



MODULE SPECIFICATION

Part 1: Information			
Module Title	ICAO PPL Ground School		
Module Code	UFMF8W-15-1	Level	Level 4
For implementation from	2020-21		
UWE Credit Rating	15	ECTS Credit Rating	7.5
Faculty	Faculty of Environment & Technology	Field	Engineering, Design and Mathematics
Department	FET Dept of Engineering Design & Mathematics		
Module Type:	Professional Practice		
Pre-requisites	None		
Excluded Combinations	None		
Co-requisites	None		
Module Entry Requirements	None		
PSRB Requirements	None		

Part 2: Description
<p>Overview: Training of professional flying personnel requires specific conditions monitored by Aviation Authorities. Students of Aerospace Engineering with Pilot Studies, when graduate, must demonstrate pilot competencies on the level of Private Pilot License at least. This module combines engineering knowledge in the field of aerospace engineering with certified theoretical training towards Private Pilot License (Aeroplanes).</p> <p>The module is designed to provide a solid foundation of knowledge, with practical exercises and tutorials that reinforce theory and will enable the extension to specialist knowledge in future years. Students build and consolidate their knowledge in a variety of forms through traditional lectures, seminars, field trips and site visits and practical oriented sessions.</p> <p>Students also undertake a model aircraft design and build project where they apply this aerospace knowledge and the engineering design process to define, select the most promising solution and manufacture and evaluate the prototype solution. Students communicate their model aircraft design and build project findings and analysis through a group presentation.</p>

STUDENT AND ACADEMIC SERVICES

Educational Aims: The aim of this module is to introduce the field of aerospace engineering, the aerospace product life cycle and core aerospace knowledge and principles which are consolidated through an assessed model aircraft design and build activity. The module introduces elements of the theoretical training towards Private Pilot Licence (Aeroplanes) – PPL(A).

Outline Syllabus: Aerospace Product Life Cycle
 Introduction to Engineering Design Process
 Selecting the most promising solution
 Prototyping a solution
 Evaluating a prototype
 Sampling methods and statistical techniques
 Human Performance and soft skills for aerospace engineers;
 The Atmosphere and meteorology;
 Radio communications and operational procedures;
 Principles of flight, basics of airfoils and wings, lift generation, drag and its components, thrust and weight, pitching moment;
 Basic flight mechanics and performance (steady);
 Flight planning and navigation;
 Aircraft general knowledge and familiarisation, aircraft controls, aircraft measurement systems;
 Air law and airworthiness, Safety Management System in aerospace.

Teaching and Learning Methods: The lectorial and practical sessions aim to prepare the student to the PPL(A) practical training as well as to CAA theoretical exams which are required before the practical part. In addition to that, basic familiarisation with the university flight simulator is provided, in terms of general handling and flight instruments indication interpretation.

Students will have the opportunity to further consolidate their learning and apply their knowledge and understanding to the hands-on model aircraft design and build activity.

Part 3: Assessment

Component B

The model aircraft design and build activity is communicated and assessed in the form of a group presentation of 30 minutes held at the end of the teaching block. The presentation assesses that students have a clear understanding of the engineering design process and its application to model aircraft design and build project. The results, analysis and reflection of the project findings will also be assessed.

Peer review will be included within the assessment in accordance with the departmental group work policy.

Component A

CAA PPL theoretical exam (Pass/Fail)

When finishing the lectures, the students are expected to take the CAA exam. Passing this exam will allow them to start their practical PPL training in a selected flight school. Since PPL(A) licence is a mandatory milestone for students' graduation, successful completion of CAA exam is one of the conditions to pass this module.

First Sit Components	Final Assessment	Element weighting	Description
Professional Practice Report - Component A			ICAO PPL ground school exam marks
Presentation - Component B	✓	100 %	Group presentation for the wing design, manufacture and evaluation of a model fixed wing aircraft.
Resit Components	Final Assessment	Element weighting	Description

STUDENT AND ACADEMIC SERVICES

Professional Practice Report - Component A			ICAO PPL ground school exam marks
Report - Component B	✓	100 %	Individual report for the wing design, manufacture and evaluation of a model fixed wing aircraft.

Part 4: Teaching and Learning Methods																							
Learning Outcomes	<p>On successful completion of this module students will achieve the following learning outcomes:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Module Learning Outcomes</th> <th style="text-align: left;">Reference</th> </tr> </thead> <tbody> <tr> <td>Apply the engineering design process to design, manufacture and evaluate a prototype solution within the aerospace product life cycle (EA1b, D6, P3, P4, G1, G4)</td> <td>MO1</td> </tr> <tr> <td>Apply mathematical and statistical methods within simulation tools in the visualisation, analysis and solution of engineering problems (SM2b, EA1b, D3b, P8)</td> <td>MO2</td> </tr> <tr> <td>Demonstrate knowledge and understanding of aircraft composition and mechanical, hydraulic and electrical systems and the underlying scientific and engineering principles of their operation (SM1b)</td> <td>MO3</td> </tr> <tr> <td>Demonstrate knowledge and understanding of flight performance and planning (SM1b, EA2)</td> <td>MO4</td> </tr> </tbody> </table>	Module Learning Outcomes	Reference	Apply the engineering design process to design, manufacture and evaluate a prototype solution within the aerospace product life cycle (EA1b, D6, P3, P4, G1, G4)	MO1	Apply mathematical and statistical methods within simulation tools in the visualisation, analysis and solution of engineering problems (SM2b, EA1b, D3b, P8)	MO2	Demonstrate knowledge and understanding of aircraft composition and mechanical, hydraulic and electrical systems and the underlying scientific and engineering principles of their operation (SM1b)	MO3	Demonstrate knowledge and understanding of flight performance and planning (SM1b, EA2)	MO4												
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Reading List	<p>The reading list for this module can be accessed via the following link:</p> <p>https://rl.talis.com/3/uwe/lists/D2FB0C7D-B6D0-FF86-D03B-28FF7AFDFF18.html?lang=en-US&login=1</p>																						

Part 5: Contributes Towards

This module contributes towards the following programmes of study:

Aerospace Engineering with Pilot Studies [Sep][SW][Frenchay][4yrs] BEng (Hons) 2020-21

Aerospace Engineering with Pilot Studies [Sep][FT][Frenchay][4yrs] MEng 2020-21

Aerospace Engineering with Pilot Studies [Sep][SW][Frenchay][4yrs] MEng 2020-21

Aerospace Engineering with Pilot Studies [Sep][FT][Frenchay][3yrs] BEng (Hons) 2020-21