Prince Sultan University
Math and General Sciences/Deanship of Educational Services
1st Semester 2017 – 2018

INSTITUTIONAL COURSE SYLLABUS TEMPLATE

Course Code: MATH 001	Course Title: Orientation Mathematics I
Course Instructor: Various	Email: Various
Credit Hours: 4	Lectures: SUWH
Office Hours: Various	Office: Various

Mission Statement of General Courses Department:

The mission statement of General Courses Department is to provide students with diverse educational opportunities by delivering high quality courses in social, health, and physical sciences that help students develop intellectual hard skills in these domains and interpersonal and transferable soft skills, such as critical thinking and analytical, management and communication skills. These capacities will empower students to achieve success across the academic programs at Prince Sultan University, to gain professional competencies for the workplace, as well as to become multi-talented and valuable community members of the society.

I. Course Description:

This course is designed to improve the student's computational skills in basic Algebra, and to demonstrate his writing ability in Mathematics with logical steps.

II. Course Learning Outcomes:

NQF Learning Domains	Course Learning Outcomes	Measured by
Knowledge	Recognize and calculate basic operations on real numbers and different types of expressions.	Quizzes Major Exams Final Examination
Cognitive Skills	Solve different types of equations and inequalities using various techniques.	Quizzes Major Exams Final Examination
	Analyze, and evaluate polynomial functions.	Quizzes Major Exams Final Examination
Interpersonal Skills & Responsibility		
Communication, Information Technology, Numerical	Interpret and transform graphs of polynomial functions.	Quizzes Major Exams Final Examination

III. Course Content

Week	Date	Topics	Contact hours
1	September 17 – 21	P.1 Algebraic Expressions & Real Numbers	4
2	September 24 – 28	P.2 Exponents P.3 Radicals and Rational Exponents	4
3	October 01 – 05	P.4 Polynomials P.5 Factoring Polynomials	4
4	October 08 – 12	P.5 Factoring Polynomials P.6 Rational Expressions	4
5	October 15 – 19	1.1 Graphs 1.2 Linear Equations and Rational Equations	4
6	October 22 – 26	1.2 Linear Equations and Rational Equations 1.4 Complex numbers	4
Major I Exam, Wednesday 25 October 2017 (Chapter P & 1.1 – 1.2)			
7	Oct. 29 – Nov. 02	1.5 Quadratic Equations 1.6 Other Types of Equations	4

8	November 05 – 09	1.6 Other Types of Equations 1.7 Linear Inequalities and Absolute Value Inequalities	4
9	November 12 – 16	2.1 Basics of Functions and their Graphs 2.2 More on functions and their Graphs	4
10	November 19 – 23	2.3 Linear Functions and Slope 2.4 More on slope (Parallel and Perpendicular Lines)	4
11	November 26 – 30	2.5 Transformations of Functions 2.6 Combinations of functions; Composite Functions	4
12	December 03 – 07	2.7 Inverse Functions 2.8 Distance and Midpoint; Circles	4
Major II Exam Wednesday 06 December 2017 (1.4 -- 1.7 & 2.1 -- 2.6)			
13	December 10 – 14	3.1 Quadratic Functions	4
14	December 17 – 21	3.2 Polynomial functions and their Graphs 3.3 Dividing Polynomials; Remainder and Factor theorems	4
15	December 24 – 28	3.4 Zeros of Polynomial functions 3.6 Polynomial and Rational Inequalities	4

Omitted Objectives (Topics)						
Section	**Objectives**		**Section**	**Objectives**	**Section**	**Objectives**
P.2	9		1.6	6	3.1	4
1.1	3, 5		2.1	7	3.4	1,2,3 & 5
1.2	5		2.3	7	3.6	3
1.5	7		2.6	5		

