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## 1. COURSE DESCRIPTION

This course (Set 2, Applied Mathematics) is the fundamental course which would provide in-depth knowledge and skills on certain mathematical models and techniques that are highly relevant for making appropriate business decisions in the real-life situations. This course is proposed for 2 and 4 teaching hours per week for Open Education and Full Time Study students respectively.

## 2. LEARNING OUTCOMES

Following are the learning outcomes of this course:

- Solve two variables linear equations and inequalities and sketch their graph.
- Interpret a series of three simultaneous inequalities of two variables, display them graphically and determine the solution set.
- Demonstrate an understanding of the definition of a function and its graph. d) Solve quadratic, exponential, logarithmic equations, and inequalities.
- Solve simple real life problems involving linear, quadratic, and exponential functions graphically and algebraically.
- Determine the zeros and the maximum or minimum of a quadratic function, and solve related problems, including those arising from real world applications.
- Sketch the graphs of a quadratic, exponential, and logarithmic functions.
- Compare simple and compound interest and relate compound interest to exponential growth. Understand the inverse relationship between exponents and logarithms and use this relationship to solve related problems.
- Understand basic concepts of descriptive statistics, mean, median, mode and summarize data into tables and simple graphs (bar charts, histogram, and pie chart.
- Understand basic probability concepts and compute the probability of simple events using tree diagrams and formulas for permutations and combinations.

## 3. TEXTBOOK PACKAGE

- " Precalcuus Mathematics for Calculus " by James Stewart, Lothar Redlin , Saleem Watson

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## 1. COURSE DESCRIPTION

This course (Set 3, Pure Mathematics) intends to provide good understanding and skills on problem solving. The course would introduce variety of mathematical techniques that are very much useful for Information Technology professionals. After completing this course, students will get an overview of mathematical models and techniques that are widely used in real-life problem-solving arena. This course has 2 and 4 teaching hours per week for Open Education and Full Time Study students respectively.

## 2. LEARNING OUTCOMES

- Demonstrate understanding of the definition of a function and its graph.
- Solve quadratic equations using quadratic formula.
- Define and manipulate exponential and logarithmic functions and solve problems arising from real life applications.
- Understand the inverse relationship between exponents and logarithms functions and use this relationship to solve related problems.
- Understand the definition of the different types of angles and measure them in degrees and radians.
- Describe analytically the trigonometric and circular functions.
- Demonstrate an understanding of trigonometric identities.
- Use the law of sines and cosines to solve a triangle and real life problems.
- Use appropriate software to interpret equations and graphs.
- Understand basic concepts of descriptive statistics, mean, median, mode and summarize data into tables and simple graphs (bar charts, histogram, and pie chart).
- Understand basic probability concepts and compute the probability of simple events using tree diagrams and formulas for permutations and combinations.

## 3. TEXTBOOK PACKAGE

- " Precalcuus Mathematics for Calculus " by James Stewart, Lothar Redlin , Saleem Watson

1. **Course Description**

EF001 is the first English language foundation level. Audience is non-native speakers of English who are beginners of the language. The course includes all English language skills like listening, reading, writing and speaking. The syllabus is an integrated thematic syllabus that presents the communication skills through high-interest topics and content. Since this is the first foundation level, focus is upon introducing and establishing writing skills that will help in the next level. This course has 10 teaching hours per week. **This course qualifies the students to move to the second foundation level (EF002).**

2. **Learning Outcomes[1]**

   ♣ Participate in a discussion on a general topic using different discussion queries
   ♣ Paraphrase a written sentence by replacing specific words/phrases
   ♣ Prepare and deliver a talk about any topic for 5 minutes using realia or visual material with confidence
   ♣ Brainstorm and write texts of 150 words in given topics showing appropriate readable accuracy of language
   ♣ Produce a step by step journal reflection of 400 words in a given period of time
   ♣ Listen to a script said by one person and answer comprehension, T/F, multiple choice, fill in the gap questions related to the listening script
   ♣ Follow spoken instructions in order to carry out a task with two stages
   ♣ Listen to a conversation between two speakers and answer extended questions about the text
   ♣ Read a one page text and extract specific information in a given period of time
   ♣ Read at least a five page text and respond to questions that require basic analytical skills

# Intensive English Foundation II (IEF002)
## Course Guide

3. **Course Description**

EF002 focuses on developing students' academic English language skills in listening, reading, writing and speaking up to a level that qualifies the students to move to the third intensive English foundation level (EF003). These academic skills are integrated with study skills that are required by students in their course of study.
This level has 20 teaching hours per week. The syllabus is integrated reading & writing and listening & speaking where English is learned / acquired through content and topics of high student-interest.
*(Prerequisites:EF001).*

### 4. Learning Outcomes[2]

- ♣ Participate in a discussion on a general topic using different discussion queries.
- ♣ Paraphrase a written sentence by replacing specific words/phrases.
- ♣ Prepare and deliver a talk about any topic for 5 minutes using realia or visual material with confidence.
- ♣ Brainstorm and write texts of 150 words in given topics showing appropriate readable accuracy of language.
- ♣ Produce a step by step journal reflection of 400 words in a given period of time.
- ♣ Listen to a script said by one person and answer comprehension, T/F, multiple choice, fill in the gap questions related to the listening script.
- ♣ Follow spoken instructions in order to carry out a task with two stages.
- ♣ Listen to a conversation between two speakers and answer extended questions about the text.
- ♣ Read a one page text and extract specific information in a given period of time
- ♣ Read at least a five page text and respond to questions that require basic analytical skills

### English Foundation III (EF003) - Course Guide
#### 1. Course Description

EF003 is the third and final English language foundation course and is intended for non-native speakers of English. The course focuses on preparing the students of AOU for their program studies through academic reading, writing, listening and speaking. Study and research skills are also emphasized in this course to equip students to be independent learners in their course of study.

