

# UNIVERSITY OF STRATHCLYDE

## DEPARTMENT OF PHYSICS

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**2023 HANDBOOK**  
**FOR**  
**1<sup>ST</sup> – 5<sup>TH</sup> YEAR STUDENTS**

**MPhys**  
**MPhys Physics with Advanced Research**  
**Honours BSc Physics**  
**Honours BSc Physics with Teaching**  
**Honours BSc Mathematics and Physics**

**Welcome to the University of Strathclyde and to the Department of Physics!**

Dear Students,

I am delighted to welcome you to the University of Strathclyde and to the Department of Physics!

This Handbook is designed to serve as your invaluable companion throughout your academic journey. It will familiarise you with our degree courses, offer you insights into degree regulations, and provide essential contact information and administration information. Should you find yourself in need of guidance or have any questions, remember that our doors are always open. Feel free to reach out to your dedicated Personal Development Adviser, Adviser of Study, course Lecturer or any of our supportive staff members, as appropriate. They are here to assist you or connect you with the relevant staff within the University's network of support services.

Exciting times are ahead! Our brand-new Teaching Laboratories are set to be ready for Semester 2 in January 2024, they will provide you with a remarkable learning experience. This development has been eagerly anticipated, and while construction continues on Level 4 of the John Anderson Building, I kindly ask for your understanding as we have made temporary arrangements for the Teaching Lab classes to take place elsewhere in the building and on campus.

My colleagues and I looking forward to sharing our passion for Physics with you and extending a warm welcome to the Physics Department.

I hope that your time at Strathclyde is enjoyable, and I wish you every success in your studies.

Professor Stefan Kuhr  
Head of Department.

**This Handbook should be read in conjunction with the University's guidance that provides extensive general information: <https://www.strath.ac.uk/studywithus/strathlife/>**

**Important up-to-date Departmental information is available on the [Physics Personal Development](#) page on Myplace.**

We believe the information provided is correct at the date of publishing but may be subject to revision.

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## GENERAL INFORMATION

### COURSES

#### *MPhys Physics*

This is normally a 5-year degree that places the emphasis on up-to-date physics. In the final year of this course students encounter modules that are necessary to produce a graduate physicist capable of working in a research environment in either industry or academia.

In year 3, in addition to the core physics modules, students can choose from a set of advanced modules in mathematical physics, computational physics, experimental physics, or communicating physics. In Year 4 students can choose optional modules from a range of diverse topics, such as theoretical physics, plasma physics, atomic and molecular physics, quantum optics or photonics and then extend the depth of coverage of these subjects through Year 5.

Within the MPhys degree structure, the students have the opportunity to tailor their modules in the final two years to a given specialisation in a particular subject area. This is done by selecting modules relating to an area of expertise offered by the department and pursuing a project in that area over the 4<sup>th</sup> and 5<sup>th</sup> years of study.

Current specialisations are:

- Nanoscience, requiring PH454 Topics in Nanoscience and PH554 Advanced Topics in Nanoscience
- Photonics, requiring PH455 Topics in Photonics and one from PH552 Advanced Topics in Physics or PH562 Advanced Topics in Photonics
- Quantum Optics, requiring PH422 Topics in Quantum Physics and one from PH558 Advanced Topics in Quantum Physics or PH562 Advanced Topics in Quantum Optics
- Solid State Physics, requiring PH453 Topics in Solid State Physics, PH553 Advanced Topics in Solid State Physics (not running 2023/24)

#### *MPhys Physics with Advanced Research*

This integrated 5-year Masters course provides in-depth learning and additional research opportunities for highly ambitious and motivated students. The course is identical for all students in years 1 & 2. In year 3 students must take the Mathematical Physics module, PH389. In year 4 students take the Level 5 Research Skills module, PH551 and in the final year 5, students will undertake a 100 credit project which starts during the summer holiday between years 4 and 5.

#### *Honours BSc Physics*

This is a 4-year degree course providing students with a thorough grounding in the fundamentals of physics. In the final 4<sup>th</sup> year of the course, students select optional modules from the same set that are offered to the MPhys degree students (see the section above).

#### *Honours BSc Physics with Teaching*

This 4-years degree is offered in conjunction with the [Strathclyde Institute of Education](#) within the Faculty of Humanities and Social Science and it is a qualification designed to prepare graduates to become teachers of physics in secondary schools. This degree not only covers the same core physics syllabus as the BSc Physics degree but also allows students the time to acquire the educational theory and classroom practice necessary for registration with the General Teaching Council for Scotland.

## Honours BSc Mathematics and Physics

The aim of this 4-year degree, offered jointly with the [Department of Mathematics and Statistics](#), is to provide students with a joint qualification in Mathematics and Physics by providing the opportunity to pursue both Mathematics and Physics to a high level. It contains the physics necessary for future fundamental and applied work. Again, in the 4<sup>th</sup> year, students can choose optional modules from both the Department of Physics and the department of Mathematics and Statistics.

### THE ACADEMIC YEAR 2023/2024

Events which you must attend during Welcome and Development include:

The appropriate **First Day Meeting**. Details of each year's meeting are as follows:

1<sup>st</sup> Year students: First Day Meeting Tuesday 12<sup>th</sup> September 2023 from **09:30 - 10:30** in **JA325**  
2<sup>nd</sup> Year Students: First Day Meeting Tuesday 12<sup>th</sup> September 2023 from **09:30 - 10:30** in **JA502**  
3<sup>rd</sup> Year Students: First Day Meeting Tuesday 12<sup>th</sup> September 2023 from **09:30 - 10:30** in **JA317**  
4<sup>th</sup> Year Students: First Day Meeting Tuesday 12<sup>th</sup> September 2023 from **09:30 - 10:30** in **TL565**  
5<sup>th</sup> Year Students: First Day Meeting Tuesday 12<sup>th</sup> September 2023 from **09:30 - 10:30** in **JA327**

You should also attend your PDA family meeting. If you are new to this your welcome email will contain details of this. Returning students can also check who their PDA is on Pegasus.

Another important event, which you must attend if you are in your first year of study or are new to the Faculty of Science, is:

**Student Inauguration Ceremony):** Tuesday 12<sup>th</sup> September 2023 from 11.15am to 11.45am at The Barony Hall.

The Strathclyde [Student Union](#) are also running Freshers Week events. Further details can be found [here](#).

Please see below for key dates for Academic Year 2023-24.

### Semester 1

#### 11 September 2023 - 5 January 2024

Event	Dates	Academic year structure*
Welcome and development week	11 September 2023 - 17 September 2023	1 week
Teaching block 1	18 September 2023 - 3 December 2023	11 weeks
University closed	25 September 2023	
Formal assessment period	4 December 2023 - 15 December 2023	2 weeks
Student holiday: Winter vacation	18 December 2023 - 5 January 2024 (inclusive)	3 weeks
University closed	TBC	
Term 1	11 September 2023 - 1 December 2023 (12 weeks)	Welcome and development week (1 week) Teaching block 1 (11 weeks)

## Semester 2

### 8 January 2024 - 17 May 2024

Event	Dates	Academic year structure*
Consolidation and development week	8 January 2024 - 14 January 2024	1 week
Teaching block 2	15 January 2024 - 1 April 2024	11 weeks
University closed	29 March 2024 and 1 April 2024	
Student holiday: spring vacation	1 April 2024 - 12 April 2024	2 weeks
Formal assessment period	15 April 2024 - 17 May 2024	5 weeks
University closed	6 May 2023	
Term 2	8 January 2024 - 29 March 2024 (12 weeks)	Consolidation and development week (1 week) Teaching block 2 (11 weeks)
Term 3	15 April 2024 - 17 May 2024	

## Other key dates

### 20 May 2024 - 13 September 2024

Event	Dates	Academic year structure*
University closed	27 May 2024	
Student holiday: summer vacation	20 May 2024 – 13 September 2024	16 weeks
University closed	TBC	
Resit examination diet	24 July 2024 - 6 August 2024	

**Please note:** this information may be subject to change.

\*This represents the University's academic year structure as outlined in the [Policy on the Academic Year and Teaching Calendar](#). Senate has overall responsibility for determining the shape of the academic year.

Exam Information and Dates can be found on the [Examinations web page](#).

*Staff will notify you about the hand in dates as the modules progress and will be published on each class page on MyPlace.*

***These dates are correct at the time of publishing, but you are strongly advised to check <https://www.strath.ac.uk/keydates/2023-24/> [Key Dates 2023-24](#) regularly for any changes.***

## YEAR COORDINATORS

Each student in the Department is assigned a Year Coordinator who is responsible for advising the students about their current curriculum. Each year group will meet with their Year Coordinator at the appropriate year group First Day Meeting.

### *The Programme Year Coordinators for 1<sup>st</sup> year:*

MPhys [Dr Gordon Robb](mailto:physics-yr1-coordinator@strath.ac.uk) [physics-yr1-coordinator@strath.ac.uk](mailto:physics-yr1-coordinator@strath.ac.uk)  
MPhys with Advanced Research Dr Gordon Robb [physics-yr1-coordinator@strath.ac.uk](mailto:physics-yr1-coordinator@strath.ac.uk)  
Physics, BSc Honours Dr Gordon Robb [physics-yr1-coordinator@strath.ac.uk](mailto:physics-yr1-coordinator@strath.ac.uk)  
Physics with Teaching, BSc Honours Dr Gordon Robb [physics-yr1-coordinator@strath.ac.uk](mailto:physics-yr1-coordinator@strath.ac.uk)  
Mathematics and Physics, BSc Honours Dr L [Corson](mailto:lindsey.corson@strath.ac.uk), Mathematics and Statistics  
[lindsey.corson@strath.ac.uk](mailto:lindsey.corson@strath.ac.uk)

### *The Programme Year Coordinators for 2<sup>nd</sup> year:*

MPhys [Prof Gian-Luca Oppo](mailto:physics-yr2-coordinator@strath.ac.uk) [physics-yr2-coordinator@strath.ac.uk](mailto:physics-yr2-coordinator@strath.ac.uk)  
MPhys with Advanced Research Prof Gian-Luca Oppo [physics-yr2-coordinator@strath.ac.uk](mailto:physics-yr2-coordinator@strath.ac.uk)  
Physics, BSc Honours Prof Gian-Luca Oppo [physics-yr2-coordinator@strath.ac.uk](mailto:physics-yr2-coordinator@strath.ac.uk)  
Physics with Teaching, BSc Honours Prof Gian-Luca Oppo [physics-yr2-coordinator@strath.ac.uk](mailto:physics-yr2-coordinator@strath.ac.uk)  
Mathematics and Physics, BSc Honours [Dr A Miller](mailto:ainsley.miller@strath.ac.uk), Mathematics and Statistics  
[ainsley.miller@strath.ac.uk](mailto:ainsley.miller@strath.ac.uk)

### *The Programme Year Coordinators for 3<sup>rd</sup> year:*

MPhys [Dr. Carol Trager-Cowan](mailto:physics-yr3-coordinator@strath.ac.uk) [physics-yr3-coordinator@strath.ac.uk](mailto:physics-yr3-coordinator@strath.ac.uk)  
MPhys with Advanced Research Dr. Carol Trager-Cowan [physics-yr3-coordinator@strath.ac.uk](mailto:physics-yr3-coordinator@strath.ac.uk)  
Physics, BSc Honours Dr. Carol Trager-Cowan [physics-yr3-coordinator@strath.ac.uk](mailto:physics-yr3-coordinator@strath.ac.uk)  
Physics with Teaching, BSc Honours Dr. Carol Trager-Cowan [physics-yr3-coordinator@strath.ac.uk](mailto:physics-yr3-coordinator@strath.ac.uk)  
Mathematics and Physics, BSc Honours Dr [M Langer](mailto:m.langer@strath.ac.uk), Mathematics and Statistics  
[m.langer@strath.ac.uk](mailto:m.langer@strath.ac.uk)

### *The Programme Year Coordinators for 4<sup>th</sup> year:*

MPhys [Dr Fabien Massabuau](mailto:physics-yr4-coordinator@strath.ac.uk) [physics-yr4-coordinator@strath.ac.uk](mailto:physics-yr4-coordinator@strath.ac.uk)  
MPhys with Advanced Research Dr Fabien Massabuau [physics-yr4-coordinator@strath.ac.uk](mailto:physics-yr4-coordinator@strath.ac.uk)  
Physics, BSc Honours Dr Fabien Massabuau [physics-yr4-coordinator@strath.ac.uk](mailto:physics-yr4-coordinator@strath.ac.uk)  
Physics with Teaching, BSc Honours Dr David Roxburgh  
Mathematics and Physics, BSc Honours Dr [D Young](mailto:david.young@strath.ac.uk), Mathematics and Statistics  
[david.young@strath.ac.uk](mailto:david.young@strath.ac.uk)

### *The Programme Year Coordinators for 5<sup>th</sup> year:*

MPhys [Dr Konstantinos Lagoudakis](mailto:physics-yr5-coordinator@strath.ac.uk) [physics-yr5-coordinator@strath.ac.uk](mailto:physics-yr5-coordinator@strath.ac.uk)  
MPhys with Advanced Research Dr Konstantinos Lagoudakis [physics-yr5-coordinator@strath.ac.uk](mailto:physics-yr5-coordinator@strath.ac.uk)

If you have an issue which your Year Coordinator cannot help you with, then please contact the Director of Student Support: [physics-director-teaching@strath.ac.uk](mailto:physics-director-teaching@strath.ac.uk)  
Dr Ben Hourahine



## FACULTY OF SCIENCE

The Faculty of Science includes the Departments of Physics, Mathematics and Statistics, Computer and Information Science, Pure and Applied Chemistry as well as the Strathclyde Institute of Pharmacy and Biomedical Sciences which comprises the bioscience departments. The Faculty, one of four in the University, has administrative and financial powers devolved to it by the University.

