

**Course Number and Title:**

Math 110, Precalculus  
Time: UTR 1:00-1:50 A105

**Professor:**

Ms. Elham El Saheli  
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Office Hours: UTR: 8:00-9:00 & 11:00-12:00

**Textbook:** *Precalculus*, 6<sup>th</sup> Edition, Lial, Hornsby & Schneider, Pearson.

**Course Description:** This course is designed to provide students with a full range of Precalculus skills. Exponential and logarithmic functions, trigonometric functions and inverses, binomial theorem, introduction to limits, introduction to derivatives, basic rules of differentiation, conics, and the use of technology for problem solving.

**Learning Outcomes:** Upon completion of the course, students should be able to:

1. Learn the exponential, logarithmic, and trigonometric functions and their graphs.
2. Learn how to solve logarithmic, exponential and trigonometric equations.
3. Learn the concept of limit, continuity, and derivative.
4. Learn how to apply basic differentiation rules.

**Evaluation Standards:** Student evaluation will be based on the following performance criteria:

1. Correct use of concepts, laws, formulas, and principles.
2. Appropriate use of language and terminology.
3. Accuracy of language, calculations, and simplifications.
4. Adequate interpretation of solutions to problems.
5. Presentation of homework, tests and final.

**Grading Criteria:**

Test 1, Oct 16.....	20%
Test 2, Nov 20.....	20%
Test 3, Dec 18.....	20%
HW,.....	10%
Final Exam.....	30%

**Grading Scale:**

F/FN below 60	D- 60-63	D 64-66	D+ 67-69	C- 70-73	C 74-76
C+ 77-79	B- 80-83	B 84-86	B+ 87-89	A- 90-93	A 94-100

**Note:** To pass the course, your grade should be at least **70%**.

## Class Policy

- Attending all classes is essential for students to pass the course. Attendance will be taken during every lecture. Students should be in class on time. Otherwise, they will be considered absent.
- Cell Phones **must be turned off** during the class, and kept in your bag or under your desk.
- **No make-up test will be given for any reason.** With a legitimate reason and a proof, the weight of the test will be moved to the final exam.
- **Homework** problems will be assigned through MyMathLab. The due dates of the HW are found on MyMathLab.

## Academic Honesty

If you are caught cheating on a quiz, test, or final, you will fail the course. Letting someone to copy from your paper is also considered cheating and will be treated as such.

## Disability Accommodations:

If you believe that you need accommodations for a disability, you are requested to contact the Disability Coordinator, Dr. Huda Shaaban, in Career Services and Wellness (Located in next to the Hangout and Registration) to arrange an appointment to discuss your needs. You are also welcome to contact me to discuss your academic needs. However, since all disability-related accommodations require registration with CSW and are not applied retroactively, you should contact Dr. Huda Shaaban as soon as possible.

## University Mission Statement

The American University of Kuwait is a liberal arts institution dedicated to teaching, learning, and scholarship. The university offers programs that provide students with the knowledge and skills necessary for lifelong learning and professional success. AUK enriches society by fostering an environment encouraging critical thinking, effective communication, personal growth, service, and leadership.

## Class Schedule:

- The following schedule is not set in stone and it is subject to modification. However, it should give you a good indication of where we will be throughout the semester.
- Dates of tests and final exam are fixed and will be given on the dates found in the table. In case of any change, students will be informed in the classroom or by email.

## **Table of Contents**

### **4. Inverse, Exponential, and Logarithmic Functions**

4.1 Inverse Functions

4.2 Exponential Functions

4.3 Logarithmic Functions

4.4 Evaluating Logarithms and the Change-of-Base Theorem

4.5 Exponential and Logarithmic Equations

4.6 Applications and Models of Exponential Growth and Decay

### **5. Trigonometric Functions**

5.1 Angles

- 5.2 Trigonometric Functions
- 5.3 Evaluating Trigonometric Functions
- 5.4 Solving Right Triangles

## **6. The Circular Functions and Their Graphs**

- 6.1 Radian Measure
- 6.2 The Unit Circle and Circular Functions
- 6.3 Graphs of the Sine and Cosine Functions
- 6.4 Translations of the Graphs of the Sine and Cosine Functions
- 6.5 Graphs of the Tangent, Cotangent, Secant, and Cosecant
- 6.6 Harmonic Motion

## **7. Trigonometric Identities and Equations**

- 7.1 Fundamental Identities
- 7.2 Verifying Trigonometric Identities
- 7.3 Sum and Difference Identities
- 7.4 Double-Angle and Half-Angle Identities
- 7.5 Inverse Circular Functions
- 7.6 Trigonometric Equations
- 7.7 Equations Involving Inverse Trigonometric Functions

## **8. Applications of Trigonometry**

- 8.1 The Law of Sines
- 8.2 The Law of Cosines
- 8.3 Vectors, Operation, and the Dot Product
- 8.4 Applications of Vectors
- 8.5 Trigonometric (Polar) Form of Complex Numbers; Products and Quotients
- 8.6 De Moivre's Theorem; Powers and Roots of Complex Numbers
- 8.7 Polar Equations and Graphs
- 8.8 Parametric Equations, Graphs, and Applications

## **Supplementary Material**

- Limits
- Introduction to derivatives
- Basic rules of differentiation