



**Swansea University
Prifysgol Abertawe**

**FACULTY OF SCIENCE AND
ENGINEERING**

**POSTGRADUATE TAUGHT STUDENT
HANDBOOK**

MSc (FHEQ LEVEL 7)

**COMPUTATIONAL ENGINEERING WITH
INDUSTRY
DEGREE PROGRAMME**

**SUBJECT SPECIFIC
PART TWO OF TWO
MODULE AND COURSE STRUCTURE
2024-25**

Welcome to the Faculty of Science and Engineering!

Whether you are a new or a returning student, we could not be happier to be on this journey with you.

At Swansea University and in the Faculty of Science and Engineering, we believe in working in partnership with students. We work hard to break down barriers and value the contribution of everyone.

Our goal is an inclusive community where everyone is respected, and everyone's contributions are valued. Always feel free to talk to academic, technical and administrative staff, administrators - I'm sure you will find many friendly helping hands ready to assist you. And make the most of living and working alongside your fellow students.

During your time with us, please learn, create, collaborate, and most of all – enjoy yourself!

Professor David Smith
Pro-Vice-Chancellor and Executive Dean
Faculty of Science and Engineering



Faculty of Science and Engineering	
Pro-Vice-Chancellor and Executive Dean	Professor David Smith
Head of Operations	Mrs Ruth Bunting
Associate Dean – Education	Dr Laura Roberts
School of Aerospace, Civil, Electrical and Mechanical Engineering	
Head of School	Professor Antonio Gil
School Education Lead	Professor Cris Arnold
Head of Civil Engineering	Professor Eduardo De Souza Neto
Civil Engineering Programme Director	Dr Clare Wood
Year Coordinator	Professor Rubén Sevilla

DISCLAIMER

The Faculty of Science and Engineering has made all reasonable efforts to ensure that the information contained within this publication is accurate and up-to-date when published but can accept no responsibility for any errors or omissions.

The Faculty of Science and Engineering reserves the right to revise, alter or discontinue degree programmes or modules and to amend regulations and procedures at any time, but every effort will be made to notify interested parties.

It should be noted that not every module listed in this handbook may be available every year, and changes may be made to the details of the modules. You are advised to contact the Faculty of Science and Engineering directly if you require further information.

The 24-25 academic year begins on 23 September 2024

Full term dates can be found [here](#)

DATES OF 24-25 TERMS

23 September 2024 – 13 December 2024

06 January 2025 – 11 April 2025

06 May 2025 – 06 June 2025

SEMESTER 1

23 September 2024 – 27 January 2025

SEMESTER 2

27 January 2025 – 06 June 2025

SUMMER

09 June 2025 – 19 September 2025

IMPORTANT INFORMATION ON ACADEMIC INTEGRITY

Swansea University and the Faculty of Science of Engineering takes any form of **academic misconduct** very seriously. In order to maintain academic integrity and ensure that the quality of an Award from Swansea University is not diminished, it is important to ensure that all students are judged on their ability. No student should have an unfair advantage over another as a result of academic misconduct - whether this is in the form of **Plagiarism, Collusion** or **Commissioning**.

It is important that you are aware of the **guidelines** governing Academic Misconduct within the University/Faculty of Science and Engineering and the possible implications. The Faculty of Science and Engineering will not take intent into consideration and in relation to an allegation of academic misconduct - there can be no defence that the offence was committed unintentionally or accidentally.

Please ensure that you read the University webpages covering the topic – procedural guidance [here](#) and further information [here](#). You should also read the Faculty Part One handbook fully, in particular the pages that concern Academic Misconduct/Academic Integrity.

STUDENT SUPPORT

The **Student Experience and Information Team** are here to support you through your studies and to provide non-judgemental advice and guidance. If you have any questions relating to your academic or personal life you can contact the Team and chat through your support options.

The Team is available for in-person support meetings and can also be contacted via email (studentsupport-scienceengineering@swansea.ac.uk) or phone (**+44 (0) 1792 295514**). You can access their full contact details [here](#).

To visit the Team you can attend either of the following Receptions:

- Reception in the Foyer of Engineering Central, [Bay Campus](#)
- Reception on the first-floor landing of the Wallace Building, [Singleton Park Campus](#)

Standard Reception opening hours are Monday to Friday from 9am to 5pm however, this may vary outside of term time.