The current office-holders in the Faculty are:

**Associate Principal & Executive Dean:** [Professor Duncan Graham](#)  
Deputy Associate Principal and Vice Dean (Academic) [Professor Debra Willison](#)

Permanent administrative staff of the Faculty are:

Faculty Manager: [Robert Lawrie](#)  
Deputy Faculty Manager: [Christine Dowds](#)  
Faculty Officer (Academic Quality & Research) [Craig McMurray](#)

Enquiries to Faculty staff can be emailed to [science-enquiries@strath.ac.uk](mailto:science-enquiries@strath.ac.uk)

## THE PHYSICS DEPARTMENT

The Department is housed in the [John Anderson \(JA\) building](#). The John Anderson Building is open Monday to Friday from 8.00 am to 6.00 pm.

The Department has over 50 academic staff. The Head of Department is Professor Stefan Kuhr (JA 8.02). Information on the Department and its staff can be found on the [Physics Department's website](#)

Key staff are:

Head of Department: [Professor Stefan Kuhr](#)  
Deputy Head of Department: [Professor Robert Martin](#)  
Director of Research: [Professor Michael Strain](#)  
Director of Teaching: [Professor John Jeffers](#)  
Deputy Director of Teaching: [Dr Alison Yao](#)  
Director of Student Support: [Dr Ben Hourahine](#)

Should you need to contact a member of staff, contact details can also be found on the [Department website](#). Alternatively, messages for staff may be left with staff in the Student Enquiry Office JA 8.31 on the 8<sup>th</sup> floor of the John Anderson Building. Photographs of all the staff are displayed on the 8<sup>th</sup> floor of the John Anderson Building outside JA 8.03.

**It is essential that you check both your university email account and any class announcements made through the University Virtual Learning Environment - MyPlace on a regular basis.**

The Department makes available JA 8.18 (The Bob Illingworth Room) as a Student Reading Room. You are asked to cooperate by not using 8.18 for conversing, eating or drinking. This room is for students of all years and of all courses. (Please treat it with care or the facilities may be withdrawn).

There is also a Student Common Room located in the [Graham Hills Building](#) GH 5.65.

## General Information

### ADVICE FOR STUDENTS REQUIRING DISABILITY SUPPORT

#### Students with disabilities

The University is committed to providing an inclusive learning and working environment for disabled people. If you have, or think you have, a disability we encourage you to disclose it as soon as possible. Declaring your disability will enable you to access any additional support that you may need and help to ensure you become a successful student. The information you provide will be treated as confidential and will not be shared with other staff without your consent.

The University has a dedicated Disability & Wellbeing Service that offers specific advice, information and assistance to disabled students, including information on the Disabled Students Allowance (DSA). Further information is available from the [Disability & Wellbeing Service](#) website.

In addition, each academic Department/ School (for HaSS) has at least one Departmental Disability Contact (DDC), who acts as a first point of contact for disabled students.

The Departmental Disability Contact list is available on the [website](#)

Please inform your course tutor, the DDC and a member of the Disability Service of your needs as soon as possible. The Disability & Wellbeing Service will then formally communicate your needs to your Department/ School.

Only students who have submitted all their referral paperwork and supporting evidence to the Disability & Wellbeing Service can be guaranteed that they will be considered for exam adjustments for the first exam diet in early December. **Students should submit evidence relating to a disability as soon as possible.**

Email: [disability-wellbeing@strath.ac.uk](mailto:disability-wellbeing@strath.ac.uk)

Telephone: 0141 548 3402

Location: Disability & Wellbeing Service,  
Rm 467, Mary Dunn Wing,  
Learning & Teaching Building

### **Issues with Physical Access on campus**

If you experience an issue with physical access anywhere on campus, please email: [physicalaccess@strath.ac.uk](mailto:physicalaccess@strath.ac.uk) where a member of Estates staff will be able to help.

**IF YOU HAVE ADDITIONAL SUPPORT NEEDS YOU MUST NOTIFY THE DISABILITY SERVICE AS SOON AS POSSIBLE SO THAT THE NECESSARY ADJUSTMENTS CAN BE PUT IN PLACE.**

To ensure the Department meets your needs as defined by the Disability & Wellbeing Service, The Department Disability Contacts can be reached at [physics-ddc@strath.ac.uk](mailto:physics-ddc@strath.ac.uk). Should you have any questions then please do not hesitate to use this email address as first point of contact and we will try our best to help or direct you to further support.

In addition to the Disability & Wellbeing Service the University offers a range of additional support services. Details of these various services can be found at [Student Support & Wellbeing](#)

Please get in touch with us if your ability to be on campus is restricted, for example, due to underlying health conditions relating to the situation with Covid-19, so that your circumstances are assessed.

### **ABSENCE**

If you are absent from the University for up to 7 days you should record a self-certification online via PEGASUS using the Personal Circumstances link under the Services tab. Where illness results in absence of more than 7 days, you must submit a medical certificate to **Personal Circumstances**: [personal-circumstances@strath.ac.uk](mailto:personal-circumstances@strath.ac.uk).

If you are absent from an examination due to sickness you must submit a formal medical certificate. The University has a policy on Personal Circumstances that have affected a student's performance in assessments leading to the final mark for a class.

Full details of these policies and what you should do in each circumstance can be found at: [Absence and Voluntary Suspension](#), [Personal Circumstances Procedure](#) and on the [Strathlife](#) pages.

## **MOVING HOME**

It is important to keep Student Business informed of **any change in your address** or else important information (like examination and graduation information) might go astray. Changes of address may be updated through the University's Information Server PEGASUS.

## **DIFFICULTIES**

If you find yourself with a problem or in difficulty the University has people and procedures in place to help (please refer to the University Handbook for contact details of all the main University services) but within the department, help is also available, thus you can go and see your PDA or Year Coordinator in the first instance. Do not delay getting help as often the problems are much reduced if tackled early enough. If they cannot help themselves, they will often know of others who can help.

## **Classroom Protocol**

At the University we are committed to providing a safe learning environment where dignity is respected and discrimination or harassment does not occur on the basis of age, disability, gender reassignment, marriage and civil partnership, pregnancy and maternity, race, religion or belief, sex, sexual orientation and socio-economic background. No student should intentionally be made to feel threatened or excluded from class participation.

You are reminded of your responsibility for the duration of your studies by showing respect to fellow classmates and staff by remembering the following protocol:

- Attend all scheduled lectures/ seminars and/ or practical sessions such as labs, including any additional learning and teaching sessions.
- Arrive on time and remain in class until the end of the session. If you need to leave early for any reason, please notify the tutor at the beginning or prior to the class.
- Do not disrupt the class by habitually coming in late or coming and going from the classroom during the session. Students arriving late, without justified reasons, may be refused entry.
- Refrain from constantly interrupting another speaker and listen to the ideas of others with respect. Do not be rude or make personal attacks on individuals during group discussions.
- Inform and establish consent of the tutor if you wish to record the lecture. The recording must be used only for personal study.
- Do not bring food into the classroom, other than for medical reasons, e.g., diabetes. Beverages may be permissible at the tutor's discretion if the room utilisation rules allow.
- Inform tutors of specific requirements, for example the need to perform prayers for practising students of diverse faiths.
- Seek consent of students and staff before taking any photos in the classroom.
- At any course related external visit you are acting as ambassadors of the University and are reminded to act as such.
- Refrain from smoking on premises as this is prohibited in all University buildings.
- Follow emergency instructions and health and safety procedures.
- Follow all instructions and guidance relating to Covid control measures in place. This is important to protect your health and the health of others. Please find the University guidance [here](#).

Should you have any concerns please bring them to the attention of your tutor and/ or appropriate University staff.

## **Equality and Diversity**

The University of Strathclyde is committed to achieving and promoting equality of opportunity in the learning, teaching, research and working environments. We value the diversity of our students and support the development of mutual respect and positive relations between people.

The University has in place Equality Outcomes which meet the requirements the Equality Act 2010. You are advised to familiarise yourself with the University approach on equality and diversity and relevant developments and information by visiting Strathclyde's [Equality and Diversity website](#). If you have any questions, please bring these to the attention of staff or the University's Equality and Diversity office.

Email: [equality@strath.ac.uk](mailto:equality@strath.ac.uk)

Telephone: 0141 548 2811

## **Women in Strathclyde Physics Association (WiSPA)**

The Department has a group which aims to provide a private forum for any woman in Physics at Strathclyde to be able to discuss any issues or problems they may encounter working or studying in a predominantly male environment. In particular, the group can provide confidential advice and support to anyone who feels they need it and hopefully encourage more women to continue on STEM career paths. This group is for anyone within the Department identifying as female. We would love you to join our group – if you are interested, please click on '+ Join group' via this link <https://www.facebook.com/groups/164364574339494/>

## **SAFETY REGULATIONS**

These apply to all parts of the University. Your attention will be drawn to these when they affect you. Particular care needs to be exercised in laboratories, and in general, you are not allowed to work in a laboratory unsupervised. For this reason, it is not usually possible to make up time lost for any reason during a laboratory session by putting in extra time later. The Department's general safety advice is listed further on in this handbook, see the [Safety section](#).

# YOUR DEGREE PROGRAMME

## COURSE REQUIREMENTS

Each degree course is made up of a number of modules. A full year's curriculum normally totals a minimum of 120 credits. The modules you choose must be agreed with your Year Coordinator (see below) and then you will be able to complete your registration with the University. The details of the core modules you will take each year are given in [Appendix 1](#).

Further information about all the modules offered by this Department can be found at the [Curriculum](#) webpage.

Each degree course is governed by a set of Regulations that specify the compulsory modules you must follow for that degree course as well as the progress requirements to move from one year to the next year of a given degree course. These are detailed in [Appendix 1](#). If there are any changes to these regulations, the department will always use the version of the regulations that is in the best interest of the students.

In addition to the degree specific Regulations you are bound by a set of general regulations and these can be found at [Academic Regulations](#).

### *Timetables*

The timetables for each degree course will be available on the University website at the start of each semester see <https://www.strath.ac.uk/professionalservices/timetables/>.

There is a video at <https://www.strath.ac.uk/science/physics/currentstudents/timetable/> which shows you how to use the timetable page.

**PLEASE NOTE THAT AT THE START OF EACH SEMESTER, ROOMS ARE SUBJECT TO CHANGE AND YOU SHOULD CHECK THE TIMETABLE FREQUENTLY.**

### *Personal Development Advisers (PDA)*

As well as a Year Coordinator, you will also be assigned to a member of academic staff who will act as your Personal Development Adviser (PDA). The role of the PDA is to encourage you to reflect on your study in Physics and help you develop to be a Physicist who is enquiring, engaged, enterprising and ethical, all the attributes necessary for a graduate fit for the 21<sup>st</sup> Century. Should any problems arise during your study, your PDA will be able to direct you to the relevant support staff within the University. If you have any problems, then please inform the Department so that we can put measures in place to help you. If you have any problem contacting your PDA, please contact your Year Coordinator.

