



**Swansea University**  
**Prifysgol Abertawe**

# **FACULTY OF SCIENCE AND ENGINEERING**

**STUDENT HANDBOOK**

**MSc (FHEQ LEVEL 7)**

**MSc ELECTRONIC AND ELECTRICAL  
ENGINEERING JANUARY  
DEGREE**

**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**



<b>Faculty of Science and Engineering</b>	
Pro-Vice-Chancellor and Executive Dean	Professor David Smith
Head of Operations	Mrs Ruth Bunting
Associate Dean – Education	Dr Laura Roberts
<b>School of Aerospace, Civil, Electrical and Mechanical Engineering</b>	
Head of School	Professor Antonio Gil
School Education Lead	Professor Cris Arnold
Head of Electronic and Electrical Engineering	Professor Vincent Teng
Electronic and Electrical Engineering Programme Director	Dr Karin Ennser
Year Coordinator	Dr Thierry Maffeis

## **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](mailto: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/>

## Supporting Your Studies

- [Centre for Academic Success](#)
- [Faculty of Science and Engineering- Student Support](#)

## Supporting Your Professional Development

As a student studying MSc Electronic and Electrical Engineering at Swansea University you are continuing your educational journey which we hope will end with [Engineering Council](#) registration as a [Chartered Engineer \(CEng\)](#).

The Master of Science (MSc) programme Electronic and Electrical Engineering has been accredited by the [Institution of Engineering and Technology \(IET\)](#) on behalf of the [Engineering Council](#) as meeting the requirements for Further Learning for registration as a [Chartered Engineer \(CEng\)](#). Candidates must hold a CEng accredited BEng/BSc (Hons) undergraduate first degree to comply with full CEng registration requirements.

What this means for you is that the learning outcomes of each year of your programme of study has been carefully designed to align with Version 3 of the Engineering Council's [Accreditation of Higher Education Programmes \(AHEP\)](#) which forms the educational foundation for the [UK Standard for Professional Engineering Competence \(UK-SPEC\)](#).

The knowledge and skills you will have demonstrated by completing your programme of study are defined by achieving a set of learning outcomes distributed across the following key areas of competence:

- Science and mathematics
- Engineering analysis
- Design and innovation
- The engineer and society
- Engineering practice

To find out more about Professional Registration and what the AHEP competences are, please refer to the Engineering Council's [Student Guide to Professional Registration](#) and the [Accreditation of Higher Education Programmes collated learning outcomes](#).

## The IET – Your Professional Home for Life

As a student at Swansea University, you are privileged to be associated with one of the small groups of universities that have been selected to be [Academic Partners of the IET](#). The most tangible benefit of this is that you can register as a student member of the IET at no cost to yourself for the duration of your study. And as a student member of the IET, you can take *full advantage* of the benefits that membership of the IET offers. These include an impressive range of services supporting *Networking, Professional Development, Learning Resources* and *Membership Benefits*. A summary of these is shown on the [Get more from your partnership](#) page.



As well as these benefits, as an Academic Partner of the IET, the University can offer you access to the [IET's Graduate Advantage Scheme](#): that is, we will pay for your first year of full Membership of the IET, and you can use the post-nominals MIET straight after graduation for no cost. This will be especially useful as you start to gain and evidence the UK-SPEC competences you will need to complete your [IEng or CEng professional registration](#).

## IET on Campus

[IET On Campus](#) is designed to support everyone in the Department of Electronic and Electrical Engineering with students at the heart of it. The IET gives you access to tailored practical, technical, and career-related resources and helps you to create links with industry and other universities, building a platform for you to demonstrate your skills and raise your profile. At Swansea, the local branch of IET on Campus is run by the [Electrical & Electronic Engineering Society \(EEESoc\)](#) and is supported by the [IET South Wales Local Network](#).

For more information, please join EEESoc and access their social media channels.

## IET Student Advisor

Dr Chris Jobling (MIET, CEng) is the *IET Student Advisor* for Swansea University. Please get in touch with him if you want to find out more about the AHEP and UKSPEC, the IET, IET student membership, IET Scholarships, Graduate Advantage, IET Communities, or opportunities to get involved with Wales Southwest Local Network as an IET young professional volunteer. He will be happy to help.

