WM3B5-30 Work Based Project (APEP)

26/27

Department
WMG
Level
Undergraduate Level 3
Module leader
India Palmer
Credit value
30
Module duration
36 weeks
Assessment
Multiple
Study locations
University of Warwick main campus, Coventry Primary
Distance or Online Delivery

Description

Introductory description

The work-based project module offers apprentices the opportunity to undertake a significant piece of work-based engineering research. Apprentices will be required to demonstrate problem solving and project management skills whilst applying engineering principles and complying with safety requirements. This project may also add value to their organization and acts as the major project of an undergraduate engineering programme in line with accreditation requirements. Project proposals will be generated by students in discussion with their line manager/work based mentor and University academic staff. With the project being focused in the workplace, supervision will be undertaken by both the University and the employer to ensure alignment with parallel objectives.

The project is mapped to specific knowledge, skills and behaviours (KSBs) from each apprenticeship standard within APEP - ST0023, ST0024, ST0025 & ST0027. Apprentices may also demonstrate additional KSBs, depending on the exact nature of their chosen project.

This module is linked with C1, C2, C4, C5, C7, C8, C9, C13, C15 & C17 of the AHEP 4.

LO1-C8 LO2-C4 LO3-C7, C9 LO4-C13,C15 LO5-C1,C2,C5,C17

Module web page

Module aims

The aim of this module is to undertake independent engineering study, drawing on the knowledge, skills and behaviours developed during the apprenticeship and applying them to a specific work context.

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.

Work-based and self-directed learning
Management and organisation of self and work-based project
Developing practitioner research skills and applying them within a specific work context
Selecting a project and generating research questions
Formulation of relevant objectives to address academic and organisational needs
Scoping and management of the project
Development of a robust proposal
Carrying out literature research
Primary research methods
Data analysis methods relevant to the chosen topic
Presentation of results
Presentation of the project to meet academic and organisational needs

Learning outcomes

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

- Define a research question and generate aims and objectives which seek to solve an existing problem or make an improvement for the employer. [AHEP:4 - C8]
- Critically analyse existing literature, including industry publications, relevant to the chosen research topic. [AHEP:4 - C4]
- Evaluate and apply appropriate research methods to answer the research question, including risk management practices, research ethics and health and safety. [AHEP:4 - C7, C9]
- Demonstrate proficiency in utilising project management tools, specifically for planning and resource management. [AHEP:4 - C13, C15]
- Effectively communicate the project's outcomes, critically analysing and presenting its results. [AHEP:4 - C1, C2, C5, C17]

Indicative reading list

Reading lists can be found in Talis

Specific reading list for the module

Research element

This project module requires apprentices to make a reasoned selection of approaches to the research methodology, data collection techniques and data analysis, including the development of appropriate aims and objectives and abiding by ethical, social and environmental considerations.

Subject specific skills

Comply with statutory and organisational safety requirements and demonstrate a responsible and disciplined approach to risk mitigation, avoidance and management (S1 on all standards)
Undertake project management and schedule of engineering activities (S2 on ST0025)
Use and interpret a range of engineering data sources and supporting documentation (S2 on ST0023)
Organise work efficiently and effectively by managing engineering resources when completing tasks (S3 on ST0027)
Secure and manage appropriate resources (S3 on ST0025)
Lead complex maintenance or technical support activities (S3 on ST0023)
Produce presentations and work to engineering specifications and briefs, presenting and technical problem solving (S3 on ST0024)
Carry out Project Management activities (S5 on ST0027, S2 on ST0024)

Qualitative and quantitative analysis
Research methods and information gathering
Ethical, social and environmental issues in engineering.
Additional skill will depend on the topic of the project and the specific apprenticeship. All projects will draw on aspects of the course and apply them throughout the project. The project is seen as an opportunity to aggregate the subject skills developed throughout the course and synthesise them to address an identified, real world situation.

Transferable skills

Problem solving: Use rational and logical reasoning to deduce appropriate and well-reasoned conclusions Critical Thinking: Make informed decisions on the value of a range of sources allowing an evidence based
conclusion based on this analysis.
Self-awareness: Awareness of personal strengths and emotional intelligence.
Written communication: Present arguments, knowledge and ideas, in a range of formats
Communication Active Listening: questioning, reflecting, summarizing
Professionalism: Prepared to operate autonomously; Aware of how to be efficient and resilient; Manages
priorities and time; Self-motivated, setting and achieving goals, prioritising tasks.
Information Literacy: Critical awareness of how information is gathered, used, managed and synthesised;
Systematic collection, analysis and evaluation of information in the investigation of a topic.