### *Teaching*

The teaching offered by the Department is primarily done via lectures and these are supported by tutorials and lab-based modules. **There is a strong correlation between performance and attendance.** The Department will be monitoring attendance at lectures and tutorials and poor attendance, without a valid reason, may result in you being unable to sit any examinations.

### *Student-Staff Committee*

The Department has a Student-Staff Committee (convened by a student and supported by the Director of Teaching) that is made up of student representatives from each year and a number of academic staff. Students are invited to choose their own representative in the first two weeks of the first term. The Committee has an important role, resolving difficulties that may arise. [Should we say something about "Student Voice" here? Or "You Said, We Did"??]

The Student Staff Committee will meet in both 1<sup>st</sup> and 2<sup>nd</sup> semesters in weeks 4 and 8.

*Becoming a Student Rep:* Student representation is an important part of your time at the University of Strathclyde. [StrathReps](#) at all levels will help represent yourself and other students' voices to the relevant University staff.

[The Strath Union](#) offers training on how to be an effective representative. The Committee considers anything that affects the teaching of the courses or Student-Staff relations. Problems that are personal to you should be raised with your PDA or Year Coordinator. Matters affecting a group of students should be raised in the first instance with any staff member directly involved, but if this fails to resolve the matter, or if it raises wider issues, then ask your Student-Staff Committee Representative to raise it at their next meeting.

## *Textbooks*

It is important that you obtain recommended textbooks at the first opportunity. First year students are encouraged to use the following textbooks:

- **Christian Hill 'Learning Scientific Programming with Python'**
- **Jordan and Smith 'Mathematical Techniques' 4th Edition**
- **Halliday, Resnick and Walker 'Fundamentals of Physics'** - you will be given **free** access to this via your University student e-mail address. Details in class and on Myplace.

These are also available at the [University library](#).

We recommend that you purchase these books as soon as possible since you will need them from week 1 onwards. These books will be used in the first and second year of each degree course to support the compulsory modules.

## *Report Writing*

A key skill for any physicist is to communicate the outcomes of an investigation to a wider audience. During your course you will be expected to write formal reports on the practical work that you undertake in years 1 to 3 and the final year projects that you take in your 4<sup>th</sup> and 5<sup>th</sup> year of study. During the first three years of your study at Strathclyde, the Department will give you the necessary training on how to write reports and this will include advice on the structure and content of the report, how to reference and how to avoid plagiarism, the unaccredited use of another person's work.

The Department will use the anti-plagiarism software [Turnitin](#) to check for plagiarism.

**BY SUBMITTING ANY WORK, THROUGH TURNITIN OR OTHERWISE, YOU ARE ACKNOWLEDGING THAT YOU ALONE ARE THE AUTHOR OF THE WORK.**

## **PLAGIARISM**

Plagiarism most commonly involves the misrepresentation of another person's work as your own and is a **serious form of academic dishonesty**. Plagiarism often involves the copying of another person's work, be it a figure, text, experimental data or homework for example and not acknowledging the source of the work. Plagiarism can be avoided by suitable referencing. For more details on plagiarism please see the University Handbook and follow this link <https://www.strath.ac.uk/plagiarism/> for guidelines on plagiarism.

If you are unsure of any aspect of this, please contact the Department. The department will make extensive use of software capable of detecting plagiarism, in this case [Turnitin](#) to check for plagiarism. Any student caught plagiarising another person's work will be subject to the University Discipline Procedure. This will result in penalties to the student involved and the student may be reported to the University Disciplinary committee, which can result in expulsion to the University.

## Feedback

Feedback is an essential part of your learning and it is important that you act on the feedback given. This feedback can come in a variety of ways – for example as simple grades, written solutions to tutorial problems, online feedback, guidance on how to improve your lab reports or project reports, discussions in lectures.

The Department follows the Faculty of Science policy on feedback in that if a type of feedback is to be provided on a piece of work it will be given within 15 working days of the hand in date. If a member of staff cannot meet this deadline then (s)he will let you know. Further details are available at [Assessment & Feedback](#)

## INFORMATION TECHNOLOGY, PERSONAL TRANSFERABLE SKILLS, PEGASUS, AND MYPLACE.

Expertise in *information technology* (IT) and well developed *personal transferable skills* are essential if you are to maximise your performance in the academic work of your chosen course. Essays, laboratory and project reports, for example, must normally be word processed while the ability to analyse and plot experimental data using available software packages is essential for progress in scientific research. Familiarity with IT also allows you to search the internet and electronic databases for reference material to assist in the writing of assignments and dissertations. In the later years of the course, the emphasis on project work trains you in the planning and performance of research, while the preparation and delivery of presentations gives you the confidence to communicate your results and their relevance to both specialists and non-specialists as is required of professional scientists.

- Year 1: Laboratory reports, problem solving, data presentation and computational skills. These are covered in the modules PH180 Experimental Physics, PH181 Mathematics for Physics 1A, PH182 Mathematics for Physics 1B PH183 Mechanics and Waves, PH184 Quantum Physics and Electromagnetism, and PH185 Computational and Physics Skills
- Year 2: Laboratory reports, problem solving and the preparation and delivery of a talk; use of computers for numerical modelling and problem solving. These are further developed in the modules PH280 Experimental Physics, PH281 Mathematics for Physicists 2A, PH282 Mathematics for Physicists 2B, PH283 Mechanics and Waves, PH284 Quantum Physics and Electromagnetism, and PH285 Computational and Physics Skills.
- Year 3: Laboratory reports, library skills, essay, project training, poster presentation, CV skills and problem solving. These skills are refined in core physics modules PH380 Experimental Physics I, PH390 Experimental Physics II, PH384 Quantum Physics and Electromagnetism, PH386 Condensed Matter Physics, PH387 Gases, Liquids and Thermodynamics, and PH385 Communicating Physics
- Years 4 & 5: Research project and its written and oral presentation, research training. The modules PH450 Project, PH550 Project, and PH551 Research Skills are designed to develop the aforementioned transferable skills.

## CYBER SECURITY

The University's online cyber security training highlights current threats and provides practical guidance on how to stay safe online. The module has been developed specifically for Higher Education. Year 1 and Year 2 students will do this as part of PH185 and PH285.

All students are expected to complete the training. It should take no longer than an hour to complete and can be undertaken in short sections. Please access the course using the link below:

[Cyber Security Training for Students](#)

## PEGASUS and MYPLACE

The University has developed its own information server, PEGASUS, which is used to provide services to both staff and students. Please refer to [Strathlife](#) for further information. In addition to PEGASUS, the University has a VLE (Virtual Learning Environment) called MYPLACE, and this is used to provide copies of lecture notes, assignments, tutorial questions etc., as well as providing discussion forums for students. As with PEGASUS you will receive training on the use of MYPLACE in the first weeks of your course and information relating to MYPLACE can be downloaded from: <https://modules.myplace.strath.ac.uk/>

## ACADEMIC

### ATTENDANCE (OR PARTICIPATION FOR ONLINE SESSIONS)

**ATTENDANCE AT TUTORIALS AND LABORATORY SESSIONS IS MANDATORY AND THE DEPARTMENT WILL BE MONITORING ATTENDANCE AT LECTURES. POOR ATTENDANCE AT LECTURES AND TUTORIALS FOR A GIVEN MODULE WILL RESULT IN YOU BEING MARKED AS “NOT QUALIFIED (NQ)” TO SIT THE EXAMINATION FOR THAT MODULE. FAILURE TO MAINTAIN A HIGH LEVEL OF ATTENDANCE MAY RESULT IN TERMINATION OF YOUR REGISTRATION.**

There are a variety of policies that guide student life at Strathclyde these can be found at:

[Policies & Procedures for students](#)

[Personal Circumstances Procedure](#)

[Academic Dishonesty Guidance](#)

[Absence and Voluntary Suspension](#)

[Extensions to Coursework Submission](#)

[Late Submission of Coursework](#)

[Complaints Procedure](#)

### ASSESSMENT AND PROGRESS

There are a variety of methods by which modules are examined and the lecturer at the start of a class should give the relevant details. You should note that the pass mark for modules at Levels 1 - 4 is 40% and for Level 5 modules it is 50%. You should be aware that the progression requirements for both the BSc and the MPhys degrees are different from the pass mark. The level you need to achieve can be found on pages 19 – 20. Note that the credits associated with a class are indivisible. You cannot be awarded a fraction of its credits for meeting part of its requirements.

The most common assessment method is by examination. The conduct of examinations is covered by University regulations including:

1. You need to produce your student identity card at exams.
2. You are forbidden to have with you in the exam room notes of any sort unless the exam instructions explicitly permit them. [Possession of such notes in the exam room is an offence, irrespective of whether use is made of them.]

In *Physics* examinations you cannot take into any examination graphical calculators with memory bank facilities, and in particular, no calculator with alphabetic input. (In *Physics* and *Mathematics* exams, *programmable* calculators are forbidden. Other Departments may have other special restrictions for their examinations.)



## TURING SCHEME

### [Student Exchange Abroad](#)

The Department has exchange partnerships with an impressive range of universities around the world that allow students to spend up to a year studying abroad during their 3<sup>rd</sup> or 4<sup>th</sup> year. There are many benefits to studying abroad, from help with foreign language skills to enhancing your CV. You can find more information on the scheme at the [Study Abroad](#) page. Keep an eye on the notice boards on the 8<sup>th</sup> Floor (Physics Dept.) for news.

The [Turing scheme](#) is the UK government global programme to study and work abroad. Find out more about the programme, including eligibility, application deadlines below:

<https://www.turing-scheme.org.uk/about/about-the-turing-scheme/>

If you are interested and would like to know more, please contact Dr Francesco Papoff at [f.papoff@strath.ac.uk](mailto:f.papoff@strath.ac.uk) (Room JA 7.10) before November. The number of such places is limited and preference is given to those whose academic progress suggests they will benefit from the extra challenge of study abroad.

## PRIZES

A number of prizes are given at the end of each year of each course. The value of the prizes is usually quite modest: they are intended only as an incentive and encouragement as you work towards your degree. Details of the prizes can be found in [Appendix 4](#) of this handbook.

## DEAN'S LIST

The Dean of Science recognises the excellent performance of students by awarding the Dean's List Certificate.

## EXAMINATION ATTEMPTS

All students will be entitled to TWO attempts only to gain the credits for any class. For level 1, 2 and 3 modules, these attempts will normally comprise the First Attempt taken in either the January or the May Diet of Examinations and the Second Attempt taken in the August resit Diet of Examinations. For level 4 and level 5 modules the resit attempt will usually be in the exam diet of the following year. For some modules, such as Practical modules or modules with significant elements of continuous assessment, both attempts may take place during the 1<sup>st</sup> and 2<sup>nd</sup> semesters. It is the lecturer's responsibility to outline the assessment procedure for the class at the start of the course. **It is important to note that all credit-weighted average calculations are made using the first attempt mark.**

## Targets

You should aim to obtain the credits for all your modules because progress to later years of the course and the award of the degree depend on your cumulative credit total.

At all stages of the course, a student must have achieved an approved standard of performance with regard to level of study and academic attainment.

The approved progressions standards are:

<b>MPhys Physics</b>	-	<b>Credit weighted average <math>\geq</math> 55%</b>
<b>MPhys Physics with Advanced Research</b>	-	<b>Credit weighted average <math>\geq</math> 75%</b>
<b>BSc Hons Physics</b>	-	<b>Credit weighted average <math>\geq</math> 45%</b>
<b>BSc Hons Physics with Teaching</b>	-	<b>Credit weighted average <math>\geq</math> 45%</b>

For full time students the credit-weighted average is based on ALL of the modules you have taken in the **current** year of study and is calculated by:

$$CWA = \frac{\sum_i c_i m_i}{\sum_i c_i}$$

where  $c_i$  is the credit value of the class,  $m_i$  is the percentage mark gained in the class. The credit-weighted average is based on the first attempt mark for a class. Failure to achieve these standards may result in you being transferred to a different degree e.g. MPhys to BSc (Hons) Physics.

