

# UNIVERSITY OF STRATHCLYDE

## DEPARTMENT OF PHYSICS

---

### HANDBOOK FOR MSc STUDENTS

*Advanced Physics*

*Applied Physics*

*Nanoscience*

*Optical Technologies*

*Photonics*

*Quantum Technologies*

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

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

## Contents

General Information .....	1
Courses .....	1
Advanced Physics.....	1
Applied Physics .....	1
Nanoscience .....	1
Optical Technologies .....	1
The Academic Year 2023 - 2024.....	2
Advisers of Study.....	4
The Programme Advisers for MSc Programmes .....	4
Faculty of Science.....	4
The Physics Department.....	5
Advice for Students Requiring Disability and Wellbeing Support.....	5
Absence.....	6
Moving Home.....	7
Difficulties .....	7
Safety Regulations.....	9
Your Degree Programme .....	9
Programme Requirements .....	9
Timetables .....	9
Personal Development Advisers (PDA).....	9
Teaching.....	10
Student-Staff Committee.....	10
Report Writing.....	10
Commercialisation of Research, Intellectual Property and Student Projects.....	10
Plagiarism .....	11
Feedback.....	11
Information Technology, Personal Transferable Skills, PEGASUS and MyPlace. ....	11
Cyber Security .....	11
Support.....	12
Academic.....	12
Attendance (or participation for online sessions).....	12
Assessment and Progress .....	12
Prizes.....	13
Examination Attempts .....	13
Degree Award Credit Requirements and Classification .....	14
Examination Board Decisions .....	14
Minimum Credit Requirements For MSc Progression.....	15
Compensation Scheme.....	15

Postgraduate Taught Experience Survey (PTES) .....	16
Graduation.....	16
Careers Guidance.....	18
Have You Thought About Your Future? .....	18
APPENDIX 1 – Degree Regulations.....	22
APPENDIX 2 – Programme Specifications.....	25
APPENDIX 3 – John Anderson Campus Building Codes .....	28
APPENDIX 4 – Project Arrangements and Key Assessment Dates .....	29
APPENDIX 5 – Support .....	30

## GENERAL INFORMATION

### Courses

#### *Advanced Physics*

This taught MSc course gives you the opportunity to explore and master theoretical, computational and experimental physics skills with wide applications. Our four divisions – Nanoscience, Optics, Plasmas and the Institute of Photonics – all contribute research-based teaching expertise to the course.

#### *Applied Physics*

This taught Masters course is based on the strong research interest in Applied Physics in the Department of Physics. The department has an impressive track record of transferring research into commercial and technological applications and this knowledge will underpin teaching on this course. The course will give participants the opportunity to explore and master a greater breadth of Applied Physics skills and enable them to put this knowledge to use in the context of ongoing research or technological applications.

#### *Nanoscience*

This taught MSc course offers a comprehensive overview of the state of the art in Nanoscience research and provides graduates with the opportunity to develop the skills necessary for this emerging interdisciplinary area.

Beginning with an introduction to the basic physics and chemistry of nanostructured materials, the course goes on to explore the nanoworld via the cutting edge research expertise that has been developed over nearly two decades in the Physics and Chemistry Departments at the University of Strathclyde.

#### *Optical Technologies/Photonics*

The course is a taught Masters in the versatile field of optical technologies which underpin many aspects of modern society and are expected to be a key enabling technology of the 21st century. The course is based on the strong record of optical technologies in all research divisions of the Department of Physics and the [Department of Electronic and Electrical Engineering](#). Students can choose taught elements relevant to their career interests from a wide range of topics in photonics, nanosciences, optics at the physics-life sciences interface, information technology and quantum optics. The knowledge gained in the taught components is then put to use in a cutting edge research project. The course will give the opportunity of exploring and mastering a larger breadth of optical technologies and enable the student to put devices in the context of an optical system and/or application.

#### *Quantum Technologies*

This programme provides you with the skills to participate in the second quantum revolution with control of quantum features enabling novel functionalities for industrial products and advanced research. The course is based on the strong research record on quantum physics and quantum technologies in the Department of Physics. Students will develop theoretical and practical skills in fundamentals of quantum physics and their applications to quantum technologies and explore these in more detail in a cutting-edge research project.

## The Academic Year 2023 – 2024

Welcome Week & Development Week: **Monday 11 September – Friday 15 September 2023**

Important events, which you must attend during this week, are:

Faculty of Science PGT Induction: *To be confirmed*

First Day Meeting (welcome + induction) **Tuesday 12 September 10:00 – 11:00 in JA824**  
Welcome and essential information for your study and module choices

Getting to know Strathclyde & Career & Industry Fair: **Tuesday 12 September from 14:00 – 17:00**  
Engagement and support, meeting with other students, student societies, career services.

