

# ES97N-60 Project

**20/21**

**Department**

School of Engineering

**Level**

Taught Postgraduate Level

**Module leader**

Ken Mao

**Credit value**

60

**Module duration**

45 weeks

**Assessment**

100% coursework

**Study location**

University of Warwick main campus, Coventry

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## Description

### Introductory description

ES97N-60 Project

[Module web page](#)

### Module aims

To demonstrate that the student has independently contributed primary data and/or a new analysis of secondary data, within their chosen advanced research topic. Projects will be highly variable in nature to reflect the range of topics within the programmes of study but all will provide students with an opportunity to achieve the learning outcomes. Thus, projects may entail experimentation, modelling, analysis and literary survey skills to develop advanced skills in the discovery and occasionally creation of new knowledge. The module also offers the chance for students to pursue curiosity driven work guided by an academic supervisor.

### 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.

A series of lectures, seminars and tutorials are provided to cover the generic skills in project work within the Research Methods and Professional Skills module. A project topic may be selected from published lists or, alternatively, students may themselves propose suitable topics in consultation with potential supervisors. Projects are allocated during term 1 and preparatory work takes place during terms 1 and 2. The main work is undertaken during terms 2 and 3. Students will utilise research skills and methodologies appropriate to the project using the information provided during the lectures, seminars and tutorials, the guidance of their supervisor.

## Learning outcomes

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

- 1. Display enhanced knowledge and understanding of scientific principles of the engineering topic of their individual project.
- 2. Apply advanced engineering knowledge to problems in an efficient and effective manner.
- 3. Exhibit critical awareness of the state of the art and current developments in the field of the project.
- 4. Design and plan a project defining aims and objectives, timescales, requirements, constraints and commercial & environmental context as appropriate.
- 5. Evaluate risk issues including general project risks, time, uncertainty, information, data, ethical, intellectual property rights, codes of practice and standards and create a project plan which demonstrates appropriate risk management.
- 6. Apply and integrate knowledge and principles from a range of disciplines as appropriate to analyse and solve a problem.
- 7. Comprehensively analyse and assess results and communicate feasibility of implementation to technical and non-technical audiences.
- 8. Demonstrate experience of conducting and reporting on a piece of 'original' individual research or 'innovative' design work.
- 9. Exhibit experience and evidence of enhancement in some or all of the following research methodology dependent discipline-specific practical skills: Use of appropriate engineering analysis, software and IT tools. Design and implementation of appropriate and safe laboratory experiments. Safe testing of design ideas in a research laboratory.

## Indicative reading list

A full project handbook is provided:

<https://warwick.ac.uk/fac/sci/eng/eso/students/pgt/project>

## Research element

Students will conduct research in an area allied to their degree programme.

## Interdisciplinary

Research may cross engineering disciplines and reflect the general interdisciplinary nature of the School of Engineering.

## Subject specific skills

1. Ability to develop economically viable and ethically sound sustainable solutions
2. Ability to be pragmatic, taking a systematic approach and the logical and practical steps necessary for, often complex, concepts to become reality
3. Ability to seek to achieve sustainable solutions to problems and have strategies for being creative and innovative
4. 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.
  6. Overcome difficulties by employing skills, knowledge and understanding in a flexible manner
  7. Ability to formulate and operate within appropriate codes of conduct, when faced with an ethical issue
  8. Be professional in their outlook, be effective communicators, and be able to exercise responsibility and sound management approaches.
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## Study

### Study time

Type	Required
Lectures	(0%)
Seminars	(0%)
Tutorials	(0%)
Project supervision	20 sessions of 1 hour (3%)
Private study	580 hours (97%)
Total	600 hours

### Private study description

Guided independent learning 580 hours  
Supervisor e-mails and advice during the project

## 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.

### Assessment group A1

	Weighting	Study time	Eligible for self-certification
<b>Assessment component</b>			
Written final technical report	85%		No
Technical report			
Reassessment component is the same			
<b>Assessment component</b>			
Project management plan and log book	15%		No
Project management and log book			
Reassessment component is the same			

### Feedback on assessment

- Supervisory meetings;
  - Student support through advertised advice and feedback hours;
  - The technical report will be independently marked by two assessors (one being the Project Supervisor), and a third academic will act as the moderator combining feedback for the student. Comments will be given in support of project marks.
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## Availability

## Courses

This module is Core for:

- Year 1 of TESA-H341 Postgraduate Taught Advanced Mechanical Engineering
- Year 1 of TESA-H800 Postgraduate Taught Biomedical Engineering
- Year 1 of TESA-H641 Postgraduate Taught Communications and Information Engineering
- Year 1 of TESA-H643 Postgraduate Taught Electrical Power Engineering
- Year 1 of TESA-H642 Postgraduate Taught Energy and Power Engineering
- Year 1 of TESA-H1A0 Postgraduate Taught Sustainable Energy Technologies

This module is Core optional for:

- Year 2 of TESA-H1A0 Postgraduate Taught Sustainable Energy Technologies