IV. Course Components

Component	**Contact Hours**
Lecture	60
Tutorial	15
Practical/Field	0

V. Teaching Strategies

Domain	Strategy
Knowledge	Lectures, Discussions, Examples & Tutorials
Cognitive Skills	Lectures, Discussions, Examples & Tutorials
Interpersonal Skills & Responsibility	N/A
Numerical & Communication Skills	Lectures, Discussions, Examples & Tutorials

VI. Course Requirements

At least 7 Quizzes, 2 Major Exams, 1 Final Exam and Online Homework

VII. Student Assessment

A. Assessment Task

Domain	Assessment Task
Knowledge	Quizzes Major Exams Final Examination
Cognitive Skills	Quizzes Major Exams Final Examination
Interpersonal Skills & Responsibility	N/A
Numerical & Communication Skills	Quizzes Major Exams Final Examination

B. Schedule of Assessment

Assessment	Assessment Task	Week Due	Proportion of Final Assessment
1	Quizzes	Weekly	10%
2	Major Exams	Week # 6 Week # 12	40%
3	Online Homework	As per published deadlines	5%
4	Attendance and Participation	Daily	5%
5	Final Examination	Week # 17	40%

VIII. Learning Resources

A. References

Required Textbook: Algebra and Trigonometry, Fifth Edition; Robert Blitzer;Prentice Hall.

Recommended Textbooks:

- College Algebra and Trigonometry 7th Edition By Richard N. Aufmann, Vernon C. Barker and Richard D. Nation
- College Algebra with Trigonometry, Ninth Edition By Raymond A. Barnett, Michael R. Ziegler, Karl E. Byleen, Dave Sobecki

Electronic Materials, Web Sites

MyMathLab Code for Online Homework. Access to University LMS

B. Facilities Required

- Classrooms with capacity of 30 students
- Whiteboard
- Data show Projector and Screen
- Smart board and Online course.

C. Learning Management System:

All solutions to quizzes and Major Exams, Lecture Notes and Important instructions can be found on the university LMS at https://lms.psu.edu.sa/

Homework

- There is an online tool "**MyMathLab**" which is a very helpful tool that should improve your performance in the course with all the helping features available. Your instructor will give you all the details about registering and using it.

- **Online Homework** will be given during the term. A deadline for submitting each homework will be determined by your instructor. **5 points** will be assigned to the Homework.

Math Department Website:

- A student can visit "The Math Department Page" through the "Math and General Sciences" Website **(info.psu.edu.sa/psu/maths)** where he can find several helping information such as the syllabi for all math courses, useful links to help the student in his study, and a huge collection of the previous midterm and final exams that were administered by the Department through the previous semesters.

Calculators:

- Only Scientific Calculators are allowed in this course (No Graphing Calculators). We recommend **Casio fx-991ES**

Office Hours:

- You are advised and encouraged to seek help to clarify matters that are not clear to you as soon as possible.
- Check the table posted on your instructor's door for the office hours incase you need assistance or you need to inquire about matters concerning your marks, absence, and so on. If you need to see him at a different time, arrange with him in advance.