The current [FSE Student webpages](#) also contain useful information and links to additional resources:



READING LISTS

Reading lists for each module are available on the course Canvas page and are also accessible via <http://ifindreading.swan.ac.uk/>.

We do not expect you to purchase textbooks, unless it is a specified key text for the course.

THE DIFFERENCE BETWEEN COMPULSORY AND CORE MODULES

Compulsory modules must be **pursued** by a student.

Core modules must not only be **pursued**, but also **passed** before a student can proceed to the next level of study or qualify for an award. Failures in core modules must be redeemed.

Further information can be found under “Modular Terminology” on the following link - <https://myuni.swansea.ac.uk/academic-life/academic-regulations/taught-guidance/essential-info-taught-students/your-programme-explained/>

2-year MScs with Industry - Student FAQs

<p>1. Which courses will be offering 2-year MSc with Industry</p>	<ul style="list-style-type: none"> a. MSc Electronic and Electrical Engineering with Industry b. MSc Materials Engineering with Industry c. MSc Mechanical Engineering with Industry d. MSc Computational Engineering with Industry e. MSc Civil Engineering with Industry f. MSc Structural Engineering with Industry g. MSc Power Engineering and Sustainable Energy with Industry 																					
<p>2. What is the Course break down:</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr style="background-color: #1a3d4d; color: white;"> <th style="text-align: center;">Year</th> <th style="text-align: center;">Credits</th> <th style="text-align: center;">Description</th> </tr> </thead> <tbody> <tr style="background-color: #e6f2ff;"> <td style="text-align: center;">1</td> <td style="text-align: center;">120</td> <td>As per existing MSc</td> </tr> <tr style="background-color: #e6f2ff;"> <td style="text-align: center;">1</td> <td style="text-align: center;">0</td> <td>EG-M194 MSc Industrial Preparation - A pre-placement module providing support and guidance.</td> </tr> <tr style="background-color: #1a3d4d; color: white;"> <td colspan="3" style="text-align: center;">Module dissertation</td> </tr> <tr style="background-color: #e6f2ff;"> <td style="text-align: center;">2</td> <td style="text-align: center;">60</td> <td> <p>Same as existing 1-year MSc dissertation. Deadline is September 30th, or if a student has resit examinations then the deadline extended to December 15th. Please note an earlier deadline may apply – please see the module descriptor for more information.</p> <p>Dissertation projects can be assigned before placements are secured so students may complete the two elements separately. If a placement is secured in time to undertake the dissertation and the industrial experience within the same placement then this will be possible.</p> </td> </tr> <tr style="background-color: #e6f2ff;"> <td style="text-align: center;">2</td> <td style="text-align: center;">60</td> <td> <p>32 weeks of industrial experience. This can either be with a paid industrial placement, or via an internal placement at the University.</p> <p>In some cases, the entire 32 weeks will be based at the University and in others it could be based entirely in Industry. All students placed in Industry will be under close guidance of academic staff at Swansea.</p> <p>The industrial experience module (EG-M39) will be assessed with two components on a pass / fail basis, and the learning outcomes and assessment will be closely linked to the requirements of professional engineering accreditation.</p> </td> </tr> <tr style="background-color: #1a3d4d; color: white;"> <td colspan="3" style="text-align: center;">Total Credits 240</td> </tr> </tbody> </table>	Year	Credits	Description	1	120	As per existing MSc	1	0	EG-M194 MSc Industrial Preparation - A pre-placement module providing support and guidance.	Module dissertation			2	60	<p>Same as existing 1-year MSc dissertation. Deadline is September 30th, or if a student has resit examinations then the deadline extended to December 15th. Please note an earlier deadline may apply – please see the module descriptor for more information.</p> <p>Dissertation projects can be assigned before placements are secured so students may complete the two elements separately. If a placement is secured in time to undertake the dissertation and the industrial experience within the same placement then this will be possible.</p>	2	60	<p>32 weeks of industrial experience. This can either be with a paid industrial placement, or via an internal placement at the University.</p> <p>In some cases, the entire 32 weeks will be based at the University and in others it could be based entirely in Industry. All students placed in Industry will be under close guidance of academic staff at Swansea.</p> <p>The industrial experience module (EG-M39) will be assessed with two components on a pass / fail basis, and the learning outcomes and assessment will be closely linked to the requirements of professional engineering accreditation.</p>	Total Credits 240		
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3. Who will be providing support to me during my placement?	The academic coordinator of the 'with Industry' programme will oversee the support and monitoring. They will also act as supervisor for the industrial experience module, and they guide students via weekly interactions. Attendance will be monitored by the academic supervisor, in conjunction with the placement company as relevant. UKVI requirements will be met with regular meetings with the supervisor (face to face). There will also be resource within Academic Registry to monitor the students in Year 2 to ensure UKVI compliance.
4. Are there any conditions for progression to Year 2?	To remain on the MSc with Industry, students will need to have successfully completed Part 1 (supplementary exams are permitted) and to have secured an appropriate placement(s). Any student who does not meet these criteria will be transferred to the normal one-year MSc.
5. What about my Visa?	Swansea University will support the application for a 2-year Visa.
6. What are the entry requirements	Entry requirements for the 2-year MSc schemes will be a 2:1 in a relevant degree (higher than the 1-year MSc entry requirement).
7. What is the application process?	Intake will be capped at 10 students per MSc and we are anticipating high demand. If we cannot offer the 2-year MSc we may be able to offer the existing 1-year MSc courses.
8. Will I be able to work alongside my study?	You will be able to work for 20 hours per week on top of the MSc.
9. How will I secure a placement?	Where possible, placements will be secured in advance of recruitment. Some placement opportunities will be available as students apply and competitive applications against these will take place. The remaining placement projects will need to be secured by students with support of University staff and this process will take place during October – June of the first year.
10. Is my placement guaranteed?	No - it is the responsibility of the student to secure a suitable placement with the assistance of University staff. Any student who does not meet these criteria will be transferred to the normal one-year MSc working to the same dissertation deadline as the 1-year MSc.