Advisor of Study Meetings **Thursday 14 and Friday 15 September**

Induction meeting II & Q&A Session **Thursday 14 September 12:00 - 14:00 in JA8.24**  
Information not covered on First Day and Q&A; departmental tour; followed by social lunch

Personal Development Adviser Meetings **Thursday 14 September 14:00**

In addition, you are welcome to participate in the PDA Quiz on Thursday 14 September at 14:30

You must do the online course on IT safety [Cyber Security \(Students\)](#) and you are strongly advised to make yourself familiar with the provisions of the [library](#). For students taking PH949 these activities are a part of this module. We expect from students getting PH949 recognized as prior learning to undertake these activities in self-learning.

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	22 December 2023 - 7 January 2024 (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 – 31 March 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 2024	
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	
Project PH952	20 May 2024 – 1 September 2024	Project assessment should be finished on 30 August but note that depending on staff availability or personal circumstances requiring extension, project assessment might take place later
University closed	12 July 2024 and 15 July 2024	
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: [Key dates 2023-24](#) regularly for any changes.***

**Refer to appendix 4 for important assessment scheduling and key dates for the summer project.**

## Advisers of Study

Each MSc student in the Department is assigned an Adviser of Study who is responsible for advising the students about their current curriculum. Students will meet with their Adviser of Study at the appropriate year group First Day Meeting. The MSc degrees are coordinated by Prof T. Ackemann who serves also as adviser for every programme.

*The Programme Adviser for all MSc Programmes is:*

Prof Thorsten Ackemann

Office: JA8.21

Email: [physics-adviser-pgt@strath.ac.uk](mailto:physics-adviser-pgt@strath.ac.uk)

Deputy Advisers are

Ms Gabrielle Weir

Office: JA8.05

Email: [physics-adviser-pgt@strath.ac.uk](mailto:physics-adviser-pgt@strath.ac.uk)

Dr Helen Vaughan

Office: JA8.08

Email: [physics-adviser-pgt@strath.ac.uk](mailto:physics-adviser-pgt@strath.ac.uk)

## 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 [Faculty Leadership Team](#) are:

**Associate Principal & Executive Dean:** [Professor Graham Duncan](#)

Vice Dean (Academic) [Professor Debra Willison](#)

Faculty Manager: [Robert Lawrie](#)

Deputy Faculty Manager: [Christine Dowds](#)



## 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 Department's [website](#)

Key staff are:

Head of Department:	<a href="#">Professor Stefan Kuhr</a>
Assistant Head of Department:	<a href="#">Professor Rob Martin</a>
Director of Teaching:	<a href="#">Professor John Jeffers</a>
Deputy Director of Teaching	<a href="#">Dr Alison Yao</a>
Deputy Director of Teaching - PGT	<a href="#">Professor Thorsten Ackemann</a>
Director of Student Support	<a href="#">Dr Ben Hourahine</a>
Postgraduate Research Tutor	<a href="#">Dr Brian Patton</a>
Director of Research:	<a href="#">Dr Michael Strain</a>

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 JA8.31 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 VLE MyPlace on a regular basis.**

**Note that the notices in the Strathclyde App include only the messages from the University VLE MyPlace and NOT any emails an academic might send you directly.**

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 will be withdrawn).

There is also a Student Common Room located in the [Graham Hills Building](#) GH5.65.

## 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 act as a first point of contact for disabled students.

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

To ensure the Department meets your needs as defined by the Disability & Wellbeing Service, Jacqui Gordon is the Departmental Disability Contact. Should you have any questions then please do not hesitate to contact the DDC.

<b>Departmental Disability Contact</b>	<b>Office</b>	<b>Telephone</b>	<b>Email</b>
Jacqui Gordon	JA830	0141 5483369	physics-ddc@strath.ac.uk

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 are encouraged to submit evidence relating to a disability as soon as possible, end of October at the latest.

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.**

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 & Personal Circumstances**

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.

If you have health or other personal circumstances affecting or having affected your studies, please let us know as soon as possible and do not wait until you have had the mark. For personal

circumstances affecting exams or other significant pieces of assessment appropriate evidence (e.g. medical certificate) is required.

Full details of these policies and what you should do in each circumstance can be found at:

[Policies & Procedures for students](#)  
[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. You can go and see your PDA or adviser of study in the first instance. Do not delay getting help as often the problems are much reduced if tackled early enough. If they cannot give 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 consistently 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 queries 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/>

## **Dignity and Respect**

The University of Strathclyde acknowledges that students and staff bring different cultures, lifestyles, experience, ideas and knowledge to the learning, research and working environment.

