Swansea University
Prifysgol Abertawe

# FACULTY OF SCIENCE AND ENGINEERING

## UNDERGRADUATE STUDENT HANDBOOK

## YEAR 1 (FHEQ LEVEL 4)

# MATERIALS SCIENCE AND ENGINEERING

## DEGREE PROGRAMMES

**SUBJECT SPECIFIC**
**PART TWO OF TWO**
**MODULE AND COURSE STRUCTURE**
**2025-26**

## 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.

# IMPORTANT

## Term Dates

The 25-26 academic year begins on 29 September 2025

Full term dates can be found here

## 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.

## 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/

## Key Programme Staff

| Materials Science and Engineering Programme Director | Materials Science and Engineering Year 1 Coordinator |
|---|---|
| Dr Amit Das | Professor Richard Johnston |

# Year 1 (FHEQ Level 4) 2025/26
# Materials Engineering

**BEng Materials Science and Engineering[J500,J505]**
**BEng Materials Science and Engineering with a Year Abroad[J510]**
**MEng Materials Science and Engineering[J504]**
**MEng Materials Science and Engineering with a Year Abroad[J506]**

## Compulsory Modules

| Semester 1 Modules | Semester 2 Modules |
|---|---|
| EG-133<br>Engineering for People Hackathon<br>10 Credits<br>Prof JC Arnold/Dr WG Bennett/Prof D Deganello/Prof DJ Penney/...<br>CORE | EG-182<br>Manufacturing Technology I<br>10 Credits<br>Prof HM Davies<br>CORE |
| EG-180<br>Introduction to Materials Engineering<br>10 Credits<br>Prof JH Sullivan/Prof RJ Lancaster<br>CORE | EG-184<br>Mechanical Properties of Materials<br>10 Credits<br>Prof DJ Penney/Prof MT Whittaker<br>CORE |
| EG-183<br>Materials Resources<br>10 Credits<br>Prof TM Watson<br>CORE | EG-185<br>Materials Practicals 1: structure / property links in metals<br>10 Credits<br>Prof HM Davies<br>CORE |
| EG-187<br>Engineering Analysis for Materials 1<br>10 Credits<br>Prof MJ Carnie/Dr JD Mcgettrick<br>CORE | EGA110<br>Instrumental and Analytical Chemistry<br>10 Credits<br>Prof E Andreoli/Dr A Munnangi<br>CORE |
| EGA163<br>Design and Laboratory Classes 1<br>10 Credits<br>Prof RE Johnston/Dr F Zhao<br>CORE | EGA113<br>Case Studies in Materials<br>10 Credits<br>Dr A Das/Prof C Pleydell-Pearce/Prof TM Watson<br>CORE |
| EG-188<br>Engineering Analysis for Materials 2<br>10 Credits<br>Prof MJ Carnie<br>CORE | |
| EGT102<br>Engineering Tutorials: Year 1<br>0 Credits<br>Prof JC Arnold<br>CORE | |
| **Total 120 Credits** | |

## Optional Modules

Choose exactly 10 credits
If a student has done A level (or equivalent) Chemistry but not Physics they must opt for EGA106.
If a student has done A level (or equivalent) Physics but not Chemistry they must opt for EGA103.
If a student has done A level (or equivalent) Physics and Chemistry they must opt for EG-137.
In the unlikely event that a student has no chemistry or physics background they would be best advised to do EGA106.

| | | | | |
|---|---|---|---|---|
| **EG-137** | Data analysis and simulation | Mr AJ Morgan | TB1 | 10 (CORE) |
| **EGA103** | Foundation Chemistry | Prof PJ Holliman/Prof E Andreoli/Prof HM Davies/.. | TB1 | 10 (CORE) |
| **EGA106** | Engineering Science | Prof WC Tsoi/Dr A Egwebe | TB1 | 10 (CORE) |

# Year 1 (FHEQ Level 4) 2025/26
# Materials Engineering
**BEng Materials Science and Engineering with a Year in Industry[J502]**
**MEng Materials Science and Engineering with a Year in Industry[J503]**

## Compulsory Modules

| Semester 1 Modules | Semester 2 Modules |
|---|---|
| EG-133<br>Engineering for People Hackathon<br>10 Credits<br>Prof JC Arnold/Dr WG Bennett/Prof D Deganello/Prof DJ Penney/...<br>CORE | EG-135<br>Placement Preparation: Science and Engineering Year in Industry<br>0 Credits<br>Dr SA Rolland/Dr V Samaras<br>CORE |
| EG-180<br>Introduction to Materials Engineering<br>10 Credits<br>Prof JH Sullivan/Prof RJ Lancaster<br>CORE | EG-182<br>Manufacturing Technology I<br>10 Credits<br>Prof HM Davies<br>CORE |
| EG-183<br>Materials Resources<br>10 Credits<br>Prof TM Watson<br>CORE | EG-184<br>Mechanical Properties of Materials<br>10 Credits<br>Prof DJ Penney/Prof MT Whittaker<br>CORE |
| EG-187<br>Engineering Analysis for Materials 1<br>10 Credits<br>Prof MJ Carnie/Dr JD Mcgettrick<br>CORE | EG-185<br>Materials Practicals 1: structure / property links in metals<br>10 Credits<br>Prof HM Davies<br>CORE |
| EGA163<br>Design and Laboratory Classes 1<br>10 Credits<br>Prof RE Johnston/Dr F Zhao<br>CORE | EGA110<br>Instrumental and Analytical Chemistry<br>10 Credits<br>Prof E Andreoli/Dr A Munnangi<br>CORE |
| | EGA113<br>Case Studies in Materials<br>10 Credits<br>Dr A Das/Prof C Pleydell-Pearce/Prof TM Watson<br>CORE |
| EG-188<br>Engineering Analysis for Materials 2<br>10 Credits<br>Prof MJ Carnie<br>CORE | |
| EGT102<br>Engineering Tutorials: Year 1<br>0 Credits<br>Prof JC Arnold<br>CORE | |
| **Total 120 Credits** | |

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| **EGA103** | Foundation Chemistry | Prof PJ Holliman/Prof E Andreoli/Prof HM Davies/.. | TB1 | 10 (CORE) |
| **EGA106** | Engineering Science | Prof WC Tsoi/Dr A Egwebe | TB1 | 10 (CORE) |