الجامعة الألمانية الأردنية
German Jordanian University

School of Basic Sciences and Humanities
PreMATH (MATH 099)

INSTRUCTOR:	TBA
OFFICE:	TBA
EMAIL	TBA
OFFICE HOURS	TBA
Others by appointments (appointments by emails only). Faculty members usually in their offices other times during the day. So if your schedule doesn't sync with posted office hours, stop by his/her office, or, to be sure he is in to help you.	

TEXTBOOK: Precalculus (9th Edition), ISBN-13: 978-0321716835, by Michael Sullivan

OTHER REFERENCES: Thomas' Calculus: Early Transcendentals (13th Edition), ISBN-13: 978-0321884077, by George B. Thomas Jr., Maurice D. Weir and Joel R. Hass
Schaum's outline of Precalculus, 3rd Edition: 738 Solved problems + 30 Videos. ISBN-13: 978-0071795593, by Fred Safier
In addition, you will need:

- **A NOTEBOOK** to keep your notes and practice problems. It should be brought to class each day.

Course Objective: The main goal of this course is to provide the student with the basic concepts of functions and the mathematical maturity needed for learning calculus. Students will examine real numbers, polynomial and rational functions, exponential and logarithmic functions, trigonometric and circular function. Topics include systems of equations and inequalities. Students will learn the concepts of functions and use them as tools to model and solve practical problems.

COURSE OUTLINE

- Functions and Their Graphs
- Linear and Quadratic Functions
- Polynomial and Rational Functions
- Exponential and Logarithmic Functions
- Trigonometric Functions
- Analytic Trigonometry
- Applications of Trigonometric Functions

SUGGESTED PRACTICE PROBLEMS
Suggested practice problems are assigned on a daily basis. The problems are for your own practice. They will help you understand the material covered in class. Help and tutoring sessions will be provided if possible.

Course Grading Policy
There will be regular quizzes, two midterms and a final exam.

First Exam	TBA	30%	(Tentative: Up to the end of section 5.3)
Second Exam	TBA	30%	(Tentative: Up to the end of section 7.3)
Final Exam	TBD	40%	(Comprehensive)
Course Total Grade		100%	

ACADEMIC CONDUCT

Academic honesty and mutual respect (student with student and instructor with student) are expected in this course. Mutual respect means being on time for class and not leaving early, being prepared to give full attention to class work, not reading during class time. Academic misconduct of any form, including copying or the use of prohibited materials during a testing situation, will result in a grade of zero on the class as well as appropriate academic disciplinary measures. Cheating is not tolerated and will be dealt with harshly. Any form of cheating will result into immediate failing of the class in accordance with University Regulations.

More on Classroom Conducts and Attendance will be discussed thoroughly during the first day of classes.

IMPORTANT NOTE: Absences may be **excused** by medical certificate but they are **never erased**. The only circumstance where an absence is erased is if a student is officially representing the university and has produced a letter from Student Affairs to prove this or if a student must attend an exam on the **same day and time** provided an acceptable letter is produced from the relevant Doctor of that subject. All other absences are considered as official and are counted. A verbal warning will be given by the teacher after 3 absences. A written formal warning will be given after 4 absences and a student with 5 absences will be required to drop the course and re-register the following semester. **If a student is regularly late this will result in an absence**.

The following are the instructions given in the university regulations: **A student is not permitted to absent himself / herself from more than 15% of the total number of credit hours assigned for each course (i.e. four lectures of the total number of lectures prescribed for a course that is being taught two times per week with a duration of one hour and a half per lecture).**

(In addition to this syllabus, please refer to the GJU Standard Course Policies sheet.)

# Weeks	**Chapter/**Section
2	**2. Functions and Their Graphs**
	2.1 Functions
	2.2 The Graph of a Function
	2.3 Properties of Functions
	2.4 Library of Functions; Piecewise-defined Functions
	2.5 Graphing Techniques: Transformations
1	**3.Linear and Quadratic Functions**
	3.1 Linear Functions and Their Properties
	3.3 Quadratic Functions and Their Properties
2	**4. Polynomial and Rational Functions**
	4.1 Polynomial Functions and Models
	4.2 Properties of Rational Functions
	4.3 The Graph of a Rational Function
	4.4 Polynomial and Rational Inequalities
	4.5 The Real Zeros of a Polynomial Function (reminder theorem, factor theorem)
3	**5. Exponential and Logarithmic Functions**
	5.1 Composite Functions
	5.2 One-to-One Functions; Inverse Functions
	5.3 Exponential Functions
	5.4 Logarithmic Functions
	5.5 Properties of Logarithms
	5.6 Logarithmic and Exponential Equations
2	**6. Trigonometric Functions**
	6.1 Angles and Their Measure
	6.2 Trigonometric Functions: Unit Circle Approach
	6.3 Properties of the Trigonometric Functions
	6.4 Graphs of the Sine and Cosine Functions
	6.5 Graphs of the Tangent, Cotangent, Cosecant and Secant Functions
	6.6 Phase Shift; Sinusoidal Curve Fitting
3	**7. Analytic Trigonometry**
	7.3 Trigonometric Equations
	7.4 Trigonometric Identities
	7.5 Sum and Difference Formulas
	7.6 Double-angle and Half-Angle Formulas
	7.7 Product-to-Sum and Sum-to-Product Formulas
1	**8. Applications of Trigonometric Functions**
	8.1 Right Triangle Trigonometry; Applications
	8.2 The Law of Sines
	8.3 The Law of Cosines