We are committed to providing an environment where students, staff, visitors and contractors are treated with dignity and respect. Unacceptable behaviour has no place at the University. Any form of discrimination, harassment, victimisation or bullying will not be tolerated.

To emphasise this commitment, we have developed policy on Dignity and Respect and a network of Dignity and Respect Advisers. Any person experiencing bullying or harassment can contact an adviser for confidential advice and support. In order to avoid any conflict of interest you are advised to contact an adviser external to your local area.

Please see [Dignity and Respect](#) for more information.

**Report & Support:** You may also report online any inappropriate behaviour (such as verbal or physical harassment, or other actions that make you feel unsafe, for example threatening posters, stickers or graffiti) so the University can provide you with appropriate support.

Students may also contact [University Counselling Service](#)

It is the responsibility of all students, staff, visitors and contractors to conduct and interact in a fair and respectful manner at all times.

We can all make a difference through leading by example, contributing ideas and suggestions.

## **Student Discipline Procedure**

Students are made aware of the University [Student Discipline Procedure](#):

## **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 page **23**. You are requested to attend a compulsory safety induction which is scheduled for the afternoon of 16th September 2022 and the laser safety sessions in October 2022.

## **YOUR DEGREE PROGRAMME**

### **Programme Requirements**

Each degree programme is made up of a number of modules. A full year's curriculum normally totals a minimum of 180 credits, of which 120 credits are taught and 60 credits are associated with the project. The classes you choose must be agreed with your Adviser of Study (see above) and then you will be able to complete your registration with the University. The details of the modules you will take or you will be able to choose are given in Appendix 2.

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

Each degree course is governed by a set of Regulations that specify the compulsory classes 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 [University Regulations](#)

Further information and policies are accessible via the [Student Policy](#) page.

### *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 an Adviser of Study, 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 email [pda@phys.strath.ac.uk](mailto:pda@phys.strath.ac.uk)

### *Teaching*

The teaching offered by the Department is primarily done by the use of 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.

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

Please visit the [MyPlace page](#) for more details.

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 voice 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 Adviser of Study. 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.

### *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 and essays in a number of courses, in particular the project report (PH952). 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, YOU ARE ACKNOWLEDGING THAT YOU ARE THE AUTHOR OF THE WORK.**

### *Commercialisation of Research, Intellectual Property and Student Projects*

If you are assigned to a project which is conducted within the University and that may lead to outputs which can be patented or which will create a commercial opportunity, you will be asked to sign a contract which assigns commercially exploitable intellectual property rights to the University. Further details can be found on MyPlace. Projects conducted within industry will have separate arrangements.

## Plagiarism

Plagiarism most commonly involves the passing off of another person's work as your own and is regarded as a form of academic dishonesty. Plagiarism more often than not 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 may be reported to the University Disciplinary committee.

### *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 – as simple grades, written solutions to tutorial problems, online feedback, guidance on how to improve your lab reports or project reports, discussions in lectures. There are many other forms of feedback – see [here](#) for more information.

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](#) and the University's [Assessment & Feedback Policy](#)

## 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.

We expect numeracy in IT and personal skills at PGT level, but these skills are continuously trained in all courses, in particular in PH949.

**See appendix 5 for further support.**

### *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.

All students are expected to complete the training (for students taking PH949 it is part of the course). It should take no longer than an hour to complete 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 known as PEGASUS that 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/>

## *SUPPORT*

Material for support is available on MyPlace "[Physics Personal Development](#)" and in Appendix 5 and will be discussed further during the induction session. Further useful guidance on academic writing is on the [Project MyPlace site](#).

The department organizes a session bringing all PGT students together as part of PH952 and PH949. The session takes place on Wednesday afternoons, 13.00-14.00. One main aim is that you get to know the department. The leaders or representatives of the research groups will present their groups, which is important to inform your project choice. Afterwards, we would like to hear from you the challenges you encountered and discuss possible strategies and possibly solutions found by other students already. This can range from learning to exchanging tips on everyday life like flats, shopping, bank account... We hope that this helps you to form social and learning networks within your cohort and keeps you informed on what is going on.

## *Departmental Research Colloquia*

For interested students, the departmental research colloquia provide excellent means to get an idea of modern research. External speakers are talking on cutting-edge research on a tutorial level. The schedule is available on [John Anderson Research Colloquia](#)

## **ACADEMIC**

### **Attendance (or participation for online sessions)**

**ATTENDANCE AT TUTORIALS AND LABORATORY SESSIONS IS MANDATORY AND THE DEPARTMENT WILL BE MONITORING ATTENDANCE AT PHYSICS LECTURES. POOR ATTENDANCE AT THE TUTORIALS FOR A GIVEN CLASS WILL RESULT IN YOU BEING MARKED AS "NOT QUALIFIED (NQ)" TO SIT THE EXAMINATION FOR THAT CLASS. 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 Integrity 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. The MSc classes are defined to be at Scottish Higher Education Level 5. Each MSc class has a defined credit weighting and a single credit corresponds to ten hours of student learning. This learning includes all activities associated with the class from attending lectures, through to sitting the examination as well as private study. To be awarded the



credit for a class you must achieve the pass mark for the class, which, in the case of Level 5 classes, is 50%. 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 graphic calculators with memory bank facilities, and in particular, no calculator with alphabetic input. For assessment of the project refer to Appendix 4.