Other members of staff associated with the IET at Swansea include:

- Dr Timothy Davies (MIET, CEng)
- Dr Augustine Egwebe (MIET)
- Dr Karin Ennser (MIET, CEng)
- Prof Lijie Li (FIET)
- Mr David Moody (MIET)

## UK Electronics Skills Foundation

Swansea University is an academic partner from the [UK Electronics Skills Foundation](#). The partnership means that you can benefit from the UKESF scholarship scheme, competitions, awards, and internship programme, which connects the most capable Electronics undergraduates with leading companies in the sector.

UKESF offers opportunities for undergraduates to take advantage of an industry placement, develop their employability skills, generous financial support, and the opportunity to network with professionals in the Electronics sector. Dr Karin Ennser is the *UKESF Student Advisor* for Swansea University. Please contact her if you want to find out more.

## Faculty prizes

The Faculty of Science and Engineering awards graduation prizes to the best MSc Electronic and Electrical Engineering student in each graduating year.

**MSc (FHEQ Level 7) 2024/25**  
**Electronic and Electrical Engineering MSc- January Start**  
MSc Electronic and Electrical Engineering

**Compulsory Modules**

Semester 1 Modules	Semester 2 Modules
<a href="#">AT-M80</a> <b>Optical Fibre Communications</b> 10 Credits Dr KM Ennser <b>CORE</b>	<a href="#">AT-M76</a> <b>Radio and Optical Wireless Communications</b> 10 Credits Prof L Li/Prof A Mehta <b>CORE</b>
<a href="#">EGLM02</a> <b>Advanced Power Electronics and Drives</b> 10 Credits Dr Z Zhou <b>CORE</b>	<a href="#">EG-M190</a> <b>Socio-Technical Engineering</b> 10 Credits Dr SA Rolland/Prof JC Arnold <b>CORE</b>
<a href="#">EGNM04</a> <b>Nanoscale Structures and Devices</b> 10 Credits Dr TGG Maffei/Prof KS Teng <b>CORE</b>	<a href="#">EG-M47</a> <b>Business Leadership for Engineers</b> 10 Credits Dr JE Norambuena-Contreras <b>CORE</b>
<a href="#">EGTM71</a> <b>Power Generation Systems</b> 10 Credits Prof I Masters <b>CORE</b>	<a href="#">EGLM06</a> <b>Sustainable Energy and Power Electronics Laboratory</b> 10 Credits Dr Z Zhou <b>CORE</b>
<a href="#">EGTM79</a> <b>Sustainability and Environmental Assessment</b> 10 Credits Prof GTM Bunting/Mr MH Green <b>CORE</b>	<a href="#">EGNM09</a> <b>Micro and Nano Electro-Mechanical Systems</b> 10 Credits Prof L Li <b>CORE</b>
<b>Dissertation</b>	
<a href="#">EG-D05</a> <b>MSc Dissertation - Electrical Engineering</b> 60 Credits Dr M Fazeli <b>CORE</b>	
<b>Total 180 Credits</b>	

**Optional Modules**

Choose exactly 10 credits

Choose exactly 10 credits from Options in Jan -June

<a href="#">EG-M191</a>	Internet of Things: Principles and Practice	Dr JW Jones	TB2	10 (CORE)
<a href="#">EGLM01</a>	Wide band-gap Semiconductors	Dr TGG Maffei/Prof OJ Guy	TB2	10 (CORE)
<a href="#">EGLM03</a>	Modern Control Systems	Dr M Monfared	TB2	10 (CORE)
<a href="#">EGLM05</a>	Advanced Power Systems	Dr M Fazeli	TB2	10 (CORE)

**And**

Choose exactly 10 credits

Choose exactly 20 credits from Options in September-Jan

<a href="#">EG-M125</a>	Advanced Optical Materials and Devices	Dr WC Tsoi	TB1	10 (CORE)
<a href="#">EGLM00</a>	Power Semiconductor Devices	Prof MR Jennings	TB1	10 (CORE)
<a href="#">EGLM07</a>	Power Systems with Project	Dr M Fazeli	TB1	10 (CORE)