Study

Study time

Type	Required
Seminars	5 sessions of 1 hour (2%)
Project supervision	10 sessions of 1 hour (3%)
Work-based learning	55 sessions of 1 hour (19%)
Online learning (independent)	40 sessions of 1 hour (14%)
Other activity	4 hours (1%)
Assessment	180 hours (61%)
Total	294 hours

Private study description

No private study requirements defined for this module.

Other activity description

Other activity:
4 hours of online support/consultancy for the assignments

Work based learning details of 55 hours is as follows:

- To meet with Work Based Supervisor across the length of their project (10-20 hours)
- To review company information (documents, datasets, logs, etc) to understand the work related aspects of their project and/or to develop ideas for a project to complete (15-25 hours)
- To discuss their project with colleagues throughout the academic year in order to gain feedback, share ideas, access support and/or practice specific KSBs/skills (12 hours)
- To understand and follow company safety (physical, online, ethical, etc) information in relation to their project (8 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
Project Proposal	15%	30 hours	Yes (extension)

The project proposal will cover:

1. Context and background information
2. Research aims and objectives
3. Indicative methods
4. Initial risk identification and possible mitigation
5. Environmental, societal and ethical implications
6. Initial project plan

This will form a single individual submission consisting of a written report.

Progress update	15%	30 hours	Yes (extension)

The progress update will cover:

1. Evaluate and apply project management techniques
2. Estimate project resources and costs
3. Completion of the ethical approval process
4. Reflection of progress and plan for next steps

This will form:

1. An individual submission consisting of a written report
2. Submission of the ethical approval process online form.

Final report	70%	120 hours	Yes (extension)

The final report will cover:

1. Introduction and background (including aims and objectives)
2. Literature review
3. Methodology
4. Results
5. Discussion
6. Conclusions
7. Project evaluation and reflection

This will form a single individual submission consisting of a written report.

Assessment group R1

	Weighting	Study time	Eligible for self-certification
Project management review	15%		No

The project management review will consist of a critical assessment of the project management of the final year project, which is a core learning element of the module. This should include

	Weighting	Study time	Eligible for self-certification

reflection on the following:

1. Project management techniques used and their effectiveness
2. Estimated project resources and costs and changes over the course of the project
3. Completion of the ethical approval process

Final report	70%		No

The final report will cover:

1. Introduction and background (including aims and objectives)
2. Literature review
3. Methodology
4. Results
5. Discussion
6. Conclusions
7. Project evaluation and reflection

This will form a single individual submission consisting of a written report.

Project initiation review	15%		No

The project initiation review will consist of a critical assessment of the project initiation phase of the final year project, which is a core learning element of the module. This should include reflection on the following:

1. Developing a project
2. How the project sought to solve an existing problem or make an improvement for the employer
3. Creating the research aims and objectives
4. Initial risk identification and possible mitigation 5. Environmental, societal and ethical implications

This will form a single individual submission consisting of a 5 minute audio or video report.

Feedback on assessment

Formative Feedback:

- Automated individual feedback on online Quizzes
- Verbal formative feedback during online Q&A sessions
- Verbal individual feedback during supervisor meetings

Summative Feedback:

- Written individual feedback on all summative submissions.

Past exam papers for WM3B5

Availability

Pre-requisites

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Courses

This module is Core for:

- Year 4 of DWMS-H7C7 Undergraduate Applied Professional Engineering (Control/Technical Support Engineer) (Degree Apprenticeship)
- Year 4 of DWMS-H7C6 Undergraduate Applied Professional Engineering (Electrical/Electronic Support Engineer) (Degree Apprenticeship)
- Year 4 of DWMS-H7C5 Undergraduate Applied Professional Engineering (Manufacturing Engineer) (Degree Apprenticeship)
- Year 4 of DWMS-H7C8 Undergraduate Applied Professional Engineering (Product Design and Development Engineer) (Degree Apprenticeship)