## Prizes

The Department of Physics MSc Excellence Prize will be awarded to a meritorious student of at least distinction level on any MSc course offered by the Department. The prize, worth £50, will be awarded to the student who achieves the highest credit weighted average over the whole course portfolio.

The Department of Physics MSc Prize will be awarded to a meritorious student of at least distinction level on any MSc course offered by the Department. The prize, worth £50, will be awarded to the student who achieves the highest mark for the MSc Project.

## Examination Attempts

All students will be entitled to TWO attempts only to gain the credits for any class. The First Attempt is taken in either the January or the May Diet of Examinations and the Second Attempt taken in the August re-sit Diet of Examinations. 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.**

## Degree Award Credit Requirements and Classification

Degree Type	Credit Requirements
PG Certificate	To be awarded a PG Certificate you must have accumulated at least 60 credits of which at least 50 credits must be Level 5.
PG Diploma	To be awarded a PG Diploma you must have accumulated at least 120 credits of which at least 100 credits must be Level 5.
MSc degree	To be awarded an MSc degree you must have accumulated at least 180 credits of which at least 150 credits must be Level 5.

The MSc degrees are classified in three bands and the classification is determined by your credit-weighted average mark.

MSc Degree Classification	Credit Weighted Average Mark
Distinction	≥ 70 %
Merit	≥ 60 %
Pass	≥ 50 %

For full time students the credit-weighted average is based only on the classes 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.

## Examination Board Decisions

Whichever method of assessment is used an Examination Board will consider the results of your examinations. There will be a First Board that meets in June to determine whether you are eligible to progress to the Project phase of the MSc and a Second Board that will meet in September to determine whether you qualify for the award of an MSc and the level of that award. There are certain decisions that the First Board and Second Board can make:

### PROCEED

This means that you have passed in all the taught classes for which you were registered and you may progress to the project phase of the MSc. **This decision is based on the first attempt only. You need to pass 100 of 120 credits at first attempt to be allowed to proceed to project and a credit-weighted average based on 1<sup>st</sup> attempt marks of 50 %.**

### TRANSFER

The student will be transferred to another degree, diploma or certificate course in the same group of courses. This can be qualified by a decision of, for example, **TRANSFER and RESIT** etc.

### RESIT (normally 1<sup>st</sup> board only)

The student should take re-sit examinations or other appropriate forms of re-assessment, and the student performance will be reconsidered at the next Board of Examiners.

### 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.

### AWARD (2<sup>nd</sup> board only)

The student has satisfied the regulations for the award of the degree, diploma or certificate for which they are registered.

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 (50 %).

### **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.)

### **MINIMUM CREDIT REQUIREMENTS FOR MSc PROGRESSION**

CREDIT TOTAL	June Decision
$X = 120$	Proceed
$100 \leq X < 120$	Proceed
$X < 100$	Transfer PG Diploma and Resit
$0 \leq x < 60$	Transfer PG Certificate and Resit

CREDIT TOTAL	September Decision
$X = 180$	Award MSc
$120 \leq X < 180$	Award PG Diploma
$60 \leq X < 120$	Transfer PG Certificate and Award
$0 \leq x < 60$	Withdraw

### **COMPENSATION SCHEME**

The Faculty operates a PGT Compensation Scheme for candidates registered for Postgraduate Diploma or MSc courses. Provided a student has achieved a Credit Weighted Average mark (CWA) over 1<sup>st</sup> attempts of at least **55%** across the taught curriculum, normally 120 credits excluding the project dissertation, then modules amounting to no more than 20 credits where mark(s) of 40 – 49% have been achieved will be awarded compensatory passes. The compensation scheme shall be applied only at the first Exam Board that considers the students' performance across the whole of the taught curriculum. It is not used at later Boards unless first attempts are being considered because of personal circumstances.

