MODULE DESCRIPTION FORM

DEPARTMENT OF MECHANICAL AND AEROSPACE ENGINEERING

16351 FLIGHT AND SPACEFLIGHT 2

Module Registrar: Dr Tugrul Comlekci t.comlekci@strath.ac.uk	**Taught To (Course): Cohorts for whom class is compulsory**		
Other Lecturers Involved: Dr Marco Fossati	**Credit Weighting: 10 (ECTS 5)**	**Semester: 1**	
Assumed Prerequisites: 16231 Flight and Spaceflight 1, 16259 Aero Design 1	**Compulsory class**	**Academic Level: 3**	**Suitable for Exchange: N**

Module Format and Delivery (HOURS i.e. 1 credit = 10hrs of study):

Lecture	Tutorial	Laboratory	Group work	External	Online	Project	Assignments	Private Study	**Total**
2			98						100

Educational Aim

Flight and Spaceflight 2 builds on the initial work carried out in Flight and Spaceflight 1 and Aero Design 1 and is intended to develop the student's knowledge through the application of mathematical modelling of an aircraft's stability, control and performance in the design of a small scale UAV.

Learning Outcomes

On completion of the module the student is expected to be able to:

LO1 Apply and implement methods for the analysis of flight mechanics and aerodynamics
LO2 Develop a concept from inception to detail design level
LO3 Examine and implement time-planning and scheduling
LO4 Examine the design process

Syllabus

The class consists of a semester-long group design exercise.

The projects available each year will depend upon the staff involved in this class. A typical project which might be available is:

Design a remote-controlled UAV to carry the maximum payload to mass ratio around a specified course,

or

Design a remote-controlled UAV to carry the most tennis balls around a specified course on one charge of a specified battery.

Assessment of Learning Outcomes

Criteria

For each of the Module Learning Outcomes the following criteria will be used to make judgements on student learning:

LO1

C1 Carry out performance, stability and control calculations on the chosen configuration.

LO2

C1 Creation of the aircraft design demonstrating the students' ability to take a design from concept stage through to detail design stage.

LO3

C1 Create a Gantt chart to demonstrate time and project planning.
C2 Keep a logbook to demonstrate individual time and project planning.

LO4

C1 Write a report to demonstrate the development of the proposed design.
C2 Demonstrate understanding of performance, identifying and implementing modifications to the design as required.

The standards set for each criterion per Module Learning Outcome to achieve a pass grade are indicated on the assessment sheet for all assessment.

Principles of Assessment and Feedback
(Within Assessment and Feedback Policy at: https://www.strath.ac.uk/professionalservices/staff/policies/academic/)

Assessment will be carried out through a laboratory and project reporting according to the following:

Technical logs	45%
Drawings	30%
Presentation	25%

Feedback will be provided throughout the semester by:

- Comments on the completed tech logs
- Informal discussion about the group's aircraft's design
- Constructive comments of the group presentations.

For this module, peer assessment will be applied to the group assignment. Students will evaluate their peers' contributions to the assignment using Myplace. The students' grade will be determined by combining the staff grade for that assignment with the students' weighted contribution – determined from each member's evaluation of the student.

Assessment Method(s) Including Percentage Breakdown and Duration of Exams *(individual weightings)*

Examination				**Coursework**		**Practical**		**Project**	
Number	Month(s)	Duration	***Weighting***	Number	***Weighting***	Number	***Weighting***	Number	***Weighting***
								1	100%
*				*		*		* LO1 – LO4	

* ***L/Os:*** *Indicate which Learning Outcomes (L01, L02, etc) are to be assessed by exam/coursework/practical/project as required.*

Coursework / Submissions deadlines: To be confirmed

Resit Assessment Procedures:
Submission of additional ^^work prior to commencement of the July/August exam diet.

^^Students must contact the module Registrar for details as soon as results confirm that a resit is required

PLEASE NOTE:
Students need to gain a summative mark of 40% to pass the module. Students who fail the module at the first attempt will be re-assessed prior to the July/August exam diet. This re-examination will consist of carrying out additional work as agreed with Module Registrar or an alternate submission of laboratory and/or flight test course reports. No marks from any previous attempts will be transferred to a new resit attempt.

Recommended Reading

*****Purchase recommended **Highly recommended reading *For reference (do NOT purchase)**

** "Fundamentals of Flight" by Shevell, R.S., Prentice Hall, ISBN 133329178
*** "Introduction to Flight ISE" by Anderson, J., Bowden, M.L., McGraw Hill, 9th Edition ISBN 1260597997 · 9781260597998 (2021)

Additional Student Feedback
(Please specify details of when additional feedback will be provided)

Date	Time	Room No

Session: 2024/25

Approved:

Programme Lead / Director Signature: Dr A McLaren
Date of Last Modifications: 09/09/2024

(MAE template updated July 2024)

MODULE TIMETABLE

Module Code:	**16351**	**Module Title:**	**Flight and Spaceflight 2**

Brief Description of Assessment:

Tech logs	45%
Drawings	30%
Presentation	25%

Assessment Timing

Indicated on the table below are the start/submission dates for each assignment/project and the timing of each exam/assessment.

Please note: Timings could change during unforeseen periods of disruption; this should only be used as a guide.

Semester One	W&D Wk	WK1	WK2	WK3	WK4	WK5	WK6	WK7	WK8	WK9	WK10	WK11	Exam Period
	Choose an item. Choose an item.	Choose an item. Choose an item.	Choose an item. Choose an item.	Choose an item. Choose an item.	Peer review Tech log	Choose an item. Choose an item.	Choose an item. Choose an item.	Peer review Tech log	Choose an item. Choose an item.	Choose an item. Choose an item.	Presentation	Peer review Tech log Drawings	Choose an item.

Semester Two	C&D Wk	WK1	WK2	WK3	WK4	WK5	WK6	WK7	WK8	WK9	WK10	WK11	Exam Period
	Choose an item. Choose an item.	Choose an item. Choose an item.	Choose an item. Choose an item.	Choose an item. Choose an item.	Choose an item. Choose an item.	Choose an item. Choose an item.	Choose an item. Choose an item.	Choose an item. Choose an item.	Choose an item. Choose an item.	Choose an item. Choose an item.	Choose an item. Choose an item.	Choose an item. Choose an item.	Choose an item. Choose an item.