

**Summary Information**

<b>Module Code</b>	5527USST
<b>Formal Module Title</b>	Professional Practice Integrative Project
<b>Owning School</b>	Engineering
<b>Career</b>	Undergraduate
<b>Credits</b>	20
<b>Academic level</b>	FHEQ Level 5
<b>Grading Schema</b>	40

**Module Contacts**

**Module Leader**

Contact Name	Applies to all offerings	Offerings
Dante Matellini	Yes	N/A

**Module Team Member**

Contact Name	Applies to all offerings	Offerings
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**Partner Module Team**

Contact Name	Applies to all offerings	Offerings
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**Teaching Responsibility**

<b>LJMU Schools involved in Delivery</b>
LJMU Partner Taught

## Partner Teaching Institution

Institution Name
University of Shanghai For Science and Technology

## Learning Methods

Learning Method Type	Hours
Lecture	11
Practical	33

## Module Offering(s)

Offering Code	Location	Start Month	Duration
JAN-PAR	PAR	January	12 Weeks

## Aims and Outcomes

<b>Aims</b>	To enable students to develop the skills required to practice as a professional engineer. This module provides a broad range of experiences with an emphasis upon the systematic thinking, planning and execution required of engineers in a modern professional environment. The students will be required to design build and test an electronic product to a given specification. The product will incorporate elements covered elsewhere on the course, including analogue electronics and a programmable device such as a microcontroller, a motor and sensors.
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## Learning Outcomes

After completing the module the student should be able to:

Code	Description
MLO1	Design, build and test an electronic product to a given specification.
MLO2	Demonstrate an awareness of career planning and professional bodies such as the IET.
MLO3	Employ a component data sheet to determine the suitability of the component for a given application.
MLO4	Demonstrate a commitment to conduct engineering activities in a professional manner.
MLO5	Research a topic, find relevant literature and produce a critical review.
MLO6	Demonstrate an awareness of the importance of management in the context of engineering projects. Apply principles of project management to the allocation of tasks and resources.

## Module Content

### Outline Syllabus

The list below provides an indicative list of topics which may be covered in this module:

#### Experimental Practice

- Complete a set of laboratory experiments
- Observation, measurement and recording of experimental results
- Data handling
- Presenting and reporting of results

#### Professional Development

- World of Work: Silver Award
- Health & Safety
- Ethics
- Institutional Code of Conduct

#### Research Methods

- Research & Library Skills
- Report Writing
- Critical Thinking

## Module Overview

## Additional Information

The professional development portion of the module is assessed on a pass/fail basis. Students must complete the assessment exercises to a satisfactory standard in order to achieve a pass grade in this module.

### General Notes

### UNESCO Sustainable Development Goals

1. Quality Education
2. Gender Equality
3. Decent Work and Economic Growth
4. Industry, Innovation and Infrastructure
5. Reduced Inequalities
6. Responsible Consumption and Production
7. Partnerships for the Goals

### UK SPEC AHEP 4

#### CEng.

M2 Formulate and analyse complex problems to reach substantiated conclusions. This will involve evaluating available data using first principles of mathematics, statistics, natural science and engineering principles, and using engineering judgment to work with information that may be uncertain or incomplete, discussing the limitations of the techniques employed.

M3 Select and apply appropriate computational and analytical techniques to model complex problems, discussing the limitations of the techniques employed.

M4 Select and critically evaluate technical literature and other sources of information to solve complex problems.

M5 Design solutions for complex problems that evidence some originality and meet a combination of societal, user, business and customer needs as appropriate. This will involve consideration of applicable health and safety, diversity, inclusion, cultural, societal, environmental and commercial matters, codes of practice and industry standards

M6 Apply an integrated or systems approach to the solution of complex problems.

M7 Evaluate the environmental and societal impact of solutions to complex problems (to include the entire lifecycle of a product or process) and minimise adverse impacts.

M8 Identify and analyse ethical concerns and make reasoned ethical choices informed by professional codes of conduct.

M9 Use a risk management process to identify, evaluate and mitigate risks (the effects of uncertainty) associated with a particular project or activity.

M10 Adopt a holistic and proportionate approach to the mitigation of security risks.

M11 Adopt an inclusive approach to engineering practice and recognise the responsibilities, benefits and importance of supporting equality, diversity and inclusion.

M12 Use practical laboratory and workshop skills to investigate complex problems.

M13 Select and apply appropriate materials, equipment, engineering technologies and processes, recognising their limitations.

M15 Apply knowledge of engineering management principles, commercial context, project and change management, and relevant legal matters including intellectual property rights.

M16 Function effectively as an individual, and as a member or leader of a team. Evaluate effectiveness of own and team performance.

M17 Communicate effectively on complex engineering matters with technical and non-technical audiences, evaluating the effectiveness of the methods used.

M18 Plan and record self-learning and development as the foundation for lifelong learning/CPD.

IEng.

B1 Apply knowledge of mathematics, statistics, natural science and engineering principles to broadly-defined problems. Some of the knowledge will be informed by current developments in the subject of study.

B2 Analyse broadly-defined problems reaching substantiated conclusions using first principles of mathematics, statistics, natural science and engineering principles.

B3 Select and apply appropriate computational and analytical techniques to model broadly-defined problems, recognising the limitations of the techniques employed.

B4 Select and evaluate technical literature and other sources of information to address broadly-defined problems.

B5 Design solutions for broadly-defined problems that meet a combination of societal, user, business and customer needs as appropriate. This will involve consideration of applicable health and safety, diversity, inclusion, cultural, societal, environmental and commercial matters, codes of practice and industry standards.

B6 Apply an integrated or systems approach to the solution of broadly-defined problems.

B7 Evaluate the environmental and societal impact of solutions to broadly-defined problems.

B8 Identify and analyse ethical concerns and make reasoned ethical choices informed by professional codes of conduct.

B9 Use a risk management process to identify, evaluate and mitigate risks (the effects of uncertainty) associated with a particular project or activity

B10 Adopt a holistic and proportionate approach to the mitigation of security risks

B11 Recognise the responsibilities, benefits and importance of supporting equality, diversity and inclusion.

B12 Use practical laboratory and workshop skills to investigate broadly-defined problems.

B13 Select and apply appropriate materials, equipment, engineering technologies and processes.

B14 Recognise the need for quality management systems and continuous improvement in the context of broadly-defined problems.

B15 Apply knowledge of engineering management principles, commercial context, project management and relevant legal matters.

B16 Function effectively as an individual, and as a member or leader of a team.

B17 Communicate effectively with technical and non-technical audiences.

B18 Plan and record self-learning and development as the foundation for lifelong learning/CPD.

## Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Learning Outcome Mapping
Report	Lit review/project plan	20	0	MLO5, MLO6
Test	Online quizzes	40	0	MLO2, MLO3
Presentation	Presentation	40	0	MLO1, MLO3, MLO4