## External Examiners

Whichever method of assessment is used to assess a class the mark for that class is approved by an Examination Board. The Departmental Examination Board comprises all members of Staff in the Physics Department plus representatives from the Chemistry Department. In addition to these an External Examiners sits on the Examination Board and 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 Examiner is:

Dr Graeme Whyte  
Associate Professor Heriot Watt University, Edinburgh

## Dates of examination Boards

1<sup>st</sup> Board (progress board):

Pre-board and main board end of May/beginning of June TBC

2<sup>nd</sup> Board (award board):

Pre-board and main board beginning of September TBC

Information on potentially mitigating personal circumstances must reach the examination boards on the working day before the board as the very latest to be considered.

## Appeals

Students have the right to appeal against 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/>

## Postgraduate Taught Experience Survey (PTES)

The PTES is an annual survey, devised to find out about the experience of postgraduates on taught courses. Please check your Strathclyde email address for your unique link to access the survey - these will be sent out regularly in spring until the survey closes!

Further information is under [Postgraduate Taught Experience Survey \(PTES\)](#)

## 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?*

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).

#### *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.

### ***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 after the graduation date in November. 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 November but you do not qualify for the degree in time, Registry will assume that you will graduate "in absentia" at the next July ceremony.

### ***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 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. Make sure you hire your gown as soon as possible after you have confirmed your attendance at your specific ceremony date and time.

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**

- Science: [studentbusiness-science@strath.ac.uk](mailto:studentbusiness-science@strath.ac.uk)
- Finance Office: [finance-helpdesk@strath.ac.uk](mailto:finance-helpdesk@strath.ac.uk)
- Library: [help@strath.ac.uk](mailto:help@strath.ac.uk)
- [Ede & Ravenscroft Gowns / Photography](#) (search institution 'University of Strathclyde')

## Careers Guidance

### Have You Thought About Your Future?

Careers isn't just about getting a job after you graduate. Take a look at the opportunities while at university, to volunteer, gain work experience; develop your skills, and much more besides at <https://www.strath.ac.uk/professionalservices/careers/workexp/> Think about all the activities on your course, within the university and beyond that will allow you to explore the options open to you.

Knowing where to start can be difficult. Therefore, it is a good idea to look at the planning your career section of the Careers Service website <https://www.strath.ac.uk/professionalservices/careers/> you can revisit this throughout your time at university as your ideas change and evolve.

To view the vacancies for part time, internships and graduate jobs register at <https://www.strath.ac.uk/professionalservices/careers/look/> - you can even set up job alerts so that we tell you when jobs are added.

Surveys have shown that Strathclyde University's graduates are more likely than most graduates from elsewhere to find a job quickly. Nevertheless the job situation remains difficult nationwide and it is important to think through what career you might follow well before you graduate. Apart from the benefits of being early in the race for the better jobs, the realism produced by knowing the job market usually helps motivate your study.

During your MSc 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 of your final year and the timing of these will vary depending on your career focus. Some opportunities have closing dates very early in the academic year, even before Christmas.

You can continue to refine your career focus and embark on the job/postgraduate search process using the resources of the Careers Service.

### 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 - <https://www.strath.ac.uk/professionalservices/careers/students/makingapplications/cvsandcoverletters/>
- **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 <https://www.prospects.ac.uk/planner>.
- We also recommend the website **Gradcracker** (<https://www.gradcracker.com/>) 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 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.

## 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? **Contact Careers at** : [yourcareer@strath.ac.uk](mailto:yourcareer@strath.ac.uk)  
[Our location](#)  
Level 4, Jocelyn Bell-Burnell Wing  
Office hours: Monday to Friday Online and by phone 9am to 5pm  
In person 10am to 4pm  
Tel: 0141 574 5090

## 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

### [Careers Service Global](#)

- Increasingly employers want graduates to have a 'global mindset', which means understanding different cultures and how industries work across borders.

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

### Postgraduate Career Module

- This module was created by the Careers Service to support the career development of postgraduate taught students at University of Strathclyde

## **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. 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 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 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, potassium) react explosively with water.
- Mercury fumes are poisonous. If mercury gets spilled, inform demonstrator.
- Liquid nitrogen is cold but causes burns. Make sure it cannot splash into your eyes or onto your clothing.



- 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 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 lab and before eating. Label all containers of chemicals and never use lemonade or similar bottles to store chemicals in.

### **Machinery**

- In lab, rotary pumps have powerful electric motor 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 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 wall. Two valves to operate - get advice from 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 classes:

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.

**All activities in your project need a written risk assessment and potentially a method of work. These need to be signed by the student. Ask your supervisor about it.**

Our best wishes for your studies during this academic year, 2023/2024. 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 studying 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

These Regulations are correct at the time of publication but you are advised to check [Academic regulations Physics](#) for any changes.

