# IMPERIAL

Faculty of Natural Sciences
Department of Physics



Student Handbook 2024–25

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## **Welcome to Imperial**

Congratulations on joining Imperial College London, the only university in the UK to focus exclusively on science, medicine, engineering and business.

From Fleming's discovery of Penicillin to Gabor's invention of holography, Imperial has been changing the world for well over 100 years.

You're now very much a part of this community of discovery and we hope you will take this opportunity to make your own unique contribution. At Imperial, we expect all members of our community, whether students or staff, to share and demonstrate our values of respect, integrity, collaboration, innovation and excellence in all we do and strive to achieve.

Imperial provides a dedicated support network and a range of specialist support services to make sure you have access to the appropriate help, whether that's further training in an academic skill like note taking or simply having someone to talk to.

You'll have access to an innovative range of professional development courses within the Early Career Researcher Institute throughout your time here, as well as opportunities to meet students from across the College at academic and social events – see page 6 for more information.

We actively encourage you to seek out help when you need it and try to maintain a healthy work-life balance. Our choice of over 360 clubs, societies and projects is one of the largest of any UK university, making it easy to do something different with your downtime. Access to the gym and other sporting facilities will be dependent on government guidance. We are working to ensure that you have access to a variety of resources online to support your health and wellbeing if there are restrictions.

As one of the best universities in the world, we are committed to inspiring the next generation of scientists, engineers, clinicians and business leaders by continuing to share the wonder of what we do through public engagement events. Postgraduate students, alongside our academics and undergraduate students, make a significant contribution to events such as our annual Imperial Festival and our term-time Imperial Fringe events – if you're interested in getting involved then there will be opportunities for you to do so.

## **Our Principles**

In 2012 Imperial and Imperial College Union agreed 'Our Principles'. This series of commitments was developed by academic and support staff in partnership with undergraduate and postgraduate students and Imperial College Union.

## Imperial will provide through its staff:

- A world-class education embedded in a research environment.
- Advice, guidance and support.
- The opportunity for students to contribute to the evaluation and development of programmes and services.

## Imperial will provide students with:

- Clear programme information and assessment criteria.
- Clear and fair academic regulations, policies and procedures.
- Details of full programme costs and financial support.
- An appropriate and inclusive framework for study, learning and research.

#### Imperial students should:

- Take responsibility for managing their own learning.
- Engage with the university to review and enhance provision.
- Respect, and contribute to, the Imperial community.

#### The Imperial College Students' Union will:

- Support all students through the provision of independent academic and welfare assistance.
- Encourage student participation in all aspects of the university.
- Provide a range of clubs, societies, student-led projects and social activities throughout the year.
- Represent the interests of students at local, national and international level.

## **Welcome from the Early Career Researcher Institute**

#### Welcome to Imperial and to the Early Career Researcher Institute!

The Early Career Researcher Institute works closely with Imperial College Union to enhance your experience and to ensure that when decisions are being made which affect your time at the university, your voice is heard.

Another important aspect of our role is to provide you with a free and exciting programme of professional development opportunities, delivered through a range of modes, so you can access these wherever you are in the world.

Our staff have a variety of research and other career experiences. Our professional development opportunities are designed to support you as you progress through your programme, but also to help you improve your personal impact, and be prepared for your chosen career, whether that is within academia, industry, government or something completely different!

Importantly, by attending our courses and workshops, you will meet students from other academic departments, enabling you to start building your research connections. We also deliver exciting competitions throughout the year which are an opportunity to broaden your knowledge as well as to have some fun!

Our primary way to communicate with you will be through our monthly e-newsletter and our weekly professional skills email bulletins. However, do check our website, blog and social media platforms to keep up to date with all the latest activities available to you.

Finally, Imperial is an extremely exciting, stimulating and diverse environment in which to work, to study and to research. Do make the most of all that the university and your programme has to offer.

