



Module Specification

Principles of Flight Test

Version: 2023-24, v2.0, 06 Jul 2023

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Part 1: Information

Module title: Principles of Flight Test

Module code: UFMFAV-15-M

Level: Level 7

For implementation from: 2023-24

UWE credit rating: 15

ECTS credit rating: 7.5

Faculty: Faculty of Environment & Technology

Department: FET Dept of Engineering Design & Mathematics

Partner institutions: None

Field:

Module type: Module

Pre-requisites: None

Excluded combinations: None

Co-requisites: None

Continuing professional development: No

Professional, statutory or regulatory body requirements: None

Part 2: Description

Overview: This module explores flight test principles and processes and their application to support the design, development and certification of aerospace vehicles.

Features: Not applicable

Educational aims: The aim of this module to provide a study of flight test principles at an advanced level building on the flight concepts delivered earlier within the

programme. This module uses illustrated and practical examples, flight simulation exercises and case studies to help consolidate student learning

Outline syllabus: Evolution of aircraft testing and flight safety.

Safety and Regulations including civil and military standards.

Design Organisation Approval - Route to Type Certification.

Aerospace vehicle design, flight test and introduction into service.

Flight Test Organisations and Operations.

Flight test theory and aircraft handling qualities.

Load survey flying and flight envelope assessment.

Instrumentation and systems test equipment,
Data transmission, telemetry, data analysis;

Avionic systems testing and production test flying.

Part 3: Teaching and learning methods

Teaching and learning methods: Flight test principles and related concepts are explored in small group lectorial sessions. Case study sessions allow students to learn collaboratively and consolidate their understanding of the material.

Students will have the opportunity to further consolidate their learning through the flight test planning assessment.

Module Learning outcomes: On successful completion of this module students will achieve the following learning outcomes.

MO1 Identify, apply and evaluate appropriate flight test principles and processes to support the design, development and certification of aerospace vehicles (SM1m, SM2m, SM5m, EA2, D4, P1).

MO2 Plan and execute flight tests to evaluate the flight envelope and handling characteristics of aerospace vehicles (EA3m, EA5m, EA6m, D3, P3, P8m, P11m, G4).

MO3 Demonstrate compliance with civilian or military certification standards through the application of flight test trials (D2, EL5m, P4m, P5, P6, G4)

MO4 Identify and apply appropriate processes such as type and aircraft certification to complete an initial airworthiness assessment of a complex aerospace or aviation design project (D4, D6, EL1m, EL5m, EL6m, P5, P6, P9m)

Hours to be allocated: 150

Contact hours:

Independent study/self-guided study = 114 hours

Case study(ies) = 6 hours

Total = 150

Reading list: The reading list for this module can be accessed at [readinglists.uwe.ac.uk](https://rl.talis.com/3/uwe/lists/D4912BD5-47A6-3E7D-53EC-C0C5FD378E23.html?draft=1&login=1) via the following link <https://rl.talis.com/3/uwe/lists/D4912BD5-47A6-3E7D-53EC-C0C5FD378E23.html?draft=1&login=1>

Part 4: Assessment

Assessment strategy: The assessment for this module is as follows:

A group presentation a on Flight Test planning and strategy assessment (expected group size of 4).

An individual report which requires demonstration of data analysis and independent learning of flight test and principles and processes. The data analysis and independent learning should support the design, development and certification of

aerospace vehicles. The expected output is a 3500 word individual report.

A peer review exercise will be carried out for group work assessment in accordance with the Department Group Work Policy

Resit is the same as the first sit

Resit deliverable(s) will be scaled appropriately to group size and task complexity

Assessment tasks:

Presentation (First Sit)

Description: Presentation on Flight Test Strategy (expected group size of 4)(30 minutes)

Weighting: 25 %

Final assessment: No

Group work: Yes

Learning outcomes tested: MO2, MO3

Report (First Sit)

Description: Individual report on flight test principles, data analysis and their application support the design, development and certification of aerospace vehicles. (Max. 2500 words)

Weighting: 75 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2, MO3, MO4

Presentation (Resit)

Description: Presentation on Flight Test Strategy (expected group size of 4)(30 minutes)

Resit deliverable(s) will be scaled appropriately to group size and task complexity

Weighting: 25 %

Final assessment: No

Group work: Yes

Learning outcomes tested: MO2, MO3

Report (Resit)

Description: Individual report on flight test principles, data analysis and their application support the design, development and certification of aerospace vehicles.

(Max. 2500 words)

Weighting: 75 %

Final assessment: No

Group work: No

Learning outcomes tested: MO1, MO2, MO3, MO4

Part 5: Contributes towards

This module contributes towards the following programmes of study:

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

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