Module Specification

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Module code	ENG4A2
Module title	Work Based Investigation and Learning
Level	4
Credit value	20
Faculty	FAST
HECoS Code	100184
Cost Code	GAME

Programmes in which module to be offered

Programme title	Is the module core or option for this programme
FdEng Industrial Engineering (Mechanical) FdEng Industrial Engineering (Electrical and Automation) FdEng Industrial Engineering (Manufacturing and Production)	Core

Pre-requisites

None

Breakdown of module hours

Learning and teaching hours	36 hrs
Placement tutor support	0 hrs
Supervised learning e.g. practical classes, workshops	0 hrs
Project supervision (level 6 projects and dissertation modules only)	0 hrs
Total active learning and teaching hours	36 hrs
Placement / work based learning	0 hrs
Guided independent study	164 hrs
Module duration (total hours)	200 hrs

For office use only	
Initial approval date	22/08/2022

For office use only	
With effect from date	September 2022
Date and details of revision	
Version number	1

Module aims

To facilitate the learning and development of a student engineer by means of practical work based learning in an industrial environment.

Module Learning Outcomes - at the end of this module, students will be able to:

1	Plan and organise activities in the workplace with consideration to a number of real world factors, including the likes of sustainability and finance via the undertaking of work-related projects utilising sector-specific skills.
2	Research information applicable to tasks, develop/align technical theories and apply them to a task.
3	Produce structured technical reports on complicated tasks carried out, including research and applied theory.
4	Deliver a technical project report and via means of a presentation using various methods both verbal and visual as appropriate to the audience.
5	Demonstrate the ability to operate within the organisation's Health and Safety policies and procedures in the workplace, including the likes of risk assessment.

In addition to the module learning outcomes, students will also cover the following accreditation of higher education programme (AHEP) fourth edition learning outcomes: F2, F5, F6, F9, F10, F11, F15, F17.

Assessment

Indicative Assessment Tasks:

This section outlines the type of assessment task the student will be expected to complete as part of the module. More details will be made available in the relevant academic year module handbook.

Assessment – Portfolio and Report of work relating to work based activities.

The first assessment is a portfolio and will consist of a minimum of 2 reports and one presentation based on separate and different work based activities, spread across the academic year and aligned to the day-day work within the student's workplace. The portfolio addresses learning outcomes 1-4. These portfolio reports (i.e. not the Health and Safety report in assessment one) will cover a range of activities which could include maintenance activities, engineering improvements etc. Each element must cover the following, Applicable Technical Content, Application of Theory, Demonstrate Knowledge and Understanding of the work in hand, Evidence of Research and be professionally presented including referencing and layout. Each report would typically have a word count of 1500 (or equivalent if applicable).

The second assessment is a Health and Safety report (policies and procedures) and addresses learning outcome 5. The health and safety report would report would typically have a word count of 1500 or (equivalent if applicable).

For the presentation, an invitation can be extended to the industry mentor to be in attendance.

They should all provide a clear overview of the topic investigated including explanations and summary of results together with an analysis of their relevance, limitations and how the results relate to the objectives of the engineering investigation.

Assessment number	Learning Outcomes to be met	Type of assessment	Weighting (%)
1	1-4	Portfolio	75
2	5	Written Assignment	25

Derogations

A derogation from regulations has been approved for this module which means that whilst the pass mark is 40% overall, each element of assessment (where there is more than one assessment) requires a minimum mark of 30%.

Learning and Teaching Strategies

Work-based supervisor, Module leader, student and Mentor decide upon a proposed topic which should involve the student in 200 notional hours of work and study. Specific training undertaken may form part of the notional hours. The relationship between the FdEng programme and the work-based assignment should be clearly identified. The work used for this module may be part of the students' normal workload or some activity designed specially to deliver the required evidence for the assessment of this module. In either case, the negotiation and planning required should be completed and agreed before commencement of the detailed practical work.

The module will be presented to students through a specified series of lectures and workshops assisted by notes via the University's VLE platform. Lectures will deliver key concepts, ideas, theories and examples. Relevant videos may also be used to aid the learning process.

An active and inclusive approach is used to engage learners in the topics and will involve individual, group work and flipped learning experiences aligned to the university's Active Learning Framework (ALF). The approach offers students a flexible and adaptive learning experience that can accommodate a range of options that includes both on campus learning and remote learning where appropriate.

The Moodle VLE and other on-line materials and resources will be available to support learning. ALF offers a balance between the classroom elements and digitally enabled activity incorporating flexible and accessible resources and flexible and accessible feedback to support learning.

Indicative Syllabus Outline

- Negotiate and plan a work-based topic for investigation.
- Carryout work safely conforming to codes of practice.

- Conduct checks on engineering product/asset compliance with specifications.
- Examine new/upcoming technologies, products, devices and software. Contemplate their suitability for replacement of legacy equipment.
- Provide documentation, including systematic records of work undertaken; record and tabulate observations/test results and conclusions where appropriate.
- Investigate, understand and apply Health and Safety guidelines to activities
- Carry out work with regards to sustainability and ethics.

Indicative Bibliography:

Please note the essential reads and other indicative reading are subject to annual review and update.

Essential Reads

K. Kogon, J. Wood and S. Blakemore, *Project Management for the Unofficial Project Manager.* Dallas: BenBella Books, 2015.

Other indicative reading

G. Horine, *Project Management: Absolute Beginners Guide.* 4th ed. Indiana: Que Publishing, 2017.

K. Hoag, *Skills Development for Engineers.* London: IET publishing, 2001.

Employability skills – the Glyndŵr Graduate

Each module and programme is designed to cover core Glyndŵr Graduate Attributes with the aim that each Graduate will leave Glyndŵr having achieved key employability skills as part of their study. The following attributes will be covered within this module either through the content or as part of the assessment. The programme is designed to cover all attributes and each module may cover different areas.

Core Attributes

Engaged
Enterprising
Creative
Ethical

Key Attitudes
Commitment
Curiosity
Resilience
Confidence
Adaptability

Practical Skillsets
Digital Fluency
Organisation
Leadership and Team working
Critical Thinking
Emotional Intelligence
Communication