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](#)

- [Advanced Physics \(PDF\)](#)
- [Applied Physics \(PDF\)](#)
- [Industrial Photonics \(PDF\)](#)
- [Nanoscience \(PDF\)](#)
- [Optical Technologies/Photonics \(PDF\)](#)
- [Quantum Technologies \(PDF\)](#)

The options for course selection are detailed in the regulations. The default courses for MSc students are denoted by PH9xx. These are all at “level 5”, i.e. Masters level. Some are shared with level 5 courses from our integrated masters (MPhys) program (PH5xx) or from our BSc program (PH4xx). In the latter case they are bearing additional assignments to bring them to level 5 (see appendix 4) and carry PH9xx codes.

Students on the Nanoscience course have a pre-described curriculum with the only selection between the physics (PH954) or chemistry (CH106) conversion course depending on background and the option to choose either PH956 Advanced Nanoscience 2 or PH968 Experimental Laboratories. **However, PH956 is not running this year.**

Students on the courses Advanced Physics, Optical Technologies/Photonics, and Applied Physics can choose optional modules from the selection in the regulations.

**You are allowed to take 20 credits which are not level 5.** Typically, this will be level 4 courses, in particular EE473 for Optical Technologies/ Applied Physics or PH459 for Quantum Technologies. If a postgraduate level 5 version of a class exists (like for the semester 1 PH4xx modules), you must choose this one. If you make a case to your adviser of study why a particular module PH4xx module is important to follow your ambitions, you can take one of the following semester 2 modules, if timetabling is compatible with the curriculum of your other MSc modules. Due to the uncertainty on semester 2 timetabling, you must choose PH9xx, PH5xx modules now and you can replace then one with a PH4xx module in the January Adviser of Study (AoS) Meeting. These are

PH423 Complex and Nonlinear Systems  
PH452 Topics in Physics  
PH457 Topics in Theoretical Physics  
PH459 Topics in Atomic, Molecular and Nuclear Physics

Further remarks:

- Normally you will take 60 credits in each semester, i.e. 3 modules in semester 1 and 3 modules in semester 2. PH967, EE473 and EE972 run over the whole year and will disrupt this scheme of equal load.
- **PH968** “Experimental Laboratories” runs in semester 2 and **PH967** “Computational Physics” runs in semester 1 and 2. Their main schedule are laboratories with a significant contact time and hence we cannot avoid overlap with other courses. You need to check the timetabling. Please note that Computational Physics is not meant only for theoreticians but provides useful programming, numerical and visualization skills for any physicist. Some basic advance

knowledge of Python is useful or you need to be willing to acquire that in self-study as the UG students on the matching module PH285 will have had some Python training in year 1. This should not be an issue for student on Master level.

- Students with a BSc from a British or other high ranking university might have already the skills taught in the transferable skills class **PH949** “Physics Skills”. In that case we can recognize this as prior learning and exempt you from PH949. In that case you are advised to take PH551 “Research Skills”. If you are interested in that option, please prepare documentation to support this prior learning for the Adviser of Study Meetings in the development week, e.g. transcript showing course(s) and results and a downloaded description (or link to a description) or evidence of relevant assessment you submitted for these courses. You can take PH551 also instead of a “technical/physics” module if you have interested in science management and communication or have difficulties to find suitable other modules.

#### Specific notes on **MSc Optical Technologies/Photonics**:

- Compulsory modules: PH949, PH957 (sem 1), PH963 (sem 2)
- You can take allowed combination of three level 5 (9xx or 5xx) classes, timetable permitting (or two level 5 plus one level 4, EE473 (sem 1+2) or PH4xx (sem 2))
- You can choose EE473 in sem 1 but it runs over two semesters and will lead to an overfull curriculum either in sem 1 or 2. We cannot say exactly with what modules it might overlap in sem 2 and thus it might constrain the choice of sem 2 modules. Typically, there were no issues and we will make sure that it does not overlap with the compulsory PH963.
- PH958 Optical Design is only running if there is enough student interest. You must indicate interest by registering now if you want to take it, as the decision on availability will be taken well before the January AoS meetings.
- EE972 Control Principles is overlapping with PH957 this year and hence cannot be taken.
- Typical choice for “core” photonics
  - Sem 1: PH962 and/or EE473
  - Sem 2: selection from PH958, PH955, PH968, EE473
- Choice for focus on photonics in life and nano sciences
  - Sem 1: PH953
  - Sem 2: PH955 plus one out of PH958, PH968
- If you have interest in quantum optics and quantum technologies, you can take PH562 and/or PH913 in sem 2. You will need however some theoretical background.
- Another module of potential interest is PH960 “Advanced Topics in Photonics” which runs as “Advanced Topics in Physics” on MPhys level. The course provides an introduction to applications of ultra-high intensity laser in laser-plasma interaction and laser based acceleration. It is taught by both experimental and theoretical lecturers and demands some mathematical skills and either some prior knowledge of basic plasma physics (as taught in PH452) or the willingness to acquire it in self-study.

