

Module Title:	Aircraft Weight and Balance	
Language of Instruction:	English	
Credits:	5	
NFQ Level:	6	
Module Delivered In	1 programme(s)	
Teaching & Learning Strategies:	This module will be taught by class lectures, practical scenarios, class discussions and self-directed learning	
Module Aim:	The aim of this module is to provide the students with an understanding and awareness of the various factors governing the safe operational centre of gravity (C/G) and weight of the aircraft	
Learning Outcomes		
On successful completion of this module the learner should be able to:		
LO1	Identify the Centre of Gravity of the aircraft using mathematical formulae	
LO2	Calculate the Zero-Fuel, Take-off and Landing weights	
LO3	Discuss the effects of weight on an aircraft's performance at Take-Off, En-route and Landing	
LO4	Demonstrate an understanding of producing a load plan for a given aircraft and flight	
LO5	Demonstrate an understanding of the various terminologies and sections associated with the manual load and trimsheet	
LO6	Produce a manual load and trimsheet using variable load information to ensure that the aircraft is within the safe operational limitations of the aircraft	
Pre-requisite learning		
Module Recommendations		
This is prior learning (or a practical skill) that is recommended before enrolment in this module.		
7583	MATH H1S01	Maths Principles for Flight Dispatchers
Incompatible Modules		
These are modules which have learning outcomes that are too similar to the learning outcomes of this module.		
No incompatible modules listed		
Co-requisite Modules		
No Co-requisite modules listed		
Requirements		
This is prior learning (or a practical skill) that is mandatory before enrolment in this module is allowed.		
No requirements listed		

Module Content & Assessment

Indicative Content

Establishing the aircrafts weight and centre of gravity

Establishing the aircrafts weight and centre of gravity using mathematical formulas Establishing the Basic Weight of the aircraft; Use mathematical formulas to determine the centre of gravity, actual zero fuel weight for a given flight; Use formulae for changing, adding or subtracting loads on the aircraft Compartment and pallet loading restrictions using simple formulas

Effects of weight on the aircraft

The Four Forces that effect the aircraft; The effects of weight on the performance of aircraft particularly overweight and its consequence; The relationship between the combined weight of the aircraft and the aircrafts performance

Compartments structural limitations in relation to aircraft loading

Definition; impact due to limits

Rules and regulations of Aircraft Weight and Balance

International Civil Aviation Organisation (ICAO) Annex 8, European Aviation Safety Agency (EASA) Sub part J, Statuary Instrument 61 of 2006 Irish Aviation Authority (IAA) Operations Order and Statuary Instrument 324 of 1996 Irish Aviation Authority (IAA) Airworthiness of Aircraft

Compiling the Manual Load and Trimsheet

Terminologies; Compiling a load plan for a given aircraft with a variable load; Completing a manual load and trim sheet; Calculating the Traffic Load Weight, Actual Zero Fuel Weight, Actual Take-off Weight and Actual Landing Weight and establishing the safe operating Centre of Gravity based on the loads.

Assessment Breakdown	%
Continuous Assessment	40.00%
End of Module Formal Examination	60.00%

Continuous Assessment

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Short Answer Questions	Calculations	1,2,3	40.00	Sem 1 End

No Project

No Practical

End of Module Formal Examination

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Formal Exam	Learning Outcomes Assessed - All	1,2,3,4,5,6	60.00	End-of-Semester

SETU Carlow Campus reserves the right to alter the nature and timings of assessment

Module Workload

Workload: Part Time		
<i>Workload Type</i>	<i>Frequency</i>	<i>Average Weekly Learner Workload</i>
Lecture	Per Semester	0.96
Independent Learning Time	Per Semester	4.04
Total Hours		125.00

Module Delivered In

Programme Code	Programme	Semester	Delivery
CW_BSFOP_D	Bachelor of Science in Flight Operations	2	Mandatory