



**Swansea University  
Prifysgol Abertawe**

**FACULTY OF SCIENCE AND  
ENGINEERING**

**POSTGRADUATE STUDENT  
HANDBOOK**

**MPHYS (FHEQ LEVEL 7)**

**MPHYS THEORETICAL PHYSICS  
DEGREE PROGRAMMES**

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

## **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.

## **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 Biosciences, Geography and Physics</b>	
Head of School	Dr Kevin Rees <a href="mailto:k.g.rees@swansea.ac.uk">k.g.rees@swansea.ac.uk</a>
School Education Lead	Dr Wendy Harris <a href="mailto:w.e.harris@swansea.ac.uk">w.e.harris@swansea.ac.uk</a>
Co-Heads of Physics	Professor Prem Kumar <a href="mailto:s.p.kumar@swansea.ac.uk">s.p.kumar@swansea.ac.uk</a> Professor Daniel Thompson <a href="mailto:d.c.thompson@swansea.ac.uk">d.c.thompson@swansea.ac.uk</a>
Physics Programme Director	Dr Timothy Burns <a href="mailto:t.burns@swansea.ac.uk">t.burns@swansea.ac.uk</a>
Year 4/ Level M Coordinator	Dr Kevin O’Keeffe <a href="mailto:k.okeeffe@swansea.ac.uk">k.okeeffe@swansea.ac.uk</a>

## 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/>

## Year 4 (FHEQ Level 7) 2024/25

### Theoretical Physics

MPhys Theoretical Physics[F340]

Total 120 Credits

#### Optional Modules

Choose exactly 60 credits

<a href="#">PH-M03</a>	Quantum Field Theory	Prof DC Dunbar	TB1	10
<a href="#">PH-M04</a>	Advanced Particle Physics	Prof A Armoni	TB1	10
<a href="#">PH-M08</a>	Modern Laser Systems	Dr K O'Keeffe	TB2	10
<a href="#">PH-M10</a>	Atomic and Quantum Optics III	Prof SJ Eriksson	TB1	10
<a href="#">PH-M28</a>	Machine Learning for Physicists	Prof GAP Aarts	TB1	10
<a href="#">PH-M29</a>	Quantum Gravity	Prof TJ Hollowood	TB2	10
<a href="#">PH-M32</a>	Quantum Information Processing	Prof GAP Aarts	TB2	10
<a href="#">PH-M35</a>	Medical Imaging and Spectroscopy: From MRI to photonics	Dr SM Shermer	TB2	10

#### And

Choose exactly 60 credits

<a href="#">PH-M24</a>	Research Project	Dr K O'Keeffe	TB1+2	60 (CORE)
<a href="#">PH-M24C</a>	Prosiect Ymchwil	Dr K O'Keeffe	TB1+2	60 (CORE)