

**University of Management and Technology**  
**Course Outline**

Course code: **ET 205**

Title: Digital Techniques/Electronic Instrument System

Program	BSc Aircraft Maintenance Engineering Technology							
Credit Hours	03							
Duration	16 weeks							
Prerequisites	ET104 Electrical Fundamentals, ET103 Electronic Fundamentals							
Resource Person	Dr Faran A Hameed							
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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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.....

## Course Learning Objectives:

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

S No	CLO Statement	PLO	Learning Domain and level
1.	<b>Understand and Define</b> the basic concepts of digital logic design, and logic circuits, as well as working principals of aircraft instrumentation.	1	C2
2.	<b>Distinguish</b> the components of Aircraft Instruments, both digital and analog, by <b>Applying</b> the knowledge gained in electronics systems, based on analog/digital devices, microcontrollers and data busses etc.	2	C3
3.	<b>Analyze</b> the given digital systems, especially those in aircraft avionics systems in terms of their inputs, outputs and functionality.	3	C4

## Grade Evaluation Criteria

Theory:

Marks Evaluation	Marks in percentage
Quizzes (4-6)	15%
Assignments (2-4)	5%
Evaluation (Viva)/ Class Activity	5%
Presentation/Project	5%
Mid Term Examination	30%
End Term Examination	40%
<b>Total</b>	100 %

**CLO – PLO MAPPING:**

CLOs	PLOs											
	Engineering Technology	Problem Analysis	Design / Development of	Investigation	Modern Tool Usage	The Engineering	Environment and	Ethics	Individual and Team Work	Communication	Project Management	Lifelong Learning
	1	2	3	4	5	6	7	8	9	10	11	12
1	C2											
2		C3										
3			C4									

**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.
- Participants should expect 3-4 class activities during the semester which will form the basis for evaluation (viva). Some 2-4 Assignments, individual/group presentations and 5-6 Quizzes. These activities will be complemented with discussions and analysis to strengthen the learning.

**Recommended Text Books:**

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

**Reference Books:**

1. “Digital Logic and Computer Design” by M. Morris Mano published by Prentice-Hall.
2. “Digital Techniques Electronic Instrument Systems”- Aviation Maintenance Technician Certification Series by Aircraft Technical Book Company

## LECTURE WISE COURSE BREAKDOWN

Course code: ET 205

Course title: Digital Techniques/Electronic Instrument System

Week	Lec No	Description	Ref	Quiz	Assignment	CLO No
1	1-2	Electronic Instrument Systems	5.1	01	01	1
2	3-4	Modern Electronics Flt Inst Sys	5.1			1
3	5-6	Number Systems	5.2			1, 2
4	7-8	Data Conversion	5.3	01	01	01, 03
5	9-10	Data Buses	5.4			01, 02, 03
6	11-12	Logic Circuits	5.5	01		01
7	13-14	Computers	5.6		01, 03	
8	15-16	MID TERM EXAM			01, 03	
9	17-18	Fiber optics	5.10	01	01	01, 03
10	19-20	Electronic Displays	5.11			01, 02
11	21-22	Electrostatic Sensitive Devices	5.12	01		01
12	23-24	Software Management	5.13		01, 02	
13	25-26	Electromagnetic Compatibility	5.14		2	
14	27-28	Typical Analog A/c Systems	5.15	01		02, 03
15	29-30	Typical Digital A/c Systems	5.15			
16	31-32	Revision				
17		<b>END SEMESTER EXAMINATION</b>				

## 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.

Faculty Signature \_\_\_\_\_

Date : \_\_\_\_\_