### PROGRESSION REQUIREMENTS FOR 1<sup>ST</sup> YEAR

	1 <sup>st</sup> Year to 2 <sup>nd</sup> Year
Degree	Credit Requirements
MPhys, BSc (Hons) Physics and Physics with Teaching degrees	In order to progress to the second year of the course, a student must normally have accumulated at least 100 credits from the course curriculum.
MPhys Physics with Advanced Research	In order to progress to the second year of the course, a student must normally have accumulated at least 120 credits from the course curriculum.
BSc (Hons) Mathematics and Physics degree	In order to progress to the second year of any Honours degree course, a student must normally have accumulated at least 100 credits from the course curriculum including the credits for MM 101 and MM 102.

### PROGRESSION REQUIREMENTS FOR 2<sup>ND</sup> YEAR

	2 <sup>nd</sup> to 3 <sup>rd</sup> Year
Degree	Credit Requirements
MPhys Physics and BSc (Hons) Physics degrees	In order to progress to the second year of the course, a student must normally have accumulated at least 220 credits from the course curriculum.
MPhys Physics with Advanced Research	In order to progress to the second year of the course, a student must normally have accumulated at least 240 credits from the course curriculum.
BSc (Hons) Physics with Teaching degree	In order to progress to the third year of the course, a student must satisfy the requirements for entering Initial Teacher Education, be a member of the PVG (Protection Vulnerable Groups) Scheme or, if already a member, must apply for an update and have accumulated at least 220 credits from the course curriculum.
BSc (Hons) Mathematics and Physics degree	In order to progress to the third year of the course, a student must have accumulated at least 220 credits from the course curriculum including those for the class MM 201

## PROGRESSION REQUIREMENTS FOR 3<sup>RD</sup> YEAR

	3 <sup>rd</sup> to 4 <sup>th</sup> Year
Degree	Credit Requirements
MPhys Physics, MPhys Physics with Advanced Research and BSc (Hons) Physics degrees	In order to progress to the fourth year of the course, a student must have accumulated at least 360 credits from the course curriculum including 60 credits at Level 3 or above.
BSc (Hons) Physics with Teaching degree	In order to progress to the fourth year of the Honours course, a student must normally have accumulated at least 360 credits from the course curriculum including 60 credits at Level 3 or above.
BSc (Hons) Mathematics and Physics degree	In order to progress to the fourth year of the course, a student must have accumulated at least 360 credits from the course curriculum including 120 credits at Level 3 or above.

## PROGRESSION REQUIREMENTS FOR 4<sup>TH</sup> YEAR

	4 <sup>th</sup> Year to 5 <sup>th</sup> Year
Degree	Credit Requirements
MPhys Physics, MPhys Physics with Advanced Research degree	In order to progress to the fifth year of the course, a student must normally have accumulated at least 480 credits from the course curriculum.

## DEGREE AWARD CREDIT REQUIREMENTS AND CLASSIFICATION

Degree Type	Credit Requirements
BSc Physics degree	To be awarded a BSc Physics degree you must have accumulated 360 credits of which 60 credits must be at Level 3.
BSc (Hons) Physics degree	To be awarded a BSc Physics degree with Honours you must have accumulated 480 credits of which at least 90 credits at Level 3 or and 90 credits must be at Level 4 or above. This must include passing PH450 Project.
MPhys Physics degrees	To be awarded a MPhys Physics degree you must have accumulated 600 credits of which at least 220 credits must be at Level 4 and 5 and of these 120 must be at Level 5 or above. This must include passing PH450 Project and PH550 Project.
BSc (Hons) Physics with Teaching degree	To be awarded a BSc Physics degree with Honours you must have accumulated 480 credits, out of which 120 credits must be Education related, Level 4 or above as indicated <a href="#">here</a> .

The Honours degrees are classified into four grades, Class I (a "First"), Class II(i) (an "Upper Second"), Class II(ii) (a "Lower Second") and a Class III (a "Third").

MPhys degrees are classified as for BSc Honours degrees, except there is no Class III.

The level of award is determined by the mark generated by Faculty of Science Degree Award Algorithm (FSDAA), detailed in Appendix 3. The mark required for each class of award is:

Honours Degree Classification	FSDAA Mark
First	≥ 70 %
Upper Second	≥ 60 %
Lower Second	≥ 50 %
Third	≥ 40 %

Students who fail to qualify for a degree may be eligible for the award of the Diploma or Certificate of Higher Education.

Award Type	Credit Requirements
Diploma of Higher Education	To be awarded a Diploma of Higher Education you must have accumulated 240 credits with a minimum of 100 at Level 2
Certificate of Higher Education	To be awarded a Certificate of Higher Education you must have accumulated 120 credits with a minimum of 100 at Level 1

## EXTERNAL EXAMINERS

Whichever method of assessment is used to assess a class, the mark for that class is approved by an Examination Board. For students in years 1 to 3 this is a General Board of Examiners managed by the Faculty. For 4<sup>th</sup> and 5<sup>th</sup> year students the Department manages the Examination Board. The Departmental Examination Board comprises all members of Staff in the Physics Department plus representatives from Mathematics and Statistics and the School of Education. In addition to these two External Examiners sit on the Examination Board and the role of their role is to ensure that the Department has operated in a fair and equitable manner when setting and assessing exam papers and course work. This year the External Examiners are:

Dr P Dalgarno  
Heriot-Watt University  
Edinburgh

Dr L Hadfield  
University of St Andrews  
St Andrews

Prof Andrzej Wolski  
University of Liverpool  
Liverpool

Dr Stephen Reynolds  
University of Dundee  
Dundee

## **EXAMINATION BOARD DECISIONS**

The General Board meets first in June and then in September, to consider the results of August re-sit examinations, in September. The Department Board only meets in June. The Boards of Examiners will take one of the decisions listed below which will then be notified through PEGASUS.

The University operates a Compensation Scheme, details of which can be found at [Policy on Compensation Scheme and Progress](#).

In summary, the compensation scheme works as follows: If your credit-weighted average for the year of study is greater than or equal to 45 % and you fail a class with a mark between 30 and 39 % you will be awarded the credit for that class. This applies to only 20 credits of material and is normally applied to the class which is closest to 40 %. The compensation scheme only applies to the 1<sup>st</sup> attempt mark for any class and covers years 1 to 3 of the BSc degrees and 1 to 4 of the MPhys.

### **PASS (WITH MERIT / WITH DISTINCTION)**

This means that you have passed all modules for which you were registered and may progress to the next year of the same course. If you are awarded a *Pass with Merit* your credit-weighted average over the year is  $\geq 60\%$ . If you are awarded a *Pass with Distinction* your credit-weighted average over the year is  $\geq 70\%$ .

### **RESIT**

This decision indicates that you have to resit and pass the examination(s) in the class or modules specified before you can be permitted to proceed to the next year of your course.

### **MAY PROCEED**

This means that although you have not passed all of your examinations, you have obtained enough passes to go on to the next year of your course. This will apply only after the resit diet of examinations.

### **SUSPEND**

If, by the September Examination Board, you have not satisfied the progress regulations, your registration will be suspended and you will not be permitted to attend modules for the following session

### **TRANSFER**

A student who does not meet the requirements for progress on an honours degree course may be required to transfer to the corresponding degree in the subject

### **REATTEND**

The Examination Board recognises that mitigating circumstances may have affected your performance over the year and have recommended that you repeat the year. (This may have financial implications and you are advised to check with SAAS.)

### **WITHDRAW**

A student whose performance is considered to be so bad that none of the above alternative decisions would be appropriate will be required by the Examination Board to withdraw from his or her present degree course.

You may also have the following comments next to individual class marks:

### **PASS BY COMPENSATION**

The University Compensation Scheme has been applied to this class. Your overall level of performance is such that you have been awarded the credit for the class even though the mark that you have achieved for the class is less than the standard pass mark (40 %).

## **ATTEMPT DISCOUNTED**

The Examination Board recognises that factors, such as ill health or adverse weather may have affected your performance in the class. The mark you achieve for the class is discarded and the next attempt at the class is regarded as the first\* attempt. (\*If the mark discounted is a re-sit the attempt will be regarded as the same number as the re-sit attempt e.g. 2<sup>nd</sup>, 3<sup>rd</sup> or 4<sup>th</sup> attempt.)

Decisions to discount attempts or to allow you to re-attend are made by the Examination Board relevant to your year of study. In order for the Examination Board to make an appropriate decision all personal circumstances must be reported to the Examination Board. Completing the personal circumstances section on PEGASUS, notifying your Year Coordinator or your PDA, can do this. Irrespective of the approach you choose, notification must be done before the Examination Boards meet. For General Board A the meeting dates are scheduled to take place in:

June Examination Board A (dates to be decided):

Pre-Board June 2024

Board June 2024

Re-sit Examination Board A:

Pre-Board will take place late August 2024

Board will take place late August 2024

Final Year Examination Board

Both the Pre-Board and Board will probably meet in the week commencing 3<sup>rd</sup> June 2024. The 4<sup>th</sup> and 5<sup>th</sup> year students will be notified of the correct dates when these have been agreed with the External Examiners.

Note that students have the right to appeal the decisions of the Exam Boards, and information will be provided in their results letter on Pegasus. The policy on academic appeals can be found at:

<https://www.strath.ac.uk/studentlifecycle/appeals/>

## MINIMUM CREDIT REQUIREMENTS FOR 1<sup>ST</sup> – 3<sup>RD</sup> YEAR INCLUSIVE

For students in Years 1 to 3 your examination performance is considered by the Faculty's General Board of Examiners A, which meets in June and August. The Board makes progress decisions based on your credit totals and below indicates decisions that are made for given credit totals.

CREDIT TOTAL	June Decision	September Decision
First Year		
120	Pass	Pass
$100 \leq x < 120$	Resit	May Proceed
$60 \leq x < 100$	Resit	Suspend
$0 \leq x < 60$	Resit and Caution	Withdraw
Second Year		
240	Pass	Pass
$220 \leq x < 240$	Resit	May Proceed
$180 \leq x < 220$	Resit	Suspend
$120 \leq x < 180$ (including 100 at Level 1 or above)	Resit and Caution	Withdraw - Award CertHE
$0 \leq x < 120$	Resit and Caution	Withdraw
Third Year (Honours Degree)		
360	Pass	Pass
$300 \leq x < 360$	Resit	Suspend
$240 \leq x < 300$	Resit and Caution	Withdraw - Award DipHE
$120 \leq x < 240$ (including 100 at Level 1 or above)	Resit and Caution	Withdraw - Award CertHE
Third Year (Pass Degree)		
360 (including 60 at Level 3 or above)	Award	Award
$300 \leq x < 360$	Resit	Suspend
$240 \leq x < 300$ (including 100 at Level 2 or above)	Resit and Caution	Withdraw - Award DipHE
$120 \leq x < 240$ (including 100 at Level 1 or above)	Resit and Caution	Withdraw - Award CertHE

## NATIONAL STUDENT SURVEY

Each year, graduating students are asked to take part in the [National Student Survey \(NSS\)](#). The results of this survey, which is run by Ipsos Mori, has much store put in them by the government and the universities funding body as well as being available for future UCAS applicants. The University makes good use of the results of this survey to enhance the student learning experience so we would encourage all eligible students to complete this survey.

You can find more information and take the survey by following the link:

<https://www.strath.ac.uk/professionalservices/educationenhancement/studentsurveys/nationalstudentsurvey/>

The Department also uses the NSS to inform its teaching. Over the past few years, the Department has performed well in NSS. The Department would like to maintain this so if there is anything that needs addressing then please let us know and we will try to deal with it.

In addition to the NSS, the University runs the (SUSS). The Department also makes use of module surveys at various points in the academic year. The feedback we receive from these surveys helps inform the teaching and learning in the Department.

## GRADUATION

### *What is Graduation?*

The University holds Degree Congregations each year at which students graduate with degrees of the University. Until you have graduated, in person or "in absentia", you are not entitled to call yourself a graduate. For consideration for many types of employment, it is necessary to be able to show your degree certificate, presented to you at Graduation.

### *When are the Degree Congregations?*

June and November in the [Barony Hall](#). The dates and times for your degree ceremony will be announced in March.

