



Module Specification

Aero-Acoustics

Version: 2021-22, v2.0, 07 Jun 2022

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Part 1: Information

Module title: Aero-Acoustics

Module code: UFMEWD-15-M

Level: Level 7

For implementation from: 2021-22

UWE credit rating: 15

ECTS credit rating: 7.5

Faculty: Faculty of Environment & Technology

Department: FET Dept of Engineering Design & Mathematics

Partner institutions: None

Delivery locations: Frenchay Campus

Field: Engineering, Design and Mathematics

Module type: Standard

Pre-requisites: None

Excluded combinations: None

Co-requisites: None

Continuing professional development: No

Professional, statutory or regulatory body requirements: None

Part 2: Description

Overview: Not applicable

Features: Not applicable

Educational aims: See Learning Outcomes

Outline syllabus: Theory and solution methods in generation and propagation of sound. Analytical and numerical aspects will be considered.

Measurement of sound and human factors. Consideration will be given to apparatus and techniques.

Acoustics in the context of aerospace - internal and external to the vehicle.

Part 3: Teaching and learning methods

Teaching and learning methods: The course will be delivered via teaching notes and lectures which will include the use of appropriate teaching aids and demonstrations. There will be tutorials, to complement the lectures, involving numerical problem solving.

Scheduled learning includes lectures and computer practical sessions.

Independent learning includes hours engaged with essential reading, software, case study preparation, assignment preparation and completion etc.

Contact Hours:

Contact: 36 hours

Assimilation and skill development: 42 hours

Coursework: 54 hours

In-class test preparation: 18 hours

Total: 150 hours

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

MO1 Show an appreciation of the practical and human aspects in relation to aero-acoustics

MO2 Demonstrate a thorough understanding of the theory, nature, origin and propagation of sound

MO3 Apply methods of noise reduction in relation to acoustic problems arising in aerospace

MO4 Justify and evaluate specific techniques with regard to acoustic analysis and measurement

Hours to be allocated: 150

Contact hours:

Independent study/self-guided study = 114 hours

Face-to-face learning = 36 hours

Total = 150

Reading list: The reading list for this module can be accessed at [readinglists.uwe.ac.uk](https://uwe.rl.talis.com/modules/ufmewd-15-m.html) via the following link <https://uwe.rl.talis.com/modules/ufmewd-15-m.html>

Part 4: Assessment

Assessment strategy: Strategy: in-class open book test (25%), individual coursework (75%)

The Assessment:

The learning outcomes are examined through two elements:

An in-class open book test around middle of the term to assess students' understanding on aero-acoustics concepts and CFD knowledge and skill;

An individual coursework element designed to assess the students' abilities on

problem solving via the use of suitable numerical simulation software packages.

These two elements aim to develop and enhance their competencies in critically evaluating and analysing modelling results within the context of computational acoustics.

Assessment components:

Examination (Online) - Component A (First Sit)

Description: Online exam (4 hours)

Weighting: 25 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2, MO3, MO4

Practical Skills Assessment - Component B (First Sit)

Description:

Weighting: 75 %

Final assessment: No

Group work: No

Learning outcomes tested: MO1, MO2, MO3, MO4

Examination (Online) - Component A (Resit)

Description: Online examination: 4 hours

Weighting: 25 %

Final assessment: Yes

Group work: No

Learning outcomes tested:

Practical Skills Assessment - Component B (Resit)

Description: Assignment

Weighting: 75 %

Final assessment: No

Group work: No

Learning outcomes tested:

Part 5: Contributes towards

This module contributes towards the following programmes of study:

Aerospace Engineering with Pilot Studies (Design) [Sep][FT][Frenchay][4yrs] MEng 2018-19

Aerospace Engineering (Design) [Sep][FT][Frenchay][4yrs] MEng 2018-19

Aerospace Engineering with Pilot Studies [Sep][FT][Frenchay][4yrs] MEng 2018-19

Aerospace Engineering [Sep][FT][Frenchay][4yrs] MEng 2018-19