KINGDOM OF SAUDI ARABIA
Ministry of Education
**AL-IMAM MUHAMMAD IBN SAUD
ISLAMIC UNIVERSITY**
Deanship of Preparatory Programs

المملكة العربية السعودية
وزارة التعليم
جامعة الإمام محمد بن سعود الإسلامية
عمادة البرامج التحضيرية
قسم الرياضيات بكلية العلوم

Syllabus
First Semester 1441/1442 Hijri

Course Code	Course Name	Credit Hours	Lec	Lab	Tut.	Pre-requisite
MAT 041	MATH 1	4	2	0	2	None

Course Supervisor	Sami Alofei
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office	GR- 011B
Class Meetings	As scheduled

Course's Objectives: The main objective of this course is to develop a good grasp and critical thinking of the high school mathematics.

Note: Calculator is not allowed.

Grading:
- Attendance & Participation ……….…………..….…………..10%
- Quizzes (around 4 quizzes, 5% each) …………….…………..20%
- Mid-term Exam …….…………………………………..….30%
- Final Exam …………………………………………..….…40%
- **TOTAL**…………………………………………….....**100**

Attendance: Attendance will be taken in the first 5 minutes of the lecture (lectures). If you came late, you should remind me at the end of the class to consider your attendance for the second lecture, otherwise, you will be marked absent for the two lectures. Accepted excuses for absence should be submitted within two weeks after the absent lectures.

Classroom Participation: It is expected that you participate in the discussion at lectures by asking and answering questions, raising issues, and making observations and constructive comments.

Cheating and Dishonesty: Each student should write and submit his own work either on exams or on exercises and other course material. Anykind of cheating or dishonesty throughout the course is considered a serious offence and will be dealt with strictness and no mercy.

Week	Hours	Chapter	Title	Sections	Topics
1-4 (one week for each two sections)	**16 hours**	**R**	**Review of Prerequisites**	**R.1** **Sets and The real Number line**	**1-Subset of the real numbers** **2- Union and Intersection** **3-Absolute Value** **4-Distance** **5- Order of Operations** **6- Algebraic Expression**
				R.2 **Exponents And Radical**	**1- Apply Properties of Exponents** **2- Apply Scientific Notation.** **3- Roots.** **4-Radicals**
				R.3 : **Polynomials and Factoring**	**1- Add and Subtract Polynomial.** **2-Multiply of Polynomial.** **3-Factoring by Grouping.** **4-Factor Quadratic Trinomials.** **5-Factor Binomials.**
				R.4 **Problem Recognition Exercises**	**1- Determine Restricted Value For a Rational Expression.** **2-Simplify Rational Expressions.** **3- Multiply and Divide Rational Expressions.** **4-Add and Subtract Rational Expressions.** **5- Rationalize the Denominator of a Radical Expression.**
				R.5: **Equation with Real Solutions**	**1-Solving Linear Equations in one variable.** **2-Solving Quadratic Equations with real Solutions.** **3-Solve Absolute value Equations.**

				R.6: Complex Numbers and More Quadratic Equations	1- Simplify Imaginary Numbers 2- Perform Operations on Complex Numbers 3- Solve Quadratic Equations over the set of Complex Numbers 5- Use the Discriminant 6- Solve Equations in Quadratic Form
				R.7: Linear Compound And absolute value Inequalities	1- Solve Linear Inequalities. 2- Solve Compound Linear Inequalities. 3-Absolute Value Inequalities.
5-6	**8 hours**	1	**Graphs**	**1.1 Cartesian Coordinate Systems**	1- Reviewing Cartesian Coordinate System 2- Graphing Point by Point
				1.2 Distance in the Plane	1- Distance Between Two Points 2- Midpoint of a Line Segment 3- Circles
				1.3 Equation of the Line	1- Graphing Lines 2- Finding the Slope of a Line 3- Determining Special Forms of the Equation of a Line 4- Finding Slopes of Parallel or Perpendicular Lines.

Mid-Term Exam around 7Th Week

8-9	**8 hours**	2	**Functions**	**2.1Functions**	1- Definition of Function 2- Defining Functions by Equations 3- Using Function Notation
				2.2Graphing Functions	1-Basic Concepts 2- Linear Functions
				2.3 Operations on Functions; Composition	1- Performing Operations on Functions 2-Composition

				2.4 Inverse Functions	1-One-to-One Functions 2- Finding the Inverse of a Function
10-11	**6 hours**	3	**Exponential and Logarithmic Functions**	**3.1 Exponential Functions**	**1-Defining Exponential Functions** **2-Graphs of Exponential Function** **3- Additional Exponential Properties**
				3.2 Logarithmic Functions	**1-Defining Logarithmic Functions** **2-Converting Between Logarithmic form and Exponential Form** **3- Properties of Logarithmic Functions**
				3.3 Exponential and Logarithmic Equations	**1- solving Exponential Equations** **2- Solving Logarithmic Equations**
11-13	**10 hours**	4	**Systems of Equations and Matrices**	**4.1 System of Linear Equations**	**1- Solving by Substitution** **2- Solving Using Elimination by Addition**
				4.2 Matrix Operations	**1- Adding and Subtracting Matrices** **2- Multiplying a Matrix by a Number** **3- Finding the Product of Two Matrices**
				4.3 Determinants and Cramer's Rule	**1- Defining First and Second ordered Determinants** **2- Using Cramer's Rule to Solve Systems of Equations**
14	**4 hours**	**Revision**			
Final Exam around 15ᵀʰ Week					

Final Exam around 15Th Week