#### Specific notes on **MSc Applied Physics**:

- Only compulsory module: PH949
- Any combination of five level 5 (9xx or 5xx) classes (or four level 5 plus one level 4, EE473 (sem 1+2) or PH4xx (sem 2)) with relevance for applied physics and timetable permitting
- You can choose EE473 in sem 1 but it runs over two semesters and will lead to an overfull curriculum either in sem 1 or 2. We cannot say exactly with what modules it might overlap in sem 2 and thus it might constrain the choice of sem 2 modules. Typically, there were no issues and we will make sure that it does not overlap with the compulsory PH963.
- PH958 Optical Design is only running if there is enough student interest. You must indicate interest by registering now if you want to take it, as the decision on availability will be taken well before the January AoS meetings.

- EE972 Control Principles is a useful module for Applied Physics but historically interest has been low. In sem 1, you can only combine it with PH962. In sem 2, it might constrain the choice of sem 2 modules.
- Typical choice with focus on nanoscience and solid-state physics
  - Sem 1: PH953 and PH962
  - Sem 2: PH955, PH963, PH968
- Choice with focus on optics and photonics
  - Sem 1: PH957 and PH962 and/or EE473
  - Sem 2: selection from PH955, PH958, PH963, PH968, EE473
- Choice with focus on plasma physics
  - Sem 1: PH957 and one of PH953, PH962, PH551
  - Sem 2: PH560, PH960, selection from PH452, PH968, PH955
- PH452 is an interesting semester 2 option for Applied Physics, if you did not take EE473 already.

#### Specific notes on **MSc Advanced Physics**:

- Only compulsory module: PH949
- Any combination of five level 5 (9xx or 5xx) classes (or four level 5 plus one level 4, EE473 (sem 1+2) or PH4xx (sem 2), timetable permitting. You are free to mix for a broad education but typically students focus on areas of interest.
- Choice with focus on theoretical physics
  - Sem 1: PH988 and PH551 or another module
  - Sem 2: selection from PH913, PH960, PH562, PH457, PH423
- Choice with focus on nanoscience and solid-state physics
  - Sem 1: PH953 and PH962
  - Sem 2: PH955, PH963, PH968
- Choice with focus on optics and photonics
  - Sem 1: PH957 and PH962 and/or EE473
  - Sem 2: selection from PH955, PH958, PH963, PH968, EE473
- Choice with focus on plasma physics
  - Sem 1: PH957 and one of PH953, PH962, PH551
  - Sem 2: PH560, PH960, selection from PH452, PH968, PH955
- Choice with focus on quantum physics
  - Sem 1: PH988, PH957
  - Sem 2: selection from PH913, PH562, PH955, PH968, PH459
- PH452, PH459, PH413 are potentially an interesting semester 2 options for modules broadening your training.

## APPENDIX 2 - PROGRAMME SPECIFICATIONS

Postgraduate Taught Class Options	
PH949	<a href="#">Physics Skills</a> (20)
PH551	<a href="#">Research Skills</a> (20)
PH952	<a href="#">Project</a> (60)
PH913	<a href="#">Advanced Topics in Quantum Physics - Quantum Technologies</a> (taught with PH504)
PH953	<a href="#">Introductory Nanoscience</a> (20) (taught with PH454)
PH954	<a href="#">Physics Conversion Course</a> (20) (elements shared with condensed matter physics PH386, and the waves and optics part of PH283)
PH955	<a href="#">Advanced Nanoscience 1: Imaging and Microscopy</a> (20) (taught with PH554)
PH956	<a href="#">Advanced Nanoscience 2: Solid State Nanoscience</a> (20) (taught with PH553)
PH957	<a href="#">Topics in Photonics: Laser and Nonlinear Optics</a> (20) (taught with PH455)
PH958	<a href="#">Optical Design</a> (20)
PH960	<a href="#">Advanced Topics in Photonics: Ultrafast laser-plasma interaction and laser-based particle acceleration</a> (20) (taught with PH552)

PH962	<a href="#">Photonics Materials and Devices</a> (20) (taught with PH453 Topics in Solid State Physics)
PH963	<a href="#">Advanced Photonics Devices</a> (20)
PH964	<a href="#">Theoretical Quantum Information</a> (20) (taught with PH558)
PH967	<a href="#">Computational Physics</a> (20) (taught with PH285)
PH968	<a href="#">Experimental Laboratories</a> (20)
PH988	<a href="#">Topics in Quantum Physics (20)</a> (taught with PH422)
CH106	<a href="#">Chemistry Conversion Course</a> (20) (for Nanoscience students with physics background)
CH927	<a href="#">Nanoscience 3: Nanochemistry</a>
EE473	<a href="#">Optical Communication (Photonic Systems)</a>
EE972	<a href="#">Control Principles</a>
PH560	<a href="#">Advanced Topics In Electromagnetism And Plasma Physics</a> (20)
PH562	<a href="#">Advanced Topics in Quantum Optics</a> (20)
PH452	<a href="#">Topics in Physics</a> (20)