### **Registration for Graduation**

#### *Who should register to Graduate?*

All students hoping to graduate should enrol to graduate using our [graduation portal](#). Registration is essential even if you want to graduate "in absentia" (i.e. the degree is conferred in your absence). The Department advises all students whether on the MPhys or BSc Honours degrees to register for Graduation in their 4<sup>th</sup> year. If you are studying on the MPhys degree and continue to 5<sup>th</sup> year the Graduation Office will hold your fee for next year's Graduation.

You cannot graduate twice with any degree. If you expect to qualify for a BSc Degree this year, but hope to go on to Honours, you should consider deferring graduation until your Honours Year. Students who graduate with a BSc Degree and then qualify for an Honours degree may apply for a Post-Graduation Honours parchment setting out the subject and class of Honours awarded. No registration fee is required for Post-Graduation Honours.

#### *When do I need to register?*

As soon as the [Graduation website](#) indicates the relevant dates. Do not wait until you have sat your examinations or until your award is approved - that will be too late. Graduation enrolment should be made using our [online enrolment form](#)

#### *What are the fees?*

There is no fee to graduate either in absentia or in attendance at a ceremony. However, you MUST enrol to graduate so that your certificate can be prepared for you. The hire charges for the appropriate hood and gown are about £45.



### ***How do I graduate "in absentia"?***

Your degree will be conferred "in absentia" if you wish (tick the appropriate box on the form). Your award parchment will be posted by standard mail to the address you provide on the enrolment, at the beginning of July. UK address delivery is normally within five working days and for non-UK addresses we recommend allowing up to 20 working days from date of postage.

### ***What happens if I do not qualify in time for graduation?***

If you have registered to graduate in June but you do not qualify for the degree in time, Registry will assume that you will graduate "in absentia" at the November ceremony; similarly, if you register for November but do not qualify in time your registration would be deferred to June.

### ***Debtors***

If you owe the University money for any reason (fees, rent, library fines) you will not be permitted to graduate. You should clear any debts with the Finance Office or the Library immediately.

### **Graduation Day**

If you have registered to graduate by the appropriate date and have qualified for the award of the degree, Registry will send you information in the week before Graduation. This will include tickets for two guests to attend the ceremony.

### ***What do I wear?***

All students attending a graduation ceremony must wear academic dress. Please contact [Ede & Ravenscroft](#) to book your gown, (search institution 'University of Strathclyde'). Make sure you hire your gown as soon as possible after you have confirmed your attendance at your specific ceremony date and time. The correct academic dress (i.e. the gown and hood appropriate to your degree), otherwise you will not be permitted to graduate. The University does not provide gowns, but they can be hired.

Graduation ceremonies are a formal, ceremonial occasion and you should therefore wear appropriate smart, formal clothing like:

- dark suit
- dark jacket & trousers, with a white shirt
- dark skirt or trousers with a white blouse, or white or dark dress
- recognised national dress e.g. kilts

### **Contact Details for Graduation**

#### **Awards & Graduations**

[graduation-enquiries@strath.ac.uk](mailto:graduation-enquiries@strath.ac.uk)

Help with student or guest accessibility arrangements [graduations-support@strath.ac.uk](mailto:graduations-support@strath.ac.uk)

#### **Student Business**

#### **Student Experience Helpdesk**

You can contact the Student Experience Helpdesk in several ways:

- **in-person:** Monday to Friday (9.30 am to 4.30pm), Level 4 of the Learning & Teaching Building
- **email:** [student.helpdesk@strath.ac.uk](mailto:student.helpdesk@strath.ac.uk) (emails are monitored Monday to Friday, 9am to 5pm)
- **phone:** [+44 \(0\)141 444 8855](tel:+441414448855) (phone lines are open Monday to Friday, 9am to 5pm)

#### **Finance Helpdesk**

Level 1 [McCance Building](#)

- **in-person:** Monday to Friday, 9am to 5pm

- **email** [finance-helpdesk@strath.ac.uk](mailto:finance-helpdesk@strath.ac.uk)
- **phone** [+44 \(0\)141 548 4500](tel:+44(0)1415484500)

**IT Helpdesk and Library:** [help@strath.ac.uk](mailto:help@strath.ac.uk)

## CAREERS GUIDANCE

### 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> Years: Have You Thought About Your Future?

Do not leave it until your final year to think about your career! Employers tell us that as well as a good degree they value the other things you have done while at university to develop your skills and your personal attributes. Use the Careers Service from 1st year to explore opportunities to gain work experience through part time work, volunteering, internships and to reflect on the benefits gained from these and all the activities on your course. This self-knowledge will enable you to explore the options open to you. See here for the [introductory video](#).

If you are not sure where to start, have a look at the [Careers Service website](#), which you can revisit throughout your time at university as your ideas change and evolve. The Work Experience section has information about different types of experience and links to case studies where students share their experiences. Regularly check our vacancy portal to view internships, placements and graduate jobs. Throughout the year the Careers Service is buzzing with opportunities for you to develop your skills and knowledge and hosts many employer-led skills sessions and talks. Regularly check our Events calendar for more information and to pre-book.

Competition is fierce so it is important to think through what career you might follow well before you graduate. Do this early and take advantage of all the opportunities described above so that you are ready to apply at the start of your final year. Many applications close well before Christmas and job offers can be made subject to your final grades, which is a great motivator to get you through your final year.

### 4th and 5th Year: Career Planning and Development, Successful Applications

Your final year is the time to follow through on the planning and research you have done into your career choice during 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> year. This should have helped you to progress your career thinking to a point where you are ready to take some action. However, if you have not yet started to consider the future beyond your degree the whole process will need to be incorporated into this year. You will need to balance the academic demands of your course with the final stages of career planning and job search. Decisions will need to be made at various stages and the timing of these will vary depending on your career focus. Make good use of the Careers Service to help refine your career focus and embark on the job/postgraduate search process.

### Your [Careers Service](#), Your Future

We offer plenty of support, for example:

- **Quick Queries** with a Careers Consultant can be booked online 48 hours in advance - <https://www.strath.ac.uk/professionalservices/careers/aboutus/services/>.
- **Guidance Appointments** with a Careers Consultant can be booked by emailing [yourcareer@strath.ac.uk](mailto:yourcareer@strath.ac.uk)
- **CV360** – Get instant detailed feedback on your CV using our CV360 tool before booking a CV Check. CV360 is accessible through our Online Careers Toolkit. How? Quick link via home page
- **CV Checks** (which includes applications and LinkedIn reviews) with a CV Adviser can be booked online 48 hours in advance -
- **Online Interview Simulator** (soon to be rebranded to Interview360) – to practice your virtual interview skills. Accessible through our Online Careers Toolkit. How? Quick link via home page
- **Practice Interviews** – These can be booked by emailing [yourcareer@strath.ac.uk](mailto:yourcareer@strath.ac.uk).

- Our website has extensive **occupational, postgraduate and employer information** to inform your career research as well as resources on making applications
- We also recommend the graduate careers website, **Prospects**, where you can use [Career Planner](#) to see what options might suit you.
- We also recommend the website [Gradcracker](#) which is the UK Career website for STEM students to search for work placements, internships and graduate jobs.
- Attend the virtual **Scottish Graduate Fair on the 27 and 28 September 2023**. To pre-register and view the list of exhibitors go to <https://www.strath.ac.uk/professionalservices/careers/sgf/>
- Finally, don't forget to check our **Vacancy portal and Events calendar** regularly!

Careers Service staff are happy to help you at whatever stage of the career planning job search process you have reached. They also offer a service to our graduates, which is accessible for five years, so if you need help beyond your degree, keep in touch.

Stephen Smith is the Careers Consultant to the Faculty of Science. You will get to know him through Careers talks during the year in the Department and through events, and activities that we encourage you to attend from 1<sup>st</sup> year. Follow Stephen on Twitter @StephenCareers where he shares information, and opportunities, of relevance to students and graduates of the Faculty of Science.

## KEY INFORMATION

1. Check the Vacancy portal to access paid work experience (Summer/1 year), graduate opportunities. How? Quick link via home page
2. Check our EVENTS calendar regularly for employer-led information/skills sessions, Careers Service briefing sessions/events. How? Quick link via home page/University app
3. Book online to have your CV/application/covering letter/personal statement etc checked. How? More information/book via quick link
4. Got a question? [FAQs](#) or email [yourcareer@strath.ac.uk](mailto:yourcareer@strath.ac.uk)

## QUICK GUIDE TO KEY RESOURCES ON THE CAREERS SERVICE WEBSITE

### [Choosing your career](#)

- Choosing your career: an interactive online course and other resources

### [Occupational resources](#)

- Sector information/job search resources/professional bodies/case studies

### [Work experience and internships](#)

- Types of work experience/advice on working during studies/job search tips

### [Making applications](#)

- Advice about: CVs/covering letters/application forms/personal statements/LinkedIn profile

### [Psychometric tests](#)

- What they are/how to prepare/online practice tests/practice tests in Careers Service/brush up your numeracy skills

### [Assessment Centres](#)

- What they are/typical exercises & activities/how to prepare/how you are assessed

### [Interviews](#)

- How to prepare (checklist)/strengths-based interviews/video interviews/telephone interviews/interview practice/additional resources

### [Postgraduate study and research](#)

- Useful resources/course search/study abroad/funding

### [International experience](#)

- Work and study options/international job search/advice for international students

## SAFETY NOTES

Safety is YOUR business and responsibility at all times. These notes supplement the Department's Safety Regulations and should be read carefully. Specialised training might be required and it is mandatory to make yourself familiar with and to sign any local rules, risk assessments and methods of work for your specific experiment.

**Potential hazards in physics laboratories** include fire, electrical, materials and chemicals, machinery, gas cylinders, "common" accidents, ionizing radiation, laser UV, and microwave radiation.

### Fire

Be aware of the quickest fire escape routes from the areas that you are in. If the fire alarm sounds (continuous tone) make your way, immediately, to the nearest exit without losing any time. Do not let waste paper accumulate. Do not leave gas burners on unattended. Electrical equipment, especially older power supplies can go on fire if short circuited and wrongly fused. Rotary pump motors can seize (i.e., jam) and go on fire if not properly protected. In general, switch off unattended equipment, unless there is a good reason for leaving it on. Know where the fire exits are.

### Electrical

Current through the heart stops operation of heart. Use safety equipment (see below). When adjusting equipment keep one hand away from equipment and away from any earthed conductor. This reduces current through heart from two-handed contact from 'live' to 'earth'. Know about resuscitation procedures - see notices displayed in every lab.

- Mains operated equipment including 5V power supplies, desk lamps etc.: Safety depends on correct wiring of plug, good quality cable, right fuse, proper earthing. "Tingly feelings" in fingers when touching equipment indicates that it is not earthed properly. Report defects to demonstrators or lab technicians - do not leave it for someone else.
- High voltage capacitor banks are very dangerous. Lethal charge is stored long after power supply is switched off if a fault occurs in protection circuits. Safety depends on good insulation and safety checks before alteration or maintenance (forbidden to students).
- Any high voltage equipment. "Tracking" occurs across the surface of insulators, high voltage can then appear at unexpected places. Switch off power supply when altering circuit.
- Darkroom equipment - e.g. safety lights, driers etc. Dangerous because the darkroom is usually small, badly lit and wet (you are well earthed and hence at risk).

### Materials and chemicals

- Many common chemicals and solvents are toxic - cancer an important risk, e.g. benzene, carbon tetrachloride, chloroform. Good ventilation is important. Tap water is not necessarily drinking water.
- Many solvents are inflammable - especially benzene.
- Do not tip solvents down sink unless it is certain they will do no harm.
- Unless you have good knowledge of chemistry, do not mix chemicals without first getting expert advice.
- Alkali metals (e.g., sodium Na, potassium K) react explosively with water.
- Mercury fumes are poisonous. If mercury gets spilled, inform your demonstrator.
- Liquid nitrogen is cold but causes burns. Make sure it cannot splash into your eyes or onto your clothing, thus wear protective equipment when handling it.
- Asbestos fibres can lodge in lungs - causes cancer years later. Be cautious with asbestos and seek advice (there shouldn't be any asbestos in the lab).
- Many chemicals can cause dermatitis or other skin ailments (some people are more susceptible than others). Keep your hands away from chemicals (gloves available if needed). Wash your hands if they should come into contact with chemicals of any sort.
- In general - do not eat in labs. Wash hands after leaving the lab and before eating. Label all containers of chemicals and never use lemonade or similar bottles to store chemicals in.

