MODULE SPECIFICATION

Part 1: Information			
Module Title	Flight		
Module Code	UFMFFK-15-2	Level	Level 5
For implementation from	2018-19		
UWE Credit Rating	15	ECTS Credit Rating	7.5
Faculty	Faculty of Environment & Technology	Field	Engineering, Design and Mathematics
Department	FET Dept of Engin Design & Mathematics		
Contributes towards			
Module type:	Standard		
Pre-requisites	Engineering Mathematics 2018-19		
Excluded Combinations	None		
Co- requisites	None		
Module Entry requirements	None		

Part 2: Description

Educational Aims: See Learning Outcomes.

Outline Syllabus: In this module you will cover:

Elements of Aircraft Performance including: take-off and landing performance, rate of climb, gliding flight, range and endurance

Principles of Aircraft Longitudinal and Lateral Static Stability including: Weight and balance, Neutral Point, static Margin, calculation of elevator angle to trim, stick-fixed versus stick-free Static stability

Principles of Aircraft longitudinal and lateral dynamic stability including: mathematical description and numerical simulation of each mode (i.e. phugoid, short-period, roll subsidence, spiral dive, and dutch roll), magnitude and effects of damping

Principles of Flight Test including: In-flight measurements; post-flight calculations; comparison with theory; trends from multiple flights and tests

Teaching and Learning Methods: This module provides a detailed overview of flight mechanics and dynamics concepts using illustrated practical examples and computational exercises to help reinforce concepts of aircraft performance and stability. Students will also have the opportunity undertake a flight test course in a real aircraft as well as use flight test data to model aircraft dynamic motion using industry standard software.

Part 3: Assessment

Component A:

Assessed in controlled conditions via end of semester Exam of 2 hours (50%) in which MO1, and MO2 are covered through the specific exam questions. Formative assessments (not contributing to module mark) are provided via support in tutorial sessions.

Component B:

Report on the flight test and simulation group assignment in the form of a 6000 word report. In this assignment it is required that use of the flight test data made available (MO2), flight simulators (MO3) industry standard modelling software (MO4) is made by the student group. Students will be expected to demonstrate awareness of professional literature on flight testing and dynamics theory (LO6) as well as demonstrating decision making and communication skills as a group (LO5). Group work procedures (e.g. group member responsibilities and mediation process) will be outlined in the module handbook and peer review is incorporated within the assessment process to ensure that the group work aspect is a positive experience for students and staff.
Formative assessment and coursework support are provided in tutorial and coursework support sessions.

First Sit Components	**Final Assessment**	**Element weighting**	**Description**
Written Assignment - Component B		50 %	Assignment in flight testing (6000 words)
Examination - Component A	✓	50 %	Examination (2 hours)
Resit Components	**Final Assessment**	**Element weighting**	**Description**
Written Assignment - Component B		50 %	Assignment in flight (2500 words)
Examination - Component A	✓	50 %	Examination (2 hours)

Part 4: Teaching and Learning Methods	
Learning Outcomes	On successful completion of this module students will be able to:
Contact Hours	
Reading List	*The reading list for this module can be accessed via the following link:* https://uwe.rl.talis.com/index.html

	Module Learning Outcomes
MO1	Acquire knowledge in flight theory and model performance, static and dynamic stability of aircraft
MO2	Learn to flight test an aircraft and understand flight test principles
MO3	Operate the university flight simulators and use it to assess an aircraft's stability
MO4	Use industry standard numerical models to produce simulations of aircraft dynamic flight modes
MO5	Demonstrate key transferrable skills in problem formulation and decision making, self-management and communication
MO6	Demonstrate awareness of, and access to professional literature

Contact Hours	
Independent Study Hours:	
Independent study/self-guided study	114
Total Independent Study Hours:	114
Scheduled Learning and Teaching Hours:	
Face-to-face learning	36
Total Scheduled Learning and Teaching Hours:	36
Hours to be allocated	150
Allocated Hours	150