

University of Management and Technology

Course Outline

Course code: 323

Course title: Flight Performance & Planning - Mass & Balance

Program	BS Professional Flight Technology
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	Apply fundamental concepts of aircraft mass, balance, and center-of-gravity (CG) limitations to ensure stability, controllability, and compliance with structural and performance restrictions.	C1
2.	Demonstrate proficiency in performing mass and balance calculations, CG position, maximum allowable loads, and extraction of relevant data from aircraft documentation.	C2
3.	Prepare trim sheets for aircraft (Cessna 152/172), incorporating cargo and fuel distribution to achieve safe and regulatory compliant flight conditions.	C3

CLO – PLO Mapping:

<u>CLOs</u>	<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 , CLO 2
		Assignment 2: CLO 2
		Assignment 3: CLO 3
Mid Term Examination	35% (CLO 1, CLO2 , CLO 3)	
End Term Examination	40% ((CLO 1, CLO2 , CLO 3)	
Total	100%	

Recommended Text Books:

EASA textbook for the MASS AND BALANCE. 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

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Course title: Flight Performance & Planning - Mass & Balance

Week	Course Contents	Reference Chapter(s) as per PCAA Learning Objectives	Course Learning Objective (CLO)
1.	Mass limitations	031 01 01 00	CLO1
2.	Centre-of-gravity (CG) limitations	031 01 02 00	

3.	Mass terms, QUIZ 1	031 02 01 01	
4.	Importance with regard to stability and controllability, Assignment 1	031 01 02 01	CLO2
5.	Mass calculations	031 02 03 00	CLO3
6.	FUNDAMENTALS OF CENTRE OF GRAVITY CALCULATIONS	031 03 00 00	
7.	Contents of mass and balance documentation	031 04 01 00	CLO1
8.	Structural limitations, Class activity, QUIZ 2, Assignment 2	031 02 02 01	CLO2
9.	Determination of aircraft empty mass and CG position by weighing / Mid term	031 04 02 00	CLO3
10.	Performance limitations	031 02 02 02	CLO2
11.	Extraction of basic empty mass and CG data from aircraft documentation	031 04 03 00	CLO1
12.	Methods, Maximum masses for take-off and landing, QUIZ 3	031 05 01 00 031 02 03 01	CLO2
13.	Load and trim sheet, Assignment 3	031 05 02 00	CLO3
14.	CARGO HANDLING, CG position as percentage of Mean Aerodynamic Chord (% MAC)	031 06 00 00 031 04 01 03	CLO2
15.	Allowed traffic load and fuel load,	031 02 03 02	
16.	Load and trim sheet Practice Cessna 152, Cessna 172, QUIZ 4	031 05 02 01	CLO3
17.	Final Exams	CLO 1 , CLO 2 , CLO 3	

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.ugt.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.....