PH423	<a href="#">Topics in Complex and Nonlinear Systems</a> (20)
PH457	<a href="#">Topics in Theoretical Physics</a> (20)
PH459	<a href="#">Topics in Atomic, Molecular and Nuclear Physics</a> (20)

Please note: The class descriptors are a description of course content which might be slightly outdated. The staff listed on the Class Descriptors may not be the class lecturer. Also, the content and assessment details may vary as well. You will get up-to-date information for your class in a class information sheet at the beginning of the teaching period.

## APPENDIX 3 – 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 4 – Project Arrangements and Key Assessment Dates

**PH952 (project):** The project is worth 60 credits and is assessed via a report, a viva (oral examination of about 35 minutes), a talk (12 minutes + 3 minutes discussion) and an assessment of your supervisor on your engagement and achievements. The projects are supervised by a first supervisor, with support by a second supervisor to provide additional expertise where necessary and to cover for absences. Details are on the [MyPlace site for PH952](#). For questions, please contact Prof Ackemann. You will get an insight in potential project areas via the presentation of the research group leaders in the Wednesday afternoon sessions. MSc students should start towards the end of semester 1 to **actively** search for project opportunities via the websites, research literature and the courses offered by the participating departments. They should actively address potential supervisors in areas they find interesting to define a potential project. Students (and that is the majority) who do not negotiate a bespoke project with a supervisor will be able to indicate their preferences from a booklet with a list of projects offered. A meeting in the development week of semester 2 will explain this process. The choice of courses in semester 2 should be suitable to prepare for the research field the student aspires to do the project in. Projects will be assigned middle of semester 2.

Anticipated key dates TBC

Project start: 20/5/2024

Project report hand-in: 15/8/2024

Project assessment: 20/8-30/8/2024 (note that due to staff availability or extensions granted for personal circumstances, some assessment might need to take place later)

### Major PGT assessment hand-in deadlines

The semester 1 courses are typically courses on BSc level (typically level 4) which are brought to MSc level (level 5) by additional assignments. These will be oral examination (“vivas”) taking place in the development week of semester 2: 9 January 2024 - 13 January 2024. In PH954 you might be asked to prepare and give a presentation before your viva. The viva will provide the opportunity to demonstrate understanding of the module contents and learning outcomes in a different way from solving exam questions. It will be a benevolent conversation on elements of contents and connections within the module.

## APPENDIX 5 – Support

The university provides a huge variety of opportunities for support. **Use these** and use them early to improve your skills, in particular IT or English language.

1. Navigating academics successfully - Good study habits, how to properly ask questions, time management, support for English, math skills, academic writing:  
<https://www.strath.ac.uk/studywithus/strathlife/academicsupport/>

2. In sessional English courses, in particular academic writing.

[In-Sessional General English and English for Academic Purposes 2023-2024](#)

Students paying overseas fees for a full year are entitled to 4 hours per week of English (equivalent to two different courses per week) FREE throughout the academic year. We also offer 2 hours per week of FREE In-sessional classes (equivalent to one course per week) to Erasmus and other exchange students. In-sessional students may also take two 20-minute one-to-one online consultations per week with an English Language Teaching (ELT) tutor (depending on availability) to discuss any problems they may be experiencing with their English.

**Please use this opportunity to train your English! It will help you to excel in your course.**

3. [IT training](#) and [IT help](#)
4. [University licensed software.](#)
5. How Strathclyde works - Information on campus life and student support: [Strathlife student pages.](#)
6. MyPlace [PH952 Project](#)
7. MyPlace [Physics Personal Development](#)
8. [Postgraduate Career Module](#)
9. [International arrival checklist](#)
10. How to secure accommodation: <https://www.strath.ac.uk/studywithus/accommodation/> and <https://www.strathunion.com/support/housing/findinghousing/>
11. How to secure finances - Registering a bank account, using digital banks such as Monzo, Revolut, converting currency etc.  
<https://www.strath.ac.uk/studywithus/internationalstudents/beforeyouarrive/banking/openingabankaccountintroductoryletter/>
12. [Student union](#) and [Student Union Advice Hub](#)
13. How to take advantage of being a student - Student discounts, part-time job opportunities:  
<https://www.strath.ac.uk/professionalservices/careers/workexp/part-timejobsandcasualvacationwork/>