### Machinery

- In the lab, rotary pumps have powerful electric motors with a drive belt. The belt guard is not infallible protection against long hair or a tie being caught up in the belt. Fans on diffusion pumps are also a hazard.
- In a machine shop - get expert advice. You should not use machines without supervision.

### **Gas Cylinders**

Contain gas at high pressure (~ 200 atmospheres). If a cylinder topples over, the danger results from its large weight and from the possibility that the cylinder neck may fracture (ejecting the valve). Gas cylinders should be secured to the wall. There are two valves to operate cylinders - get advice from the demonstrator the first time you use one.

"Common" accidents, e.g. falling down stairs, tripping over obstacles etc. Keep passageways clear of obstacles (e.g. bench stools, books, unused equipment) - especially in darkened labs. No horseplay in labs.

Radioactive or X-ray sources are covered by special rules. They must not be used without an approved scheme of work signed by the Department Radiation Protection Advisor.

**Lasers** are divided into modules, according to the power:

1	Harmless
2 or 3R	Low power but precautions needed
3B	Medium power - severe eye damage possible
4	Severe eye and skin damage possible

Before using any laser other than a class 1 you must have permission from your Supervisor who will arrange for an approved scheme of work countersigned by the Departmental Radiation Supervisor. For students who take a project including lasers you will have to attend the departments laser safety training.

Finally, your first accident may be one we have not thought of yet. So be careful.

Our best wishes for your studies during this academic year, 2021/2022. We welcome you and hope that you will enjoy your time with us. We cannot hope to make a degree in physics easy: it would not be worthwhile if it was, and it takes many years of hard work - but we will do all we can to make it an enjoyable experience, and to provide you with the facilities to make your study as effective as possible.

**We believe the information provided in this handbook is correct at the date of publishing but may be subject to revision.**

N.B. THIS HANDBOOK CAN BE SUPPLIED IN A VARIETY OF FORMATS TO SUIT YOUR NEEDS. PLEASE CONTACT THE DEPARTMENT FOR MORE INFORMATION

## APPENDIX 1 – Degree Regulations

To view the regulations for previous, current or upcoming academic years, please click on the relevant links below and this will download a PDF. Please note that the categories below are for subject groupings rather than specific programme titles.

- Individual programme regulations should be read in conjunction with the [General Regulations for Undergraduate & Integrated Masters Awards](#) and [General Regulations for Graduate and Postgraduate Awards](#)


Upcoming academic year (2023/24) and previous years archived regulations are available here:  
<https://www.strath.ac.uk/studywithus/academicregulations/physics/>

### **Academic year (2023/24) regulations:**

Undergraduate (UG) Awards

- [Physics \(PDF\)](#)
- [Physics with Advanced Research \(PDF\)](#)

## APPENDIX 2 - PROGRAMME SPECIFICATIONS

<b>Programme Specification</b>	 <b>University of Strathclyde</b>
<b>Programme title and name of final award:</b> BSc Mathematics and Physics (Honours)	
<b>UCAS Code:</b> GF13	
<b>Awarding institution:</b> University of Strathclyde	
<b>Teaching institution(s):</b> University of Strathclyde	
<b>Credit and level definition of final award:</b> Credit Total 480 SCQF (= 240 ECTS credits) including a minimum of 120 Level 10 SCQF credits (SHE Level 4) and a minimum of 120 Level 9 SCQF credits (SHE Level 3).	
<b>Credit and level definition(s) of any intermediate exit points:</b>	
<b>BSc Mathematics and Physics:</b> Credit Total 360 SCQF (=180 ECTS credits) including a minimum of 60 Level 9 SCQF credits (SHE Level 3).	
<b>Diploma of Higher Education in Mathematics and Physics:</b> Credit Total 240 SCQF (= 120 ECTS credits) including a minimum of 100 Level 8 SCQF credits (SHE Level 2).	
<b>Certificate of Higher Education in Mathematics and Physics:</b> Credit Total 120 SCQF (= 60 ECTS credits).	
<b>Reference points for academic standards (i.e. subject benchmark statements):</b>	
The course is designed to meet the credit requirements specified by the Scottish Credit and Qualifications Framework. In addition, attention is paid to both the Quality Assurance Agency's Mathematics, Statistics and Operational Research, and the Physics, Astronomy and Astrophysics benchmark statements. Please see the links (copy them and open in browser):	
<a href="https://www.qaa.ac.uk/docs/qaa/subject-benchmark-statements/subject-benchmark-statement-mathematics-statistics-and-operational-research.pdf?sfvrsn=e8f3c881_4">https://www.qaa.ac.uk/docs/qaa/subject-benchmark-statements/subject-benchmark-statement-mathematics-statistics-and-operational-research.pdf?sfvrsn=e8f3c881_4</a>	
<a href="https://www.qaa.ac.uk/docs/qaa/subject-benchmark-statements/subject-benchmark-statement-physics-astronomy-and-astrophysics.pdf?sfvrsn=eff3c881_4">https://www.qaa.ac.uk/docs/qaa/subject-benchmark-statements/subject-benchmark-statement-physics-astronomy-and-astrophysics.pdf?sfvrsn=eff3c881_4</a>	
<b>Professional, statutory or regulatory body accreditation:</b>	
The course is designed around the Institute of Physics' "Core of Physics" and so will satisfy the necessary requirements for accreditation by the Institute of Physics.	
<b>Aims of the programme:</b>	
To offer access to students of diverse educational backgrounds and provide them with a programme which meets the accepted benchmark standards and frameworks for higher education and to ensure their transition into university is successful.	
To provide high-quality education to Honours level in a wide range of subjects in modern mathematics and physics, within an environment committed to excellence in teaching and research.	
To enable students to develop detailed knowledge and critical understanding of both theoretical and applied elements of mathematics and physics, to prepare them for employment in leading roles in a wide variety of fields in industry, commerce or research.	
To develop critical and analytical problem-solving skills and general transferable skills which will prepare students for more general graduate employment.	
To equip students with the grounding in mathematics and physics and learning skills necessary for postgraduate study.	
To enable students to develop an appreciation of the links between research in mathematical physics and the teaching they are exposed to.	
<b>Learning outcomes of the programme (knowledge and understanding, skills and other attributes):</b>	
Graduates will be able to demonstrate subject knowledge which covers many of the main areas of mathematical physics.	
Graduates will be able to demonstrate an understanding of the principle mathematical theories, fundamental physical laws and theories together with a critical understanding of one or more specialised areas through applying a range of concepts and principles in loosely-defined everyday contexts, showing effective judgement in the selection and application of tools and techniques.	
Graduates will be able to demonstrate a good level of skill in identifying relevant physical principles and laws, in calculation and manipulation of the material within this body of knowledge. They will be able to develop and evaluate logical arguments, presenting them and their conclusions clearly and accurately.	
Graduates will be able to demonstrate a range of problem solving skills e.g. abstracting the essentials of	



problems, formulating them mathematically and obtaining solutions by appropriate methods. Graduates will be able to undertake a critical analysis of data and draw conclusions from the data producing clear graphs and reports.

Graduates will be able to demonstrate a range of appropriate general skills including IT competency.

**Normal duration of the programme:**

Full-time study: The course is designed to last for four years. This period may be reduced if a candidate presents with suitable accredited prior learning. Part-time study: A student may take two years to cover the material normally taken over one year.

**Structure of the programme (including mode of study):**

A four-year programme during which full-time students take a minimum of 120 credits per year. Each year contains compulsory modules and some years contain either optional modules which relate to different areas of mathematics and physics and/or elective modules from other subject areas in the university.

Regulations for the degree are published at:

<https://www.strath.ac.uk/sees/educationenhancement/qualityassurance/universityregulations/>

**Methods of assessment and learning and teaching approaches:**

**Assessment.**

The course incorporates a range of assessment types. Continuous assessment during some modules and summative assessment at the conclusion of modules both contribute to the overall assessment and are used to formally measure achievement in specific learning outcomes. Understanding, knowledge and subject-specific skills are assessed by coursework assignments, reports, presentations and written examinations. Formative assessment is used to provide feedback and inform student learning.

**Learning and teaching.**

The following teaching methods are used: lectures (using a variety of media including electronic presentations and computer demonstrations), tutorials, problems modules, computer laboratories, coursework, projects. Teaching is student-focussed, with students encouraged to take responsibility for their own learning and development. Students additionally learn through structured group work in problem solving and collaborative student presentations. Resource-based and problem-based learning are used to facilitate the motivational and assimilative phases of the learning process. Modules are supported by web-based materials.

**Entry requirements including opportunities for credit transfer into the Programme (i.e. from HNC, HND):**

**Highers:** AABB or ABBC including Mathematics at A and Physics at B. Applicants with contextual flags will be made offers of ABBC or ABCC including Mathematics at A and Physics at B

**A-levels:** Second-year entry ABB including Mathematics at A and Physics at B. First-year entry BBB including Mathematics and Physics both at B.

**AS/ASUB-levels:** As Highers.

**ACCESS/HNC/HND/CertHE/Irish Leaving Certificate/International Baccalaureate** will be given individual consideration for entry at the appropriate level.

**Pointers to further study-progression routes and any major opportunities for credit transfer out of the programme:**

Students who gain a second class (upper division) qualification or above are eligible for admission to a PhD or Masters programme.

Transfer to the BSc Mathematics and BSc Physics degrees is normally possible at any time.

**Further information:**

Details of class specific learning outcomes can be found at:

<https://ben.mis.strath.ac.uk/classcatalogue/>

**Date of approval by the Faculty Board of Study:**

## Programme Specification

**Programme title and name of final award:** BSc Physics (Hons)

**UCAS Code:** F300

**Awarding institution:** University of Strathclyde

**Teaching institution(s):** University of Strathclyde

**Credit and level definition of final award:**

**BSc Physics (Hons):** Credit Total 480 SCQF (= 240 ECTS credits) Including a minimum of 100 Level 10 SCQF credits (SHE Level 4) and a minimum of 100 Level 9 SCQF credits (SHE Level 3).

**Credit and level definition(s) of any intermediate exit points**

**BSc Physics:** Credit Total 360 SCQF (= 180 ECTS credits) Including a minimum of 60 Level 9 SCQF credits (SHE Level 3).

**Diploma of Higher Education in Physics:** Credit Total 240 SCQF (= 120 ECTS credits) Including a minimum of 100 Level 8 SCQF credits (SHE Level 2).

**Certificate of Higher Education in Physics:** Credit Total 120 SCQF (= 60 ECTS credits).

**Reference points for academic standards (i.e. subject benchmark statements):**

The course is defined to meet the credit requirements specified by the Scottish Credit and Qualifications Framework. In addition attention is paid to the Quality Assurance Agency's Physics benchmark statements. Please see the link

[https://www.qaa.ac.uk/docs/qaa/subject-benchmark-statements/subject-benchmark-statement-physics-astronomy-and-astrophysics.pdf?sfvrsn=eff3c881\\_4](https://www.qaa.ac.uk/docs/qaa/subject-benchmark-statements/subject-benchmark-statement-physics-astronomy-and-astrophysics.pdf?sfvrsn=eff3c881_4)

**Professional, statutory or regulatory body accreditation:**

The course is designed around the Institute of Physics' "Core of Physics" and so will satisfy the necessary requirements for accreditation by the Institute of Physics.

**Aims of the programme:**

To offer access to students of diverse educational backgrounds and provide them with a programme with outcomes which meet the accepted benchmark standards and frameworks for higher education.

To offer this education in a manner that produces a smooth transition between school and university.

To provide a high quality education in physics within an environment that is committed to excellence both in teaching and research and highlights the links between research and teaching.

To provide students with the skills necessary to work in a wide variety of careers or follow specialist interests.

To produce graduates, who have a broad based knowledge and understanding of useful physics and the ability to apply their learning as effective independent lifelong learners.