Please note that the Early Career Researcher Institute was formerly known as the Graduate School. We are working hard to update all our resources with our new name, so please bear with us as we continue to work through this task. For now, you can find out more about us via the website:

www.imperial.ac.uk/students/academic-support/graduate-school/

## **Introduction from the President of Imperial College Union**



Welcome to Imperial! To begin with, a huge congratulations on joining us here at Imperial—this is where you belong! This is a globally renowned institution and offers much more than just the degree you are looking to leave with. You will come across countless opportunities and meet an array of compelling people amongst your peers, accomplished academics and the wider university community. Imperial attracts the best talent from around the world - making it here is already a testament to your academic zeal and ambitious character. Now, what you make of your experience at Imperial has the potential to shape your future.

Being located in London is a true perk of being an Imperial student. Right on our west London doorstep are landmark museums and iconic venues, including the Royal Albert Hall which has hosted Imperial graduations for over 60 years. Beyond our campuses, the city has something for everyone; be that the West End, sporting arenas or diverse cuisines. I strongly encourage you to explore where and when you can – London is a fantastic place for your university memories to call home.

You will likely have chosen to come to Imperial for its academic reputation as an outstanding university, and it will deliver on this. The facilities for research and your learning are terrific. To accompany this, there are hundreds of student-led societies and events available to you outside of your degree. These are overseen by your students' union – Imperial College Union. The Union is led by students, for students. The four deputy presidents and I have all been democratically elected to work full time on improving your student experience at Imperial. We have a large team of permanent staff behind us, running the many functions of the Union such as supporting clubs and training student representatives.

The Union also runs the Advice Service, where guidance and support can be provided on issues such as life in halls, complaints, and academic appeals. This is a free and confidential service that is independent from the university. You can access this by emailing <a href="mailto:advice@imperial.ac.uk">advice@imperial.ac.uk</a>.

University is a new stage of life. For many, this stage presents itself with newfound freedom and control over what you do. As daunting as it may seem, take advantage of it! Immerse yourself in your degree, your extra-curricular activities and in the connections you make.

No matter what problems you have or opportunities you're looking for, we're here to help. Our office is on Level 2 in Beit Quadrangle, and you can check out our website for more information.

Wishing you an incredible year ahead, Camille Boutrolle

Imperial College Union President 2024-25



union.president@imperial.ac.uk imperialcollegeunion.org

## 1. Introduction to the Department

#### **Welcome from the Course Director**



The purpose of this handbook is to provide current students and staff with an outline of the MRes in Soft Electronic Materials course, including assessment and feedback mechanisms (where appropriate).

This edition of the course information handbook applies to the academic year 2024-25.

The MRes course usually has a relatively small number of students (in comparison to many undergraduate courses), and have extensive access to

the academic and support staff of <u>Imperial's Centre of Excellence in Processable Electronics (CPE)</u>. Students should therefore not hesitate to approach the Course Director or any member of staff for advice or assistance.

This handbook describes the framework of the course and its assessment, but the Course Director and/or Course Management Committee may make changes to detailed procedures if the circumstances indicate this is desirable. Similarly, the Board of Examiners has absolute discretion to modify criteria described in this handbook, although in practice this would only occur in exceptional circumstances. Students will be notified of any changes prior to their introduction.

#### Aims and objectives of the MRes in Soft Electronics Materials

The formal aim of the MRes in Soft Electronic Materials is:

"to teach the core physical concepts and the research skills of Soft Electronic Materials necessary for post-graduate study in the field or for a technical career outside academia."

This aim is fulfilled via the following formal objectives. The MRes in SEM will:

- attract well-qualified Bachelor level students and provide an intellectually challenging multidisciplinary degree programme
- provide high quality advanced education in the relevant scientific disciplines, including
  physics, chemistry, materials and engineering science beyond Bachelor level within an
  environment with considerable teaching and research experience in the field
- give students the experience of undertaking an important individual project and reporting the results in a full scientific thesis and presentation
- give students training in appropriate research methods
- develop students' skills of communication, both written and oral, to specialised and nonspecialised audiences
- equip students for further academic study at doctoral level in soft electronic materials and related subjects, such as renewable energy and solar power, optoelectronics and sensors.

The key elements of the course that support these objectives are:

- around 60 hours of core lectures in the autumn term, assessed by written examination;
- experimental courses, workshops in practical techniques and themed research seminars;
- courses and lectures offered by the <u>Graduate School</u> and the <u>CPE</u> to enhance professional skills;
- a research project, assessed by an academic presentation and written report;

• advanced research lectures and seminars by world leading researchers.

