

**University of Management and Technology**

**Course Outline**

**Course code: ET 111**

**Course title: Engineering Mathematics**

Program	BSc Aircraft Maintenance Engineering Technology	
Credit Hours	03	
Duration	17 weeks	
Prerequisites	Nil	
Resource Person	Dr Faran A Hameed	
Counseling Timing (Room#        )	Tuesday	14:00 to 17:00
	Thursday	14:00 to 17:00
	Friday	14:00 to 17:00
Contact	faran.hameed@umt.edu.pk	

**Chairman/Director signature.....**

**Dean's signature.....**

**Date.....**

**Learning Objective:**

This course is designed to develop a conceptual foundation for the mathematical knowledge to be studied by the Aircraft Maintenance Engineering Technologists. It covers a vast variety of topics ranging from the fundamental principles of Mathematics to differentiation and integration. It focuses on developing a practically viable mathematical approach necessary for the upcoming courses.

Upon successful completion of the course, the student should be able to:

CLO No	CLO Statement	PLO	Learning Domain and level
1.	Show understanding and <i>state</i> the basic principles, laws and rules of Mathematics.	1	C1
2.	Apply the acquired knowledge of mathematics to solve engineering technology problems of broad level.	2	C2

**Objectives:**

- **The applicant should be able to understand the theoretical fundamentals of mathematics.**
- **The applicant should be able to give a general description of the mathematical rules using, as appropriate, typical examples.**
- **The applicant should be able to use mathematical formulae in conjunction with physical laws describing the subject.**
- **The applicant should be able to read and understand sketches, drawings and schematics describing the subject.**
- **The applicant should be able to apply his knowledge in a practical manner using detailed procedures.**

**1. CLO – PLO MAPPING:**

CLOs	PLOs											
	Engineering Technology Knowledge	Problem Analysis	Design/Development of Solutions	Investigation	Modern Tool Usage	The Engineering Technology and Society	Environment and Sustainability	Ethics	Individual and Team Work	Communication	Project Management	Lifelong Learning
	1	2	3	4	5	6	7	8	9	10	11	12
1	C1											
2		C2										

**Learning Methodology:**

- The teaching of the course will be via a series of lectures. This will be complemented by the use of textbook, and an extensive range of web resources plus handouts/articles and video clips.
- Besides an end term exam and a midterm exam, participants should expect 5-6 class activities during the semester. four to six assignments, individual/group presentations and 6-8 quizzes. These activities will be complemented with discussions and analysis to strengthen the learning.

### **Recommended Text Books:**

1. “Mathematics” by AERO-Bildung (2<sup>nd</sup> Edition) Germany [2016]

### **Reference Books:**

1. “Calculus” by Gilbert Strang published by Wellesley-Cambridge Press
2. “Mathematics”-Aviation Maintenance Technician Certification Series by Aircraft Technical Book Company

### **Grade Evaluation Criteria**

Following is the criteria for the distribution of marks to evaluate final grade in a semester.

<b>Marks Evaluation</b>	<b>Marks in percentage</b>
Quizzes (x6)	15%
Assignments (x4)	10%
Class room exercises (Viva)	5%
Presentation/Project	5%
Mid Term Examination	25%
End Term Examination	40%
<b>Total</b>	<b>100 %</b>

## Calendar of Course contents to be covered during semester

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Week	Course Contents	Reference Chapter(s)	Quizzes	Assignments	CLO No
1	Basic Arithmetic Operations Mathematical Operations with Powers	1.1.1 1.1.2	1		1
2	Roots and Radicals Calculation of Percentage	1.1.3 1.1.4	1	1	1
3	Physical Quantities, Standards and Units	1.1.5			
4	Algebraic Operations	1.2.1	1	0	1,2
5-6	Mathematical Operations with Logarithms Number Systems	1.2.2 1.2.3	1	0	1,2

7	Simple Geometry	1.3.1	1		1,2
8	Mid Term Examination				
9	Plane Geometry	1.3.2			1,2
10	Differentiation	Additional Notes	1		2,3

11-12	Applications of differentiation	Additional Notes	1		2,3
13	Integration	Additional Notes	1	1	2,3
14-15	Applications of Integration	Additional Notes	1	1	2,3



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# CLASS POLICY

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**STUDENTS ARE REQUIRED TO READ AND UNDERSTAND ALL ITEMS OUTLINED IN THE PARTICIPANT HANDBOOK**

**CLASS ATTENDANCE:** Students need to be in class at the assigned time. After 10 minutes past the assigned time, the students will be marked absent.

**TURN OFF MOBILE PHONE!** It is unprofessional to be texting or otherwise.

**READ EMAILS!** Participants should regularly check their university emails accounts regularly and respond accordingly. Students would be responsible if they miss a deadline because of not reading the emails.

**CLASS ATTENDANCE POLICY:** A minimum of 80% attendance is required for a participant to be eligible to sit in the final examination. Being sick and going to weddings is absence and will not be counted as present. Participants with less than 80% of attendance in a course will not be allowed to take end term exams. International students who will be leaving for visa during semester should not use any days off except for visa trip to avoid reaching short attendance.

**MOODLE:** UMT –LMS (Moodle) is an Open Source Course Management System (CMS), also known as a learning Management System (LMS). Participants should regularly visit the course website on MOODLE Course Management system, and fully benefit from its capabilities. In case of any problem while using MOODLE, visit <http://oit.umt.edu.pk/moodle>. For queries email [moodle@umt.edu.pk](mailto:moodle@umt.edu.pk)

**HARASSMENT POLICY:** Sexual or any other harassment is prohibited and is constituted as punishable offence. Sexual or any other harassment of any participant will not be tolerated. All actions categorized as sexual or any other harassment when done physically or verbally would also be considered as sexual harassment when done using electronic media such as computers, mobiles, internet, emails etc.

**USE OF UNFAIR MEANS/ HONESTY POLICY:** Any participant found using unfair means or assisting another participant during a class test/quiz, assignments or examination would be liable to disciplinary action.

**PLAGIARISM POLICY:** All students are required to attach a “Turnitin” report on every assignment, big or small. Any student who attempts to bypass “Turnitin” will receive “F” grade which will count towards the CGPA. The participants submit the plagiarism report to the resource person with every assignment, report, project, thesis etc. If student attempts to cheat Turnitin, a second

“F” will be awarded that will count towards the CGPA. There are special rules on plagiarism for final reports etc. all outlined in your handbook.

**COURSE WITHDRAWAL POLICY:** Students may withdraw from a course till the end of the 12th week of the semester. Consequently, grade ‘W’ will be awarded to the student which shall have no impact on the calculation of the GPA of the student. A Student withdrawing after the 12th week shall be automatically awarded “F” grade which shall count in the GPA.

**COMMUNICATION OF RESULTS:** The results of quizzes and assignments are communicated to the participants during the semester and answer books are returned. It is the responsibility of the course instructor to keep the participants informed about his/her progress during the semester. The course instructor will inform a participant at least one week before the final examination related to his or her performance in the course.

Faculty Signature .....

Date.....