This Course has 10 – 20 teaching hours. This integrated skills level focuses on the communicative method of learning English where English is learned / acquired through content and topics of high student interest. *(Prerequisites: EF002).*

#### 2. Course Outcomes[3]
Having successfully completed EF003, a student will be able to:

- Actively participate in a discussion on a topic relevant to their studies using different discussion queries. Actively engage in a discussion on a specific topic leading to agreement/disagreement.
- Paraphrase a spoken text or graphically presented data.
- Prepare and deliver a talk of at least 5 minutes. Use library resources in writing about the topic of talk, present clearly and confidently, make eye contact use

body language to support the delivery of ideas. Respond confidently to questions. Use technology in presenting. Ask questions to other presenters.
- Brainstorm and write texts of 250 words in a given topic showing control of layout, organization, punctuation, spelling, sentence structure, grammar and vocabulary.
- Produce a written step by step report of a minimum of 500 words.
- Take notes and respond to questions about the topic, main ideas, details and opinions or arguments from an extended (authentic or non-authentic) listening texts (recording/video/lecture/live broadcasting etc).
- Follow spoken instructions in order to carry out a task with a number of stages.
- Listen to a conversation between two or more speakers and be able to answer questions in relation to text, relationship between speakers, register etc
- Read a two page (authentic or non-authentic) text and identify the main idea and extract specific information in a given period of time.
- Read an extensive text broadly relevant to the students' area of study (minimum three pages) and respond to questions that require analytical skills, e.g. prediction, deduction, inference.

# ARAB OPEN UNIVERSITY
# OMAN- BRANCH

## **Faculty of Computer Studies**

## **Course Description- Foundation IT and Math**

| Course Code | Course Description |
|---|---|
| **IT100** | **Foundation IT**<br><br>The main objectives of the Foundation IT course is to ensure that the students are equipped with the computing and IT understanding skills necessary to source, process and communicate information related to the degree programmes in a variety of disciplines, offered at Arab Open University.<br><br>The following modules are covers in the program as prescribed by Oman Accreditation Council as part of General Foundation Program.<br><br>**1.Computer Fundamentals**<br><br>This module covers the following areas about Hardware, Software and general working of computers.<br><br>**2. Basic Computer Operations and File Management**<br><br>This module covers the operation like working with computers and its basic operations and file management. It also explain about various compression techniques, Computer Virus etc..<br><br>**3. Word Processing**<br><br>This module covers various features of Microsoft Word to create and edit documents. |

**4. Spread Sheet**

This module covers Microsoft Excel to create and edit spreadsheet. Various modules like functions, Sorting, Analysing, chart/graph, formula etc..

**5. Presentation**

This unit covers how to prepare presentations in Microsoft Power point. Aftre this unit the students will be able to develop presentations with animations, audio, video etc…

# 6.Internet , WWW and E-Mail

The following areas covers in this module:

Networking and Internet Fundamentals, Browsing in the internet, E-Mail,Identify how computers are used in different areas of work, school and home.

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| **MA100** | # Foundation Math |
| | The main objectives of the Foundation Mathematics course is to ensure that the students are equipped with the mathematical understanding and skills necessary to meet the cognitive and practical requirements of degree programmes in a variety of disciplines, offered at Arab Open University. |
| | In lieu with Ministry of Higher Education and Oman Accreditation Council, Arab Open University is following up the standards set by Ministry of Higher Education for General Foundation Program (G.F.P). |
| | The following modules are covers in this course. |
| | **Mathematics Basics** |
| | 1. Integer Arithmetic |
| | 2. Rational and Decimal Arithmetic . |
| | **Basic Algebra** |
| | 1. Introductory Skills. |
| | 2. Factoring and Simplifying Algebraic expressions. |
| | 3. Rules Using Positive Integer Exponents and Solving Linear and Literal Equations. |
| | **Intuitive Geometry** |
| | 1. Introductory One-Dimensional Problems |
| | 2. Solids and More Complex One-Dimensional Problems. |
| | **Algebra** |
| | 1. Graphs and Systems of Linear Equations |
| | 2. Simplifying Expressions |
| |    A. Operations on Polynomials |
| |    B. Rational Expressions |
| |    C. Negative Exponents |
| | 3. Quadratics |
| |    A. Factoring Quadratics |
| |    B. Quadratic/Rational Equations |
| | **Geometry** |
| | 1. Geometric Relationships |
| |    A. Right Triangle Relationships |
| |    B. Parallel and Perpendicular Lines |
| |    C. Distance |
| |    D. Area and Similar Figures |
| | 2. Circles and Other Conics |

**Advanced Algebra**

1. Radicals and Fractional Exponents
2. Absolute Value and Inequalities
3. Functions
   A. Functional Definition, Notation, and Interpretation
   B. Algebra of Functions
   C. Rational Functions
   D. Inverse Functions
4. Exponentials and Logarithms

A. Exponential and Logarithmic Functions
   B. Applications
5. Complex Numbers and Theory of Equations
6. Applications

**Trigonometry**

1. Basic Trigonometry Definitions
2. Identities
3. Triangles
4. Graphs
GEOMETRY
1. Circles
2. Triangles
3. Parallel/Perpendicular Lines