## **Academic and administrative staff**







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Lecturer in materials synthesis

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Ji-Seon Kim

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Course director and lecturer in fundamentals of semiconductors

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Jenny Nelson

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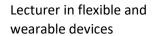
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Felice Torrisi

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Jess Wade

B336, Royal School of Mines, Materials, South Kensington

Lecturer in materials processing and characterisation

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#### Attendance and absence

You must inform your Senior Postgraduate Tutor if you are absent from the university for more than three days during term. If the absence is due to illness, you must produce a medical certificate after seven consecutive days. If you miss an examination or the deadline for any other assessment (including lab work, in class tests, coursework or presentations) due to illness or other unforeseeable and unavoidable circumstance you must follow the Mitigating Circumstances Policy and Procedure. Please note that all claims for mitigation must be submitted within 10 working days of the examination or assessment deadline. If you are unable to provide evidence at the time you must submit the claim and indicate what evidence will follow and when it can be provided. Claims without evidence will normally be rejected. Please see the section on mitigation below.

The Registry will be informed of all student non-attendances as the university is obliged to report the non-attendance of students on Student Route visas to the Home Office.

Attendance will be monitored by registers at lectures and practicals, by submission of coursework (assessed and non-assessed) and by registers at all examinations. Meetings with staff (eg project supervisors, personal tutors) may also be used.

Any holiday taken will be at the discretion of the Course Management Committee, but should under no circumstances be taken during examination periods. You must inform your supervisor and Lisa Bushby if you are absent from College for more than three days during term. If the absence is due to illness you must produce a medical certificate after seven days. If you miss an examination through illness you must contact Prof Ji-Seon Kim and Lisa Bushby on the day and provide a medical certificate within five working days. If you are going to miss a lecture or scheduled course due to illness then you must let Lisa Bushby know as soon as possible.

Students are reminded that the MRes course is a full-time postgraduate course and as such does not observe the traditional holidays of an undergraduate course. No formal lectures or courses will be scheduled outside of College term times; however, students will be expected to continue working on their research projects at this time except for days when College is officially closed. There is no term-free time in this course.

If you do not engage satisfactorily with your studies, Imperial will consider what action is necessary to support your continued study under the Unsatisfactory Engagement Policy:

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www.imperial.ac.uk/media/imperial-college/administration-and-supportservices/registry/academic-governance/public/regulations/2022x2f23/Unsatisfactory-Engagement-Policy-and-Procedure.pdf

## **Key dates 2024–25**

#### **Term dates**

Autumn term: 28 September 2024 – 13 December 2024

Spring term: 04 January 2025 - 21 March 2025

Summer term: 26 April 2025 – 27 June 2025

#### **Closure dates**

Christmas/New Year: 23 December 2024 - 01 January 2025

(Imperial reopens on 02 January 2025)

Easter Holiday: 17 April 2025 – 22 April 2025

(Imperial reopens on 23 April 2025)

Early May Bank Holiday: 06 May 2025

Spring Bank Holiday: 26 May 2025

Summer Bank Holiday: 25 August 2025

#### **Key events**

Great Exhibition Road Festival: 7 June 2024 – 8 June 2025

## **Key programme dates:**

Course induction: **16.00-17.30 1 October 2024, BLKT741** 

Project list distribution: week commencing 30 September 2024

Welcome dinner: After project pitch afternoon on 9 October

Discussion with potential supervisors: from week commencing 30 September 2024

Project pitch afternoon with supervisors 9 October

2024

<u>Introduction to Safety at Imperial (sharepoint.com)</u> online course to be completed by 7 Oct 2024 <u>Safe Laboratory Practice Training (sharepoint.com)</u>

Core lecture courses begin: week commencing 7 October 2024

Journal Club: week commencing 7 October 2024

Submit project preferences/justifications 10AM 25 October 2024

Project allocation decision 1 November 2024

Preparing your Literature Review Graduate School course 17 November 2024

Science, Research and Integrity Graduate School course 