



## MODULE SPECIFICATION

Part 1: Information			
Module Title	Pilot Studies and Aeronautics		
Module Code	UFMFDK-15-1	Level	Level 4
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	<p>Aerospace Engineering with Pilot Studies [Sep][SW][Frenchay][5yrs] MEng 2018-19</p> <p>Aerospace Engineering with Pilot Studies [Sep][SW][Frenchay][4yrs] BEng (Hons) 2018-19</p> <p>Aerospace Engineering with Pilot Studies [Sep][FT][Frenchay][3yrs] BEng (Hons) 2018-19</p> <p>Aerospace Engineering with Pilot Studies (Design) [Sep][FT][Frenchay][3yrs] BEng (Hons) 2018-19</p> <p>Aerospace Engineering with Pilot Studies (Design) [Sep][SW][Frenchay][4yrs] BEng (Hons) 2018-19</p> <p>Aerospace Engineering with Pilot Studies [Sep][FT][Frenchay][4yrs] MEng 2018-19</p> <p>Aerospace Engineering with Pilot Studies (Design) [Sep][SW][Frenchay][5yrs] MEng 2018-19</p> <p>Aerospace Engineering with Pilot Studies (Manufacturing) [Sep][SW][Frenchay][5yrs] MEng 2018-19</p> <p>Aerospace Engineering with Pilot Studies (Systems) [Sep][SW][Frenchay][5yrs] MEng 2018-19</p> <p>Aerospace Engineering with Pilot Studies (Systems) [Sep][FT][Frenchay][4yrs] MEng 2018-19</p> <p>Aerospace Engineering with Pilot Studies (Manufacturing) [Sep][FT][Frenchay][4yrs] MEng 2018-19</p> <p>Aerospace Engineering with Pilot Studies (Design) [Sep][FT][Frenchay][4yrs] MEng 2018-19</p> <p>Aerospace Engineering with Pilot Studies (Manufacturing) [Sep][FT][Frenchay][3yrs] BEng (Hons) 2018-19</p> <p>Aerospace Engineering with Pilot Studies (Systems) [Sep][FT][Frenchay][3yrs] BEng (Hons) 2018-19</p> <p>Aerospace Engineering with Pilot Studies (Manufacturing) [Sep][SW][Frenchay][4yrs] BEng (Hons) 2018-19</p> <p>Aerospace Engineering with Pilot Studies (Systems) [Sep][SW][Frenchay][4yrs] BEng (Hons) 2018-19</p> <p>Aerospace Engineering with Pilot Studies {Foundation} [Sep][SW][Frenchay][5yrs] BEng (Hons) 2018-19</p>		

## STUDENT AND ACADEMIC SERVICES

Module type:	Standard
Pre-requisites	None
Excluded Combinations	None
Co- requisites	None
Module Entry requirements	None

### Part 2: Description

**Overview:** This module will provides an overview of pilot studies topics for a typical Private Pilot's Licence (PPL) and an introduction to aeronautics concepts such as aerodynamics and flow measurement and analysis.

**Educational Aims:** See Learning Outcomes

**Outline Syllabus:** In the pilot studies section you will cover:

Introduction to aircraft familiarisation, aircraft systems and communications

Aspects of Ground school training for a typical PPL such as (for pilots) meteorology, interpreting weather data, weight & balance, performance, navigation and cross country flight planning

Use of the university flight simulator

In the aeronautics section you will cover:

Introduction to fluid dynamics, pressure, density, hydrostatic pressure

Introduction to basic aerodynamics

Volumetric and mass flow rates, continuity and Bernoulli's equation

Flow measurement devices and calculations

Dimensional analysis for engineering problems

Flow types: laminar and turbulent flow, characteristics including solving basic problems

Use of the university subsonic windtunnel

**Teaching and Learning Methods:** See Assessment.

### Part 3: Assessment

Component A:

Assessed in controlled conditions via end of semester Exam of 2 hours (50%) in which LO1, LO2, LO4 and LO6 are covered through the specific exam questions. Formative assessments (not contributing to module mark) are provided via support in tutorial sessions.

Component B:

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<p>Report on the general aviation aircraft navigation assignment in the form of a group presentation of 30 mins held during in-class (50%). In this assignment it is required that use of the flight simulators is made by the student group (LO3). The presentation will cover aspects of aircraft navigation, communication and weight and balance (LO5, LO6, LO7). Marks will be allocated as a group for demonstration of problem formulation and decision making during the presentation, as well as for demonstration of understanding of pilot studies concepts covered in this module. 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 is provided via support in tutorial sessions.</p>			
<b>First Sit Components</b>	<b>Final Assessment</b>	<b>Element weighting</b>	<b>Description</b>
Presentation - Component B		50 %	Pilot studies navigation project (group presentation 30 mins.)
Examination - Component A	✓	50 %	End of semester exam (2 hours)
<b>Resit Components</b>	<b>Final Assessment</b>	<b>Element weighting</b>	<b>Description</b>
Presentation - Component B		50 %	Pilot studies navigation project (individual presentation 30 mins.)
Examination - Component A	✓	50 %	End of semester exam (2 hours)

### Part 4: Teaching and Learning Methods

Learning Outcomes	On successful completion of this module students will be able to:	
		<b>Module Learning Outcomes</b>
	MO1	Show a detailed knowledge and understanding of key principles in fluid dynamics and aerodynamics analysis
	MO2	Demonstrate a basic understanding and knowledge of modelling and solving numerical problems in fluid dynamics, based on knowledge of the relevant engineering principles
	MO3	Demonstrate the ability to use specific aerospace equipment such as the subsonic windtunnel and the flight simulators. (
	MO4	Understand the basics of aircraft composition, weight and balance and performance
	MO5	Develop a Visual Flight Rules cross country flight plan for a general aviation aircraft
	MO6	Show cognitive skills with respect to modelling and simplifying real problems, and applying mathematical methods of analysis
	MO7	Demonstrate key transferable skills in problem formulation and decision making, interpreting experimental results
Contact Hours	<b>Contact Hours</b>	
	<b>Independent Study Hours:</b>	
	Independent study/self-guided study	114

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	<b>Total Independent Study Hours:</b>	114
	<b>Scheduled Learning and Teaching Hours:</b>	
	Face-to-face learning	36
	<b>Total Scheduled Learning and Teaching Hours:</b>	36
	<b>Hours to be allocated</b>	150
	<b>Allocated Hours</b>	150
Reading List	<p><i>The reading list for this module can be accessed via the following link:</i></p> <p><a href="https://uwe.rl.talis.com/index.html">https://uwe.rl.talis.com/index.html</a></p>	