

# ES4A7-15 Human Factors of Future Mobility

27/28

**Department**

School of Engineering

**Level**

Undergraduate Level 4

**Module leader**

Roger Woodman

**Credit value**

15

**Module duration**

10 weeks

**Assessment**

100% coursework

**Study location**

University of Warwick main campus, Coventry

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## Description

### Introductory description

ES4A7-15 Human Factors of Future Mobility

[Module web page](#)

### Module aims

This module aims to provide students with comprehensive knowledge of the human factor's challenges associated with current and future mobility. The module will promote an understanding of the key human factors concepts associated with mobility (including autonomous, electric, and micromobility vehicles) and related technologies, infrastructure, schemes, and policies, from initial concept to implementation. This will include anthropometry, safety, trust, acceptance, drive state monitoring, distraction, interaction, wellbeing, and human sensing.

### Outline syllabus

This is an indicative module outline only to give an indication of the sort of topics that may be covered. Actual sessions held may differ.

The module focuses on optimising users' interaction with future mobility (including autonomous, electric, and micromobility vehicles) and related technologies, infrastructure, schemes, and policies, from initial concept to implementation.

## Learning outcomes

By the end of the module, students should be able to:

- Evaluate and understand the human factors principles that underpin the design of a vehicle for occupants and other road users. (M5)
- Consider the role and use of current driver state monitoring systems in vehicle engineering (M5)
- Demonstrate in-depth knowledge and an advanced understanding of the legislative, social, and environmental factors relevant to human factors in current vehicles. (M5, M8)
- Evaluate and design in-vehicle interfaces aimed to improve safety, trust, comfort, and convenience. (M5)
- Communicate in a professional and scientific manner. (M17)

## Indicative reading list

[Reading lists can be found in Talis](#)

## Subject specific skills

Ability to conceive and make a valid argument to support an engineering decision

Ability to develop solutions using published and validated literature

Ability to be pragmatic, taking a systematic approach and the logical and practical steps necessary for, often complex, concepts to become reality

Ability to seek to achieve sustainable solutions to problems and have strategies for being creative and innovative

Ability to be risk, cost and value-conscious, and aware of their ethical, social, cultural, environmental, health and safety, and wider professional engineering responsibilities

Ability to communicate across engineering disciplines in a constructive way to progress a project

## Transferable skills

Apply problem solving skills, information retrieval, and the effective use of general IT facilities

Communicate (written and oral; to technical and non-technical audiences) and work with others

Plan self-learning and improve performance, as the foundation for lifelong learning/CPD

Exercise initiative and personal responsibility, including time management, which may be as a team member or leader

Awareness of the nature of engineering business and enterprise in the creation of economic and social value

Overcome difficulties by employing skills, knowledge and understanding in a flexible manner

Ability to formulate and operate within appropriate codes of conduct, when faced with an ethical issue

Appreciation of the global dimensions of engineering, customers, commerce and communication

Be professional in their outlook, be capable of team working, be effective communicators, and be able to exercise responsibility and sound management approaches.

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## Study

### Study time

| Type          | Required                    |
|---------------|-----------------------------|
| Lectures      | 30 sessions of 1 hour (20%) |
| Private study | 120 hours (80%)             |
| Total         | 150 hours                   |

### Private study description

120 hours guided independent learning

### Costs

No further costs have been identified for this module.

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## Assessment

You must pass all assessment components to pass the module.

Students can register for this module without taking any assessment.

### Assessment group A2

|                      | Weighting | Study time | Eligible for self-certification |
|----------------------|-----------|------------|---------------------------------|
| Assessment component |           |            |                                 |
| Assessment           | 100%      |            | Yes (extension)                 |

**Weighting****Study time****Eligible for self-certification**

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Reassessment component is the same

**Feedback on assessment**

Written comments and electronically marked-up assignment

Cohort level feedback on examinations

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**Availability****Courses**

This module is Core for:

- UESA-H331 MEng Automotive Engineering
  - Year 4 of H331 Automotive Engineering MEng
  - Year 4 of H33A Automotive Engineering with Business Management
  - Year 4 of H33C Automotive Engineering with Robotics MEng
  - Year 4 of H33B Automotive Engineering with Sustainability MEng
- UESA-H332 MEng Automotive Engineering with Intercalated Year
  - Year 5 of H332 Automotive Engineering with Intercalated Year
  - Year 5 of H33D Automotive Engineering with Intercalated Year with Business Management
  - Year 5 of H33F Automotive Engineering with Intercalated Year with Robotics
  - Year 5 of H33E Automotive Engineering with Intercalated Year with Sustainability

This module is Optional for:

- Year 4 of UESA-H114 MEng Engineering
- Year 5 of UESA-H115 MEng Engineering with Intercalated Year