

University of Management and Technology

Course Outline

Course code: PT324

Course title: Aircraft General Knowledge – Instrumentation

Program	BS Aviation Professional Pilot
Credit Hours	3-0
Duration	01 Semester
Prerequisites	Nil
Resource Person	TBD
Counseling Timing (Room#)	TBD
Contact	TBD

Chairman/Director signature.....

Dean's signature.....

Date.....

Course Learning Outcomes: (CLOs)

S No	CLO Statement	Learning Domain and level
1	Explain the principles, construction, and operating characteristics of aircraft sensors, gyroscopic instruments, automatic flight control systems, and electronic displays.	C1
2.	Analyze and interpret the function of navigation and communication systems including INS/IRS, GNSS, RNAV/FMS, radar, and alerting systems in enhancing situational awareness and flight safety.	C2
3.	Evaluate and apply integrated avionics concepts by demonstrating the role of flight management systems, digital circuits, monitoring, and recording systems in optimizing aircraft.	C3

CLO – PLO Mapping:

CLOs	<u>PLO 1</u> Aeronautical Knowledge	<u>PLO 2</u> Flight Proficiency	<u>PLO 3</u> Regulatory Awareness	<u>PLO 4</u> Safety & Risk Management	<u>PLO 5</u> Communication Skills	<u>PLO 6</u> Ethical Responsibility	<u>PLO 7</u> Technological Adaptability	<u>PLO 8</u> Teamwork & Leadership	<u>PLO 9</u> Critical Thinking & Problem Solving	<u>PLO 10</u> Lifelong Learning
1	★									
2	★			★						
3	★						★			

Learning Methodology:

1. Learning methodology will include interactive class sessions followed by Power Point Slides containing Flight videos.
2. Students would be regularly evaluated through quizzes to keep them in pace with the course flow.

Grade Evaluation Criteria

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

Marks Evaluation	Marks in percentage	Details
Quizzes (x 4)	15%	QUIZ 1: CLO 1
		QUIZ 2: CLO 2
		QUIZ 3: CLO 2
		QUIZ 4: CLO 3
Assignments (x3)	10%	Assignment 1: CLO 1, 2
		Assignment 2: CLO 2
		Assignment 3: CLO 3
Mid Term Examination	35% {CLO 1, CLO 2, CLO 3}	
End Term Examination	40% {CLO 1, CLO 2, CLO 3}	
Total	100%	

Recommended Text Books:

EASA textbook for the INSTRUMENTATION. Soft copies will be provided

Reference Books:

EASA Oxford

Course Curriculum Reference:

Please Visit Pakistan Civil Aviation Authority (PCAA), Learning Objectives (LOs) for Personnel Licenses – ATPL, MPL, CPL (Aero plane And Helicopter).

Calendar of Course contents to be covered during semester

Course code: PT 303

Course title: Instrumentation

Week	Course Contents	Reference Chapter(s) as per PCAA Learning Objectives	<u>Course Learning Objective (CLO)</u>
1.	SENSORS AND INSTRUMENTS AND TEMPERATURE MEASUREMENT	022 01 00 00 and 022 02 02 00	CLO1
2.	MAGNETISM — DIRECT-READING COMPASS AND FLUX VALVE AND GYROSCOPIC INSTRUMENTS, QUIZ 1	022 03 00 00 and 022 04 00 00	
3.	INERTIAL NAVIGATION AND REFERENCE SYSTEMS (INS AND IRS), Assignment 1	022 05 00 00	CLO2
4.	AEROPLANE: AUTOMATIC FLIGHT CONTROL SYSTEMS	022 06 00 00	CLO1
5.	TRIMS – YAW DAMPER – FLIGHT ENVELOPE PROTECTION	022 08 00 00	
6.	AUTO-THROTTLE AUTOMATIC THRUST	022 09 00 00	
7.	COMMUNICATION SYSTEMS AND FLIGHT MANAGEMENT STSTEM (FMS), QUIZ 2	022 10 00 00 and 022 11 00 00	CLO2
8.	ALERTING SYSTEMS, PROXIMITY SYSTEMS, Assignment 2	022 12 00 00	
9.	INTEGRATED INSTRUMENTS — ELECTRONIC DISPLAYS AND MAINTENANCE, MONITORING AND RECORDING SYSTEMS Mid Term	022 13 00 00 and 022 14 00 00	CLO3
10.	DIGITAL CIRCUITS AND COMPUTERS	022 15 00 00	
11.	BASIC RADIO PROPAGATION THEORY	062 01 00 00	CLO 2
12.	RADIO AIDS and RADAR, QUIZ 3	062 02 00 00 and 062 03 00 00	
13.	AREA NAVIGATION SYSTEMS, RNAV/FMS	062 05 04 00	

14.	GLOBAL NAVIGATION SATELLITE SYSTEMS	022 14 00 00	
15.	PERFORMANCE-BASED NAVIGATION (PBN)	062.07.01.00	
16.	Navigation Display (ND), Electronic Horizontal Situation Indicator (EHSI, QUIZ 4, Assignment 3	022 13 03 03	CLO3
17.	Final Exam	CLO 1, CLO2, CLO3	

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 75% 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 75% 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 <https://lms.umt.edu.pk/login/index.php>.

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.

Date.....