Module Specification

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Module Code	ENGM66
Module Title	Dissertation
Level	Level 7
Credit value	60
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
MSc Engineering (Aeronautical) MSc Engineering (Aeronautical) with Advanced Practice MSc Engineering (Mechanical Manufacture) MSc Engineering (Mechanical Manufacture) with Advanced Practice MSc Engineering (Automotive) MSc Engineering (Automotive) with Advanced Practice MSc Engineering (Renewable & Sustainable Energy) MSc Engineering (Renewable & Sustainable Energy) with Advanced Practice MSc Engineering (Electrical & Electronic) MSc Engineering (Electrical & Electronic) with Advanced Practice MSc Engineering (Management) MSc Engineering (Management) with Advanced Practice MSc Composite Materials Engineering MSc Composite Materials Engineering with Advanced Practice MSc Unmanned Aircraft System (UAS) Technology MSc Unmanned Aircraft System (UAS) Technology with Advanced Practice	Core

Pre-requisites

None

Breakdown of module hours

Learning and teaching hours	2 hr
Placement tutor support	0 hrs
Supervised learning e.g., practical classes, workshops	0 hrs
Project supervision (level 6 projects and dissertation modules only)	18 hrs

Total active learning and teaching hours	**20** hrs
Placement / work-based learning	0 hrs
Guided independent study	580 hrs
Module duration (total hours)	600 hrs

For office use only	
Initial approval date	Jun 2018
With effect from date	Sept 2022
Date and details of revision	Aug 22: learning outcomes, assessment and syllabus update in engineering revalidation
Version number	4

Module aims

- To enable the students to demonstrate their competence by planning, conducting research and completing and submitting a substantial dissertation independently under appropriate supervision and guidance.

- To develop the students with the skills on critical evaluation of current research work in the areas of study.

- To conduct the development and intensive exploration of an area of personal interest and enthusiasm related to the programmes of study using the in-depth knowledge acquired in the other modules of the programme.

- To prepare students for employment and undertaking research in the respective engineering areas of Aeronautical, Mechanical Manufacturing, Automotive, Management, Composite Materials Renewable & Sustainable Energy, Electrical & Electronic Engineering, and Unmanned Aircraft System Technology.

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

In addition to the module learning outcomes, students will also cover the following accreditation of higher education programme (AHEP) fourth edition learning outcomes: **M1, M2, M4** & **M17**

1	Define and justify the viability of a precise research project in the light of present state of the art technological advances and current research in the subject area.
2	Demonstrate the ability in applying deep knowledge and research principles to theoretical and practical problems in the project related to the programme of study.
3	Critically evaluate technological advances in the area of study and innovative use of new methods and techniques in solving critical problems in the research project.
4	Self-manage time and other resources in the preparation and completion of an extensive research project, including the adaptation of original research plans.

5	Communicate research output in a professional manner both orally and in writing.

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 will be by means of an informal progress review and the submission of the final research dissertation together with a final presentation and a viva. The informal progress review, two months into the project for full time students and four months after the start of the project for part time students, constitutes an important milestone to check progress, provide feedback and allow students to alter the project plan accordingly if needed.

Assessment One: Students may elect to either.

Option A: Prepare a formal dissertation (15000 words) based upon an in-depth literature review and the findings of their research project.

Option B: Complete a journal article (3000 words) based solely upon work undertaken in their research project. The style and formatting of the article are to be agreed with the module leader and must conform to a named and appropriate national / international refereed journal.

Assessment one is a written assessment and represents 80% of the overall mark.

Assessment Two: ALL students will complete a short presentation (20 min) and oral examination based upon defence of their dissertation. It is expected that this is conducted face-to-face but could be arranged via an online conference (such as Zoom or MS Teams) where appropriate. Assessment two is an oral assessment (30 min) and represents 20% of the overall mark.

Assessment number	Learning Outcomes to be met	Type of assessment	Weighting (%)
1	1-4	Dissertation/Project	80%
2	5	Oral Assessment	20%

Derogations

Credits shall be awarded by an assessment board for those Level 7 modules in which an overall mark of at least 50% has been achieved with a minimum mark of 40% in each assessment element.

Learning and Teaching Strategies

Students will be guided towards an appropriate research topic aligned to the enrolled programme during the delivery of the Engineering Research Methods and Postgraduate Studies module. This may be a current research topic of a member of staff, a topic suggested by industry or a topic of particular interest to a student or his or her employer or sponsor.

Where practical, students may apply relevant learning to their workplace through applied projects and utilising real-world examples within their research.

An informal research progress review, covering the progress and plans for completion of project work and dissertation, takes place two months after the start of the project for full-time students and four months for part-time students. The progress review is organised by the project supervisor, who provides feedback on progress and advice on the future course of action for the timely successful completion of the project.

Regular timetabled meetings will be held between students and supervisors to discuss the development and progress of the research project and dissertation. The completed Dissertation will normally be submitted at the end of the 12-month study period from the start of the MSc course for full time mode or at the end of the study period for the part time students. In conjunction with the submission of the dissertation, a final presentation will be organised which focuses on how the students work on the programme, and particularly the dissertation project, would benefit the respective industry.

This module will also follow the ALF (Active Learning Framework) guidelines, which will include alternative methods of assessment and a blended approach to delivery, with some theory and software sessions being delivered online (depending on requirements and student experience).

Indicative Syllabus Outline

Supervised independent work leading to the submission of a dissertation of 15,000 based on innovative research and development work conducted with an awareness of current scholarship.

- Critical reading
- Research Project management
- Data Management and Reporting
- Statistics for Research
- Dissertation Planning
- The peer review process
- Mastering the *Viva Voce*

Indicative Bibliography:

Essential Reads

E. Fisher and D. Holtom, *Enjoy writing your science thesis or dissertation! a step by step guide to planning and writing dissertations and theses for undergraduate and graduate science students.* London: Imperial College Press, 1999.

Other indicative reading

N. J. Salkind, *Exploring Research.* 7th ed. New York: Prentice Hall, 2008.

H. Silyn-Roberts, *Writing for science and engineering: papers, presentations, and reports.* Amsterdam: Elsevier, 2013.

L. Blaxter, C. Hughes and M. Tight, *How to Research.* 4th ed. Maidenhead: Open University Press, 2010.

P. Cryer, *The research student's guide to success.* 3rd ed. Maidenhead: Open University Press, 2006.

Plus, various others to be signposted on Moodle.

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
Critical Thinking
Emotional Intelligence
Communication