**Learning outcomes of the programme (knowledge and understanding, skills and other attributes):**

At the end of this programme students will be able –

To demonstrate an understanding of basic physical concepts and apply these concepts, where appropriate, to the solution of everyday problems.

To apply the necessary mathematics to address physical problems.

To undertake a critical analysis of data and relate this data to relevant theories and models.

To plan, perform and report the outcomes of an investigation be it experimental, computational or theoretical in nature.

Students will also be aware of the latest developments in areas of physics that reflect the Department's research interests.

This programme will enable a student to become a successful independent learner and enhance

the following key skills: problem solving skills, investigative skills, communication skills and IT skills.

**Normal duration of the programme:**

Full time study: The course is designed to last for 4 years. In exceptional cases this period may be reduced if a candidate presents with suitable accredited prior learning.

**Structure of the programme (including mode of study):**

A four-year programme during which full time students take a minimum of 120 credits per year. Each year contains compulsory and optional / elective modules which relate to different areas of physics. Detailed breakdown of the material studied each year can be found in the regulations for the degree that are published at:

<https://www.strath.ac.uk/sees/educationenhancement/qualityassurance/universityregulations/>

**Methods of assessment and learning and teaching approaches:**

**Methods of assessment:** Both formative and summative assessment techniques are used throughout the course. Assessment practice includes the following – examinations (closed and open book, oral, online), continuous assessment, written report, moderated peer assessment in tutorials and workshops, talks and poster sessions.

**Teaching methods:** Standard lectures using modern delivery tools such as Powerpoint etc. Problem and peer based learning in tutorials. Interactive learning using both personal response systems and web-based teaching resources. Group based learning

**Entry requirements including opportunities for credit transfer into the Programme (i.e. from HNC, HND):**

Highers: AABB or ABBBB including Mathematics and Physics at B. Applicants with contextual flags will be made offers of ABBB or ABBBC including Mathematics and Physics at B

A-Levels: 1<sup>st</sup> year entry BBB including Mathematics and Physics and a pass in the practical component.

HNC/HND/CertHE/Irish Leaving Certificate/International Baccalaureate will be given individual consideration for entry at the appropriate level.

**Pointers to further study-progression routes and any major opportunities for credit transfer out of the programme:**

Students qualified with a Lower Second class degree are eligible for admission to taught Masters or MRes programmes. Students with Upper Second class of First class are eligible for admission into PhD programmes. Transfer up to Integrated Masters at any stage of the course is possible subject to students performing at a suitable level. Transfer to other course within the University is usually possible up to the end of first year.

The degree is designed to match into the Bologna process.

**Further information:**

Details of class specific learning outcomes can be found at:

<https://ben.mis.strath.ac.uk/classcatalogue/>

**Date of approval by the Faculty Board of Study:**

## Programme Specification



**Programme title and name of final award:** BSc Physics With Teaching (Hons)

**UCAS Code:** F3XC

**Awarding institution:** University of Strathclyde

**Teaching institution(s):** University of Strathclyde

**Credit and level definition of final award:**

**BSc Physics with Teaching (Hons):** Credit Total 480 SCQF (= 240 ECTS credits) Including a minimum of 100 Level 10 SCQF credits (SHE Level 4) and a minimum of 100 Level 9 SCQF credits (SHE Level 3).

**Credit and level definition(s) of any intermediate exit points**

**BSc Physics:** Credit Total 360 SCQF (= 180 ECTS credits) Including a minimum of 60 Level 9 SCQF credits (SHE Level 3).

**Diploma of Higher Education in Physics:** Credit Total 240 SCQF (= 120 ECTS credits) Including a minimum of 100 Level 8 SCQF credits (SHE Level 2).

**Certificate of Higher Education in Physics:** Credit Total 120 SCQF (= 60 ECTS credits).

**Reference points for academic standards (i.e. subject benchmark statements):**

The course is defined to meet the credit requirements specified by the Scottish Credit and Qualifications Framework. In addition, attention is paid to the Quality Assurance Agency's Physics benchmark statements. Please see the link

[https://www.qaa.ac.uk/docs/qaa/subject-benchmark-statements/subject-benchmark-statement-physics-astronomy-and-astrophysics.pdf?sfvrsn=eff3c881\\_4](https://www.qaa.ac.uk/docs/qaa/subject-benchmark-statements/subject-benchmark-statement-physics-astronomy-and-astrophysics.pdf?sfvrsn=eff3c881_4)

**Professional, statutory or regulatory body accreditation:**

The course is designed around the Institute of Physics' "Core of Physics" and so will satisfy the necessary requirements for accreditation by the Institute of Physics. The course also satisfies the requirements defined by Graduate Teaching Council Scotland.

**Aims of the programme:**

To offer access to students of diverse educational background and provide them with a programme with outcomes which meet the accepted benchmark standards and frameworks for higher education.

To offer this education in manner that produces a smooth transition between school and university.

To provide a high quality education in physics and teacher training within an environment that is committed to excellence both in teaching and research and highlights the links between research and teaching.

To provide students with the skills necessary to become a teacher of physics in a high school.

**Learning outcomes of the programme (knowledge and understanding, skills and other attributes):**

At the end of this programme students will be able –

To demonstrate an understanding of basic physical concepts and demonstrate these concepts in a classroom or other environment.

To apply the necessary mathematics to address and support physical examples.

To plan, perform and deliver lessons in an effective and logical fashion.

Students will also be aware of the latest developments in areas of physics that reflect the Department's research interests.

This programme will enable a student to become a successful independent learner and enhance

the following key skills: problem solving skills, investigative skills, communication skills and IT skills.

**Normal duration of the programme:**

Full time study: The course is designed to last for 4 years. In exceptional cases this period may be reduced if a candidate presents with suitable accredited prior learning.

**Structure of the programme (including mode of study):**

A four-year programme during which full time students take a minimum of 120 credits per year. The course is delivered in a 3+1 mode with first three years taught by the Physics Department and the final year delivered by the Graduate Teacher Training programme offered by the School of Education. Each year contains compulsory and optional / elective modules which relate to different areas of physics and Education theory / practice. Detailed breakdown of the material studied each year can be found in the regulations for the degree that are published at:

<https://www.strath.ac.uk/sees/educationenhancement/qualityassurance/universityregulations/>

**Methods of assessment:** Both formative and summative assessment techniques are used throughout the course. Assessment practice includes the following – examinations (closed and open book, oral, online), continuous assessment, written report, moderated peer assessment in tutorials and workshops, talks and poster sessions.

**Teaching methods:** Standard lectures using modern delivery tools such as Powerpoint etc. Problem and peer-based learning in tutorials. Interactive learning using both personal response systems and web-based teaching resources. Group based learning. In school training during year 4 of the course.

**Entry requirements including opportunities for credit transfer into the Programme (i.e. from HNC, HND):**

Highers: AABB or AB BBB including Mathematics and Physics at B. Applicants with contextual flags will be made offers of AB BB or AB BC including Mathematics at B and Physics at B. A candidate must also possess at least a Grade C in Higher English or equivalent

A-Levels: 1<sup>st</sup> year entry BB B including Mathematics and Physics and a pass in the practical component.

HNC/HND/CertHE/Irish Leaving Certificate/International Baccalaureate will be given individual consideration for entry at the appropriate level.

**Pointers to further study-progression routes and any major opportunities for credit transfer out of the programme:**

Transfer to either the BSc Physics (Hons) or Integrated Masters at any stage of the course is possible, subject to students performing at a suitable level, up until the end of third year.

Transfer to other course within the University is usually possible up to the end of first year.

**Further information:**

Details of class specific learning outcomes can be found at:

<https://ben.mis.strath.ac.uk/classcatalogue/>

**Date of approval by the Faculty Board of Study:**

# Programme Specification



**Programme title and name of final award: MPhys**

**UCAS Code: F303**

**Awarding institution:** University of Strathclyde

**Teaching institution(s):** University of Strathclyde

**Credit and level definition of final award:**

**MPhys:** Credit Total 600 SCQF (= 300 ECTS credits) Including a minimum of 120 Level 11 SCQF credits (SHE Level 5) and a minimum of 100 Level 10 SCQF credits (SHE Level 4).

**MPhys with Specialisation in ...:** Credit Total 600 SCQF (= 300 ECTS credits) Including a minimum of 120 Level 11 SCQF credits (SHE Level 5) and a minimum of 100 Level 10 SCQF credits (SHE Level 4).

**Credit and level definition(s) of any intermediate exit points**

**BSc Physics (Hons):** Credit Total 480 SCQF (= 240 ECTS credits) Including a minimum of 100 Level 10 SCQF credits (SHE Level 4) and a minimum of 100 Level 9 SCQF credits (SHE Level 3).

**BSc Physics:** Credit Total 360 SCQF (= 180 ECTS credits) Including a minimum of 60 Level 9 SCQF credits (SHE Level 3).

**Diploma of Higher Education in Physics:** Credit Total 240 SCQF (= 120 ECTS credits) Including a minimum of 100 Level 8 SCQF credits (SHE Level 2).

**Certificate of Higher Education in Physics:** Credit Total 120 SCQF (= 60 ECTS credits).

**Reference points for academic standards (i.e. subject benchmark statements):**

The course is defined to meet the credit requirements specified by the Scottish Credit and Qualifications Framework. In addition attention is paid to the Quality Assurance Agency's Physics benchmark statements. Please see the link:

[https://www.qaa.ac.uk/docs/qaa/subject-benchmark-statements/subject-benchmark-statement-physics-astronomy-and-astrophysics.pdf?sfvrsn=eff3c881\\_4](https://www.qaa.ac.uk/docs/qaa/subject-benchmark-statements/subject-benchmark-statement-physics-astronomy-and-astrophysics.pdf?sfvrsn=eff3c881_4)

**Professional, statutory or regulatory body accreditation:**

The course is designed around the Institute of Physics' "Core of Physics" and so will satisfy the necessary requirements for accreditation by the Institute of Physics.

**Aims of the programme:**

To offer access to students of diverse educational background and provide them with a programme with outcomes which meet the accepted benchmark standards and frameworks for higher education.

To offer this education in manner that produces a smooth transition between school and university.

To provide a high quality education in physics within an environment that is committed to excellence both in teaching and research and highlights the links between research and teaching.

To provide students with the skills necessary to work in a wide variety of careers or follow specialist interests.

To produce physicists who are able to follow a professional physicist's career pathway by following post-graduate studies

To produce graduates, who have a broad based knowledge and understanding of useful physics and the ability to apply their learning as effective independent lifelong learners.

**Learning outcomes of the programme (knowledge and understanding, skills and other attributes):**

At the end of this programme students will be able –

To demonstrate an understanding of basic physical concepts and apply these concepts, where

appropriate, to the solution of everyday problems.

To apply the necessary mathematics to address physical problems.

To undertake a critical analysis of data and relate this data to relevant theories and models.

To plan, perform and report the outcomes of an investigation be it experimental, computational or theoretical in nature.

To produce students capable of making informed judgements about key ethical questions in physics.

Students will also be aware of the latest developments in areas of physics that reflect the Department's research interests.

This programme will enable a student to become a successful independent learner and enhance the following key skills: problem solving skills, investigative skills, communication skills and IT skills.

# Programme Specification



**Programme title and name of final award:** MPhys in Physics with Advanced Research

**UCAS Code:** F3F3

**Awarding institution:** University of Strathclyde

**Teaching institution(s):** University of Strathclyde

**Credit and level definition of final award:**

**MPhys:** Credit Total 640 SCQF (= 320 ECTS credits) Including a minimum of 120 Level 11 SCQF credits (SHE Level 5) and a minimum of 100 Level 10 SCQF credits (SHE Level 4).

**Credit and level definition(s) of any intermediate exit points**

**BSc Physics (Hons):** Credit Total 480 SCQF (= 240 ECTS credits) Including a minimum of 100 Level 10 SCQF credits (SHE Level 4) and a minimum of 100 Level 9 SCQF credits (SHE Level 3).

**BSc Physics:** Credit Total 360 SCQF (= 180 ECTS credits) Including a minimum of 60 Level 9 SCQF credits (SHE Level 3).

**Diploma of Higher Education in Physics:** Credit Total 240 SCQF (= 120 ECTS credits) Including a minimum of 100 Level 8 SCQF credits (SHE Level 2).