11. What is the course timeline?	YEAR 1	
	Sept – June	Year 1 Taught Modules (120 credits) and also alongside this MSc Industrial Experience Preparation module (EG-M194). The pre-placement sessions will take place to prepare you ahead of the placement and will cover academic requirements that you will have to fulfil during your time in industry.
	Oct – June	Process to apply for and secure placement/s (subject to successful completion of Part 1 in June)
	June/August	<p>Exams (June first-sit and August supp exams) Check point for Part 1 completion.</p> <ul style="list-style-type: none"> - If you've passed all modules (compensation permitted in programmes that have non-CORE module) - Board confirmation of completion of Part 1. - Board confirmation of placement secured. <p>If both confirmed, then you can proceed to dissertation and placement year.</p> <p>If placement has not been secured, then you will be transferred to standard 1-year MSc and submit the dissertation in line with the deadline.</p> <p>If Part 1 is not completed due to academic failure, then you will fail the degree. You may be awarded a post-graduate certificate as an exit qualification.</p>
	YEAR 2	
June – Sept	<p>Part A: Dissertation (60 credits): September submission: Learning outcomes and assessment as per 1-year MSc dissertation.</p> <p>Part B: Industrial experience - module EG-M39 (60 credits): 32 weeks of industrial experience</p> <p>EG-M39 assessment points (Three pass/fail components):</p> <ol style="list-style-type: none"> 1 - Placement Report: The student is expected within the first few months of the placement to complete a report which includes an overview health and safety as well as your main responsibilities in the placement (December 20%) 2 - Final Placement Report: This report summarises the students year in industry placement/ project experience. The report will include a reflective section covering the student's role in the engineering placement / project, highlighting their personal initiative and their role in the evaluation of new engineering concepts (May 60%) <ul style="list-style-type: none"> - Recorded Presentation: Every student is expected to record and submit through Canvas a maximum 5-minutes PowerPoint presentation video summarising your MSc Year in Industry placement (May 20%) 	

