

ES97L-45 Individual Project

21/22

Department

School of Engineering

Level

Taught Postgraduate Level

Module leader

Alan Bloodworth

Credit value

45

Assessment

100% coursework

Study location

University of Warwick main campus, Coventry

Description

Introductory description

ES97L-45 Individual Project

[Module web page](#)

Module aims

This module provides the opportunity to integrate and apply the knowledge and understanding gained in the other core modules of the programme and demonstrate the skills required of professional engineers in an industrial context. This is by means of an individual research project leading to a dissertation. The project provides experience of performing an individual investigative project under the supervision of a member of staff and report its findings both orally and in writing. It provides students with an opportunity to apply and demonstrate their capabilities (engineering knowledge, initiative, enthusiasm, etc.) to plan, carry out, control and execute an open-ended project in a relevant engineering topic of current interest to the industry, making an independent contribution to the topic area, and enhancing their communication skills in writing and orally.

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.

Application of research and scientific method to a set problem: Students will agree a project brief with their project supervisor that may be related to their own field of employment, and carry out an in-depth experimental, analytical, theoretical or computational investigation of the topic.

Learning outcomes

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

- Extrapolate existing knowledge and experience and apply in an integrated systems approach to solve a complex and unfamiliar engineering problem.
- Extract and critically evaluate relevant data in order to apply engineering analysis and advanced problem solving skills, in order to complete an engineering project to the satisfaction of a customer and/or user.
- Use innovative techniques, materials or methods in delivering the project.
- Interpret a project brief and integrate their knowledge to develop a research methodology to meet that brief through critical thinking and analysis.
- Consider the wider context of the project including, risk, ethics, environmental and sustainability limitations, intellectual property rights, codes of practice and standards, health and safety and liability, to inform the project specification (problem brief) as relevant to the project.
- Plan and manage a project from the initial brief to a deliverable outcome
- Demonstrate effective communication, both verbal and written, to a technical and non-technical audience.
- Develop skills in advanced research methods appropriate to advanced engineering and/or technology relevant to the project brief

Research element

The project provides experience of performing an individual investigative project under the supervision of a member of staff and report its findings both orally and in writing. It provides students with an opportunity to apply and demonstrate their capabilities (engineering knowledge, initiative, enthusiasm, etc.) to plan, carry out, control and execute an open-ended project in a relevant engineering topic of current interest to the industry, making an independent contribution to the topic area, and enhancing their communication skills in writing and orally.

Subject specific skills

1. Ability to conceive, make and realise a component, product, system or process
2. Ability to develop economically viable and ethically sound sustainable solutions
3. Ability to be pragmatic, taking a systematic approach and the logical and practical steps necessary for, often complex, concepts to become reality
4. Ability to seek to achieve sustainable solutions to problems and have strategies for being creative and innovative
5. Ability to be risk, cost and value-conscious, and aware of their ethical, social, cultural, environmental, health and safety, and wider professional engineering responsibilities

Transferable skills

1. Numeracy: apply mathematical and computational methods to communicate parameters, model and optimize solutions
 2. Apply problem solving skills, information retrieval, and the effective use of general IT facilities
 3. Communicate (written and oral; to technical and non-technical audiences) and work with others
 4. Plan self-learning and improve performance, as the foundation for lifelong learning/CPD
 5. Exercise initiative and personal responsibility, including time management, which may be as a team member or leader
 6. Awareness of the nature of business and enterprise in the creation of economic and social value
 7. Overcome difficulties by employing skills, knowledge and understanding in a flexible manner
 8. Ability to formulate and operate within appropriate codes of conduct, when faced with an ethical issue
 9. Appreciation of the global dimensions of engineering, commerce and communication
 10. 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 |
|---------------------|------------------------------|
| Project supervision | 24 sessions of 1 hour (100%) |
| Total | 24 hours |

Private study description

Guided independent learning 426 Hours

Costs

No further costs have been identified for this module.

Assessment

You must pass all assessment components to pass the module.

Assessment group A4

| | Weighting | Study time | Eligible for self-certification |
|---|-----------|------------|---------------------------------|
| Assessment component | | | |
| Final Presentation | 30% | | No |
| Individual presentation, duration 25 minutes. | | | |

Reassessment component is the same

Assessment component

| | | | |
|---|-----|--|----|
| Dissertation | 70% | | No |
| Maximum 15,000 words, excluding figures and tables. | | | |

Reassessment component is the same

Feedback on assessment

Verbal feedback meetings with project supervisor

Written and/or verbal feedback on Project Proposal

Written feedback on Literature Review

Written and verbal feedback on Draft Dissertation

Written comments on final Dissertation

Written comments and verbal feedback on Final Presentation

Availability

Courses

This module is Core for:

- Year 2 of TESS-H214 Postgraduate Taught Tunnelling and Underground Space

This module is Core optional for:

- Year 2 of TESS-H214 Postgraduate Taught Tunnelling and Underground Space