, 30, 32, 41, 46, 68, 69, 72, 76, 77, 79, 80, 82
1.2	19, 24, 27, 36, 37, 39, 44, 47, 48, 50, 53, 57, 60, 62, 66, 69, 75, 77, 80
1.3	17, 22, 24, 27, 35, 41, 44, 46, 49, 52, 56, 58, 66, 67, 70, 73, 76, 78, 80, 82, 86, 93, 94, 109, 111, 113, 120, 121
1.4	19, 24, 27, 33, 35, 37, 41, 45, 47, 52, 59, 65, 68, 69, 71, 74, 81, 86, 89, 91, 95
1.5	18, 21, 27, 29, 37, 45, 47, 54, 55, 59, 63, 71, 77, 89, 93, 95, 103, 107, 109, 112, 113, 116
1.6	19, 23, 26, 29, 33, 35, 39, 43, 61, 65
1.8	17, 27, 35, 41, 46, 49, 53, 57, 61, 65, 83, 85, 89, 92, 93, 101, 102
1.9	7, 8, 15, 17, 19(a), 27, 29, 30, 35, 37, 45, 48, 53, 71, 73, 74(a), 76, 85, 89, 91, 93, 99, 103, 105, 107, 109, 111, 112
1.10	7, 11, 21, 23, 27, 29, 33, 35, 37, 39, 40, 41, 46, 50, 61, 63, 65, 73, 75
2.1	19, 23, 25, 29, 33, 35, 37, 38, 43, 47, Find domain only(52, 54), 55, 57, 60, 61, 63, 64, 65, 72
2.2	4, 7, 9, 15, 19, 24, 35, 51, 53, 57, 61, 62, 65, 66, 67
2.3	7, 9, 11(b), 13(b), 15(b), 31, 33, 43, 45
2.6	3, 4, 11, 13(a), 14(a), 21, 23, 25, 27, 29, 33, 36, 38, 48, 53, 57, 59, 65, 67, 71(a, b, d, e), 83, 85, 87, 89, 90
2.7	11, 13, 15, 17, 19, 20, 27, 29, 31, 32, 33, 37, 40, 43, 45, 47, 52, 55
2.8	7, 9, 13, 15, 17, 23, 25, 27, 29, 31, 34, 35, 39, 45, 49, 53, 57, 61, 67
3.3	3, 7, 11, 19, 23, 29, 39, 43, 55, 57, 63, 67
3.4	11, 15, 17, 25, 29, 33, 45, 55(a)
4.1	2, 3, 21, 23, 25, 26, 27, 29, 33, 37
4.2	9, 10, 11, 15
4.3	11, 13, 15, 17, 23, 27, 29, 31, 33, 35, 37, 39, 43, 53, 55, 57, 58, Domain(61,65,67,71) 75, 74, 77
4.4	9, 11, 13, 16, 17, 33, 37, 39, 41, 47, 51, 53, 55, 56, 69, 70, 76
4.5	5, 6, 8, 17, 23, 29, 31, 39, 42, 45, 49, 52, 55, 59, 63, 65
6.1*	5, 6, 9, 17, 19, 20, 53, 55, 57, 59

6.2*	3, 7, 15, 16, 23, 25, 27, 29, 30, 33, 37
6.3*	5, 9 (a, b), 13, 15, 16, 20, 25, 26, 27, 32, 37, 39, 41, 43, 47, 52
7.1*	7, 9, 10, 13, 15, 19, 23, 29, 33, 36, 37, 40, 42, 49, 53, 56, 65, 71, 77, 83, 87
7.2*	3, 5, 11, 15, 17, 19, 25, 28, 29, 32, 35, 36, 39
7.3*	3, 5, 9, 11, 29, 32, 51, 53, 55, 59, 67, 69
7.4*	5, 6, 13, 14, 17, 25, 31, 32, 37, 42, 47, 51, 53
7.5*	3, 7, 9, 10, 19, 41, 43
12.4**	3, 9, 11, 15, 19

- Homework is intensive and need not be proportional to in-class presentation and should foster conceptual understanding and technical skills and the utility of the material in modeling or solving real-life problems.
- **Remarks:**
  - \* For non CBA students
  - \*\* For CBA students only

### **Assessment:**

The course will be graded based on:

- **Two in-term examination (25% for each midterm).**
- A comprehensive **final examination (50%)**
- The only possible grade for the course is either Pass or Fail. The student must achieve an accumulative **60%** or more to gain the Pass grade.

Exam	Date	Time
First	Tuesday 27 <sup>th</sup> of March, 2018	6:30 - 8:00
Second	Tuesday 24 <sup>th</sup> of April, 2018	6:30 - 8:00
Final	Thursday 17 <sup>th</sup> of May, 2018	9:00 - 11:00

### **Attendance:**

Attending classes is compulsory. Missing too many classes might lead to "FA" in the class. (Please, check "FA" rules).

### **Examination and test regulation:**

- Calculators and electronic communication devices, such as mobiles telephones are strictly **prohibited** from rooms in which an examination or test is taking place.
- Supervisory staff will not answer queries regarding a question posed or its method of solution, part of the objective is to assess the student's understanding and ability to solve the question.
- All of the above is subject to change.