13. What happens if I fail to complete Part 1 by June?	You will be entered in for supplementary examinations (resits) for the taught modules in August.
14. What happens if I fail to complete Part 1 following resits in August?	If you fail to pass all August resits, then you will fail the degree. You may be awarded a post-graduate certificate as an exit qualification.
12. What happens if I pass Part 1 but have not secured a suitable placement or project?	You will be transferred to the standard 1-year MSc Course and have until September to complete the dissertation. If you were required to undertake resit examinations the dissertation deadline will be moved on to December.
14. What happens if I fail any of <u>Year 2</u> assessments	You will have one opportunity to repeat or resubmit assessment (capped at 50%). These must be completed by August of Year 2, so within the UKVI time allowance. If you fail any repeat / resubmission, then you will fail the degree and may be awarded a post-graduate certificate as an exit qualification.
15. What happens if I drop out of Year 2 at any point in Year 2?	Drop out will result in failure of the degree. You may be awarded a post-graduate certificate as an exit qualification. If student has valid extenuating circumstances Extensions may be applied / deferred fairly and extensions to UKVI time allowance will be sought on an individual basis
16. What if I don't complete the Industrial Module (EG-M39)?	Failure to complete the industrial experience module (EG-M39) will lead to failure of the degree, even if the dissertation module has been passed. After June of Year 1, there will be no scope to transfer from the 2-year MSc to the 1-year MSc equivalent.

MSc (FHEQ Level 7) 2024/25
Computational Engineering with Industry
MSc Computational Engineering with Industry

Compulsory Modules

Semester 1 Modules	Semester 2 Modules
EG-M23 Finite Element Computational Analysis 10 Credits Prof R Sevilla CORE	CSCM37 Data Visualisation 15 Credits Dr B Mora/Dr JF Maestre Avila CORE
EGIM02 Advanced Computational Methods for Engineers 10 Credits Dr F Zhao CORE	EG-M190 Socio-Technical Engineering 10 Credits Dr SA Rolland/Prof JC Arnold CORE
EG-M194 MSc Industrial Experience Preparation 0 Credits Dr V Samaras CORE	
EG-M39 MSc Industrial Experience 60 Credits Dr V Samaras/Dr J Clancy/Dr A Munnangi CORE	
Dissertation	
EG-D04 MSc Dissertation - Civil and Computational Engineering 60 Credits Prof Y Feng CORE	
Total 180 Credits	

Optional Modules

Choose exactly 75 credits

CSCM35	Big Data and Data Mining	Dr S Yang	TB2	15 (CORE)
EG-M126	Development of Virtual Reality Applications 1	Mr S Vowles/Mr EL Thomas	TB1	30 (CORE)
EG-M192	Research Case Study	Prof Y Feng	TB2	10 (CORE)
EG-M83	Simulation Based Product Design	Dr AJ Williams/Dr AC Tappenden	TB2	10 (CORE)
EGIM03	Solid Mechanics	Prof D Peric	TB1	10 (CORE)

Or

Choose exactly 75 credits

<u>CSCM35</u>	Big Data and Data Mining	Dr S Yang	TB2	15 (CORE)
<u>CSCM45</u>	Big Data and Machine Learning	Dr S Sharifzadeh	TB1	15 (CORE)
<u>CSCM72</u>	Optimisation	Dr AAM Rahat	TB1	15 (CORE)
<u>EG-M192</u>	Research Case Study	Prof Y Feng	TB2	10 (CORE)
<u>EG-M83</u>	Simulation Based Product Design	Dr AJ Williams/Dr AC Tappenden	TB2	10 (CORE)
<u>EGIM07</u>	Dynamics and Earthquake Analysis of Structures	Prof Y Feng	TB1	10 (CORE)

Or

Choose exactly 75 credits

<u>CSCM45</u>	Big Data and Machine Learning	Dr S Sharifzadeh	TB1	15 (CORE)
<u>EG-M07</u>	Optimisation	Prof C Giannetti	TB2	10 (CORE)
<u>EG-M325</u>	Extended Research Case Study	Prof R Sevilla/ Refer To Dept	TB1+2	20 (CORE)
<u>EGIM03</u>	Solid Mechanics	Prof D Peric	TB1	10 (CORE)
<u>EGIM06</u>	Advanced Fluid Flow Simulation	Prof R Sevilla/Prof O Hassan	TB2	10 (CORE)
<u>EGIM08</u>	Plasticity in Structural and Geotechnical Engineering	Prof D Peric	TB2	10 (CORE)