MATH 001 Homework Problems

SECTION	PAGE	PROBLEMS
P.1	17	11, 13, 15, 25, 31, 41, 47, 55, 59, 63, 69, 73, 89, 93, 95 , 153, 155
P.2	33	5, 7, 13, 17, 19, 21, 25, 29, 33, 37, 39, 41, 43, 47, 51, 55, 57, 61, 63, **109 , 111**
P.3	48	11, 15, 17, 21, 25, 29, 31, 35, 39, 41, 43, 49, 53, 59, 63, 65, 71, 73, 77, 79, 87, 89, 91, 93, 97, 99, 105, 107, **111, 113**
P.4	61	3, 7, 11, 13, 17, 25, 29, 31, 35, 37, 43, 47, 53, 57, 61, 65, 67, 71, 75, 77, 81, **83, 87, 89**
P.5	74	5, 9, 13, 15, 19, 25, 29, 37, 41, 47, 51, 55, 59, 63, 67, 71, 75, 81, 85, 87, 89, 95, 99, 101, **103, 107, 111, 113**
P.6	86	3 , 5, 9, 11, 15, 19, 21, 25, 29, 31, 35, 39, 41, 45, 49, 51, 53, 57, 59, 63, 71**, 73, 75**
Review	89	1, 7, 8, 11, 21, 25, 29, 31, 42, 45, 47, 51, 55, 61, 67, 69, 73, 77, 79, 81, 87, 93, 101, 103, 107, 113, 117, 119
1.1	108	13, 17, 21, 23, 25, 41, 43, 45
1.2	124	3, 9, 11, 23, 25, 33, 37, 43, 45, 49, 55, 59, 63, 67, 69, 71, 77, 79, **87, 91, 95**
1.4	148	3, 5, 11, 15, 19, 21, 27, 31, 35, 39, 41, **47, 51, 75, 76, 77**
1.5	166	2, 7, 9, 13, 17, 23, 29, 37, 51, 57, 63, 67, 71, 77, 81, 85, 91, 97, 103, 107,119,121, **127, 129**
1.6	184	3, 7, 9, 13, 17, 27, 29, 31, 33, 35, 39, 41, 49, 57, 59, 63, 65, 69, 73, 87, **95, 97, 133, 135, 136**
1.7	201	3, 11, 21, 29, 33, 39, 41, 45, 49, 55, 57, 63, 73, 77, 79, 85, 91,97,101
Review	208	1, 7, 19, 27, 33, 55, 57, 59, 63, 67, 69, 71, 75, 87, 89, 91, 93, 95, 99, 115, 117, 119, 121

2.1	236	5, 9, 11, 13, 17, 21, 31, 33, 35, 41, 53, 59, 61, 67, 69, 79, 83, 87, **95, 97**
2.2	250	3, 9, 19, 23, 27, 29, 37, 39, 41, 47, 51, 55, 57, 59, 61,73,75
2.3	267	3, 7, 13, 19, 23, 27, 29, 35, 37, 45, 59, 63, 71, **79, 81, 113**
2.4	278	1, 3, 5, 7, 9, 11, 13, 15, **21, 23, 45**
2.5	294	5, 9, 21, 25, 31, 47,49, 57, 63, 71, 79,89, 93, 103,105,113,117
2.6	309	7, 11, 19, 23, 27, 35, 41, 45, 51, 57, 61, 67, 71, 81**, 83, 89, 93, 95**
2.7	321	3, 7, 15, 19, 25, 27, 29, 33, 37, 41, 45, **53, 55, 57, 59, 61, 63**
2.8	331	7, 13, 15, 21, 25, 29, 37, 43, 45, 51, 55, 63, **69**
Review	335	5, 9, 15, 17, 19, 23, 25, 29, 35, 37, 47, 55, 57, 71, 75, 77, 79, 83, 87, 91, 95, 97, 99, 105
3.1	371	3, 5, 11, 13, 21, 29, 37, 39, 43, **45, 53, 95, 97**
3.2	388	3, 9, 13, 15, 19, 23, 27, 31, 35, 39, 41, 47, 55, 57, 61
3.3	401	5, 15, 21, 23, 25, 31, 35, 39, 41, 43, 45, **51, 74, 75, 78**
3.4	414	25, 27, 29, 31
3.6	448	3, 7, 11, 15, 21, 29, 31, 33, 39, 45, 53, 55, **61, 63, 65, 67**
Review	463	3, 5, 13, 17, 19, 23, 27, 29, 31, 33, 47, 691, 73

- The **bolded** questions are from the *Practice Plus* and *Critical Thinking* sections of the Exercise Sets. Some of these questions will be included in the exams.
- You are advised to do as many questions as possible, class-by-class, week by week. These questions will help to strengthen your understanding of the material taught in class. If you have any problems see your instructor.