**Certificate of Higher Education in Physics:** Credit Total 120 SCQF (= 60 ECTS credits).

**Reference points for academic standards (i.e. subject benchmark statements):**

The course is defined to meet the credit requirements specified by the Scottish Credit and Qualifications Framework. In addition attention is paid to the Quality Assurance Agency's Physics benchmark statements. Please see the link

[https://www.qaa.ac.uk/docs/qaa/subject-benchmark-statements/subject-benchmark-statement-physics-astronomy-and-astrophysics.pdf?sfvrsn=eff3c881\\_4](https://www.qaa.ac.uk/docs/qaa/subject-benchmark-statements/subject-benchmark-statement-physics-astronomy-and-astrophysics.pdf?sfvrsn=eff3c881_4)

**Professional, statutory or regulatory body accreditation:**

The course is designed around the Institute of Physics' "Core of Physics" and so will satisfy the necessary requirements for accreditation by the Institute of Physics.

**Aims of the programme:**

To offer access to students of diverse educational background and provide them with a programme with outcomes which meet the accepted benchmark standards and frameworks for higher education.

To offer this education in manner that produces a smooth transition between school and university.

To provide a high-quality education in physics within an environment that is committed to excellence both in teaching and research and highlights the links between research and teaching.

To produce physicists who are able to follow a professional physicist's career pathway by following post-graduate studies.

To provide students with the skills necessary to work in a wide variety of careers or follow specialist interests.

To produce graduates, who have a broad-based knowledge and understanding of useful physics and the ability to apply their learning as effective independent lifelong learners.

**Learning outcomes of the programme (knowledge and understanding, skills and other attributes):**

At the end of this programme students will be able –

To demonstrate an understanding of basic physical concepts and apply these concepts, where appropriate, to the solution of everyday problems.

To apply the necessary mathematics to address physical problems.

To undertake a critical analysis of data and relate this data to relevant theories and models.



To plan, perform and report the outcomes of an investigation be it experimental, computational or theoretical in nature.

To produce students capable of making informed judgements about key ethical questions in physics.

Students will also be aware of the latest developments in areas of physics that reflect the Department's research interests.

This programme will enable a student to become a successful independent learner and enhance the following key skills: problem solving skills, investigative skills, communication skills and IT skills.

**Student curriculum:** <https://www.strath.ac.uk/science/physics/currentstudents/curriculum/>

## APPENDIX 3 – Faculty of Science Degree Award Algorithm

### Principles

1. Given that the SCQF (which underpins the University's General Regulations) is based on "Levels of Study" rather than "Years of Study", the algorithm should reflect this by being composed from credit weighted means of marks over "Levels of Study" rather than "Years of Study".
2. It is the mark at the first attempt at any class that is used in the calculation.
3. For all degrees (Honours and Integrated Masters) modules at the two highest levels of study will be included; i.e. normally Levels 3 and 4 for Honours and Levels 4 and 5 for Integrated Masters. Exceptionally, where a curriculum for the award of an honours degree includes level 5 modules these shall be included in the algorithm as if they were Level 4 modules where this is to the benefit of the student.
4. All modules at each appropriate level in the students required curriculum shall be included in the calculation unless a class is assessed only on a Pass/Fail basis in which case it is omitted from the algorithm.
5. The weightings of the marks in the Composite Mark Algorithm shall reflect the credit value of the class and also the level of the class to reflect the general consensus that the marks at the higher level of study should have significantly more bearing on the final outcome.
6. Any exception from the Faculty Final Assessment Composite Mark Algorithm must be approved by the Faculty Board of Study.

### The Composite Mark Algorithm

The Faculty Composite mark is calculated as

$$C = \frac{\sum w_i c_i m_i}{\sum w_i c_i}$$

where  $c_i$  is the credit value of the class,  $m_i$  is the percentage mark gained in the class.

**For Honours Degrees** the sum is over all level 3 and level 4 modules taken in years 3 and 4, and  $w_i = 1$  for level 3 modules and 3 for level 4 modules. Where a curriculum for the award of an honours degree includes level 5 modules these shall be included in the algorithm as if they were Level 4 modules where this is to the benefit of the student.

**For Integrated Masters** the sum is over all level 4 and level 5 modules taken in years 4 and 5, and  $w_i = 1$  for level 4 modules and 3 for level 5 modules.

Alternatively, denoting the credit weighted average (CWA) mark for level 3, 4 and 5 modules by  $L3$ ,  $L4$  and  $L5$  respectively, this can be calculated **for Honours** by

$$C = \frac{mL3 + 3nL4}{m + 3n}$$

where  $m$  and  $n$  are the numbers of credits at Level 3 and Level 4 respectively; and **for** Integrated Masters by

$$C = \frac{mL4 + 3nL5}{m + 3n}$$

where  $m$  and  $n$  are the numbers of credits at Level 4 and Level 5 respectively.

Where a curriculum contains the **same number** of credits (normally 120) at both levels included in the algorithm, the calculation is equivalent to

For Honours:  $0.25 * L3 + 0.75 * L4$   
For Integrated Masters:  $0.25 * L4 + 0.75 * L5$ .

## **APPENDIX 4 – Prize Information**

### **Prizes and Rubric for their Award**

#### **Astronomical Society of Glasgow Prize**

Offered annually by the Astronomical Society of Glasgow for award to the most distinguished student in the final examinations for a BSc Honours or MSci degree in Mathematics or Physics.

#### **Professor James Blyth Memorial Prize**

Founded in 1908 by students and friends as a tribute to the memory of Professor James Blyth MA LLD FRSE Professor of Natural Philosophy in the Glasgow and West of Scotland Technical College from 1880 to 1906. Awarded to a meritorious student in the first-year class in Physics.

#### **Kelvin Prizes**

Founded in 1962 by Mrs Hilda M Beilby, daughter-in-law of a former Head of the Governors of the Royal Technical College, Sir George T. Beilby LLD DSc FRS, to commemorate the name of her grand-uncle, Lord Kelvin. One prize awarded to a meritorious student in the final year of an undergraduate course in the Department of Mathematics and the other to a meritorious student in the final year of an undergraduate course in the Department of Physics.

#### **Malcolm Kerr Prizes**

Provided by an endowment arising under the terms of the Deed of Settlement of the late Malcolm Kerr, stationer in Glasgow. Four prizes awarded to meritorious students in the first year class in Physics, and two to meritorious students in the first year class in Biology.

#### **Frank Leslie Prize**

Founded in 2000 by the Department of Mathematics, in association with the Department of Physics, in commemoration of the late Professor Frank M Leslie DSc FRSE FRS, Professor in the Department of Mathematics from 1979 to 2000. Awarded to a meritorious student in the final year of the joint honours BSc course in Mathematics and Physics.

#### **A. S. McLaren Prize in Physics**

Founded in 1978 by the former School of Mathematics, Physics and Computer Science as a memorial to Mr A S McLaren, Lecturer and Senior Lecturer in the former Department of Natural Philosophy from 1946 to 1977. Awarded annually on the recommendation of the Head of the Department of Physics to the student who achieves the best performance in the second year Physics Laboratory.

#### **Professor James Muir Prize**

Founded in 1939 under an endowment by students and friends to commemorate Professor James Muir MA DSc ARCST FlntSP Professor of Natural Philosophy in the Royal Technical College from 1906 to 1938. Awarded to a meritorious student in the final year of the course for a BSc or MSci degree in Physics.

#### **Fred Stern Memorial Prize**

Founded in 1978 by students and friends as a tribute to the memory of Dr Fred Stern, Lecturer in the Royal College of Science and Technology from 1957 to 1964, and in the University of Strathclyde from 1964 to his death in 1977. Awarded, on the nomination of the Head of the Department of Physics, to students in that Department who have exceptionally distinguished themselves, either by attainment or improvement. The prize money shall be used for a purpose proposed by the recipient, and agreed by the Head of Department, but this shall always include a suitable book. The amount of the prize shall be determined by the Head of Department, by reference to the accumulated value of the endowment at the time.

#### **Richard Thornley Memorial Prize**

Founded in 1987 to the memory of Dr F R Thornley, lecturer in the University of Strathclyde from 1976 to his death in 1987. Awarded, on the nomination of the Head of the Department of Physics, to a third or fourth year undergraduate in the Department of Physics for written work dealing with a specific problem in Physics or Applied Physics, whose solution has social, moral philosophical, cultural, or technological implications. The work will be judged on both the discussion of these implications and on the depth of scientific understanding.

#### **Outstanding Contribution to Enhancing Student Experience**

Founded in 2020, this Prize was introduced in recognition that some students go to extraordinary lengths to support their peers and enhance their learning experience throughout the year. Nominations for the Prize are accepted from both students and staff.

## APPENDIX 5 – John Anderson Campus Building Codes

Below is a list of buildings with their timetabling room prefix. Click the building name to view [a map](#) showing its location on campus where you can also view building's *floorplans*.

Prefix	Building Name	Notes
AB	<a href="#">Robertson Wing</a>	SIPBS
AL	<a href="#">181 St James Road (Estates)</a>	
AQ	<a href="#">Lord Todd Building</a>	
AT	<a href="#">Alexander Turnbull Building</a>	
BH	<a href="#">Barony Hall</a>	
CL	<a href="#">Collins Building</a>	
CU	<a href="#">Curran Building (Library)</a>	
CW	<a href="#">Cathedral Street Wing (Business School)</a>	
DW	<a href="#">Sir William Duncan Wing</a>	
GH	<a href="#">Graham Hills Building</a>	
HD	<a href="#">Henry Dyer Building</a>	
HL	<a href="#">Kelvin Hydrodynamics Laboratory</a>	
HW	<a href="#">Hamnett Wing</a>	SIPBS
JA	<a href="#">John Anderson Building</a>	
JW	<a href="#">James Weir Building</a>	
LH	<a href="#">Lord Hope Building</a>	
LT	<a href="#">Livingstone Tower</a>	
MC	<a href="#">McCance Building</a>	
RC	<a href="#">Royal College Building</a>	Assembly hall is on level 4
SH	<a href="#">Strathclyde Sport</a>	
SP	<a href="#">St Pauls Chaplaincy Centre</a>	
SW	<a href="#">Stenhouse Wing (Business School)</a>	
TC	<a href="#">Technology Innovation Centre</a>	
TG	<a href="#">Thomas Graham Building</a>	
TL	<a href="#">Teaching and Learning Building</a>	

UC	<a href="#">University Centre</a>	
WC	<a href="#">Wolfson Centre</a>	

## APPENDIX 6 – Final Year Project Key Dates

To reach the PH450, PH550 & PH570 coordinator team, email:  
[Physics-UG-Projects@strath.ac.uk](mailto:Physics-UG-Projects@strath.ac.uk)

### PH450

Taken in 4th year by MPhys and BSc Physics

Optional for BSc Mathematics and Physics students

Passing this module is a required part of the MPhys and BSc Physics degree.

Up-to-date information, including the schedule for project allocation, is available on the [PH450 Myplace pages](#). As the situation remains fluid, students should periodically check for updates. However, it is still worthwhile for students, if they so wish, to contact prospective Supervisors to discuss potential projects in advance of the standard allocation process.

### Approximate Schedule for Project Allocation

**Beginning September 2023** Release of project list version 1.0. Further project information to follow.

**Semester 1 Week 0:** Project Information Sessions, Safety Induction (mandatory), Project Selection via Online Form

**Semester 1 Week 1:** Project Allocation via method of Abraham, D.J. et al (2007) Journal of Discrete Algorithms, Vol. 5, 73-90.

### Project Timetables

#### Project Information for Continuing 5<sup>th</sup> Year Students

### PH550

Passing this module is a required part of the MPhys Physics degree

All up-to-date information, including the schedule for project allocation, is available on the [PH550 Myplace pages](#). As the situation remains fluid, students should periodically check for updates. However, it is still worthwhile for students, if they so wish, to contact prospective Supervisors to discuss projects in advance of the standard allocation process.

### PH570

Passing this module is a required part of the MPhys Physics with Advanced Research degree

All up-to-date information, including the schedule for project allocation, is available on the [PH570 Myplace pages](#). As the situation remains fluid, students should periodically check for updates. However, it is still worthwhile for students, if they so wish, to contact prospective Supervisors to discuss projects in advance of the standard allocation process.