

**University of Management and Technology****Course Outline****Course code: ET 112L****Course title: Engineering Physics Lab**

Program	BSc Aircraft Maintenance Engineering Technology							
Credit Hours	0.5							
Duration	15 weeks							
Prerequisites	Nil							
Resource Person	Palwasha Bilal							
Counseling Timing (Room# )	<table border="1"> <tr> <td>Tuesday</td> <td>14:00 to 17:00</td> </tr> <tr> <td>Thursday</td> <td>14:00 to 17:00</td> </tr> <tr> <td>Friday</td> <td>14:00 to 17:00</td> </tr> </table>		Tuesday	14:00 to 17:00	Thursday	14:00 to 17:00	Friday	14:00 to 17:00
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Contact	Palwasha.bilal@umt.edu.pk							

**Faculty Signature .....****Date.....****Chairman/Director signature.....****Dean's signature.....****Date.....****Learning Objective:**

The course aims to develop the concepts and significance of engineering physics. Understanding and concept of topics related to matter, structure of atoms and their properties. Problems based on mechanics including statics and kinetics, dynamics and fluid dynamics will be dealt in the course. Furthermore understanding of thermodynamics, optics (light) and wave motion and sound is also included..

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 <b>express</b> basic principles, laws and rules of Physics.	1	C2
2	<b>Execution</b> of lab based on Physics principles to find unknowns	5	P4
3	<b>Analyze</b> the outcomes of experiments through report	4	C4
4	Ability to <b>assist</b> and work as a team member for the multitask activities in lab	9	A2

**1. CLO – PLO MAPPING:**

CLOs	PLOs											
	Engineering Technology Knowledge	Problem Analysis	Design / Development of Solutions	Investigation	Modern Tool Usage	The Engineering Technologist 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	<b>C2</b>											
2					<b>P4</b>							
3				<b>C4</b>								
4									<b>A2</b>			

**Learning Methodology:**

- The teaching of the LAB course will be via a series of experiments. This will be complemented by the use of handouts
- Participants will be evaluated through lab reports, quizzes, viva, project and final

**Recommended Text Books:**

1. “Physics” by AERO-Bildung (2<sup>nd</sup> Edition) Germany [2017]

**Reference Books:**

1. “Aircraft Engineering Principles” by Lloyd Dingle and Mike Tooley.
2. “Physics”-Aviation Maintenance Technician Certification Series by Aircraft Technical Book Company

**Lab Handouts**

**Grade Evaluation Criteria**

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

**Practical:**

<b>Marks Evaluation</b>	<b>Marks Percentage</b>
<b>Lab Report</b>	60%
<b>Final Evaluation</b>	40%
<b>Total</b>	100%

**Calendar of Course contents to be covered during semester**

<b>Week</b>	<b>Experiment No.</b>	<b>Experiment</b>	<b>CLO</b>
<b>2</b>	<b>1</b>	Vector analysis of forces in equilibrium	CLO1 CLO2 CLO3 CLO4
<b>4</b>	<b>2</b>	Buoyant forces	
<b>6</b>	<b>3</b>	Calibrating thermocouple to measure temperature	
<b>8</b>	<b>4</b>	Refractive index of glass using a glass prism	
<b>10</b>	<b>5</b>	Refractive index of liquid using a concave mirror	
<b>12</b>	<b>6</b>	Measurement of the speed of sound in air	
<b>14</b>	<b>7</b>	Standing waves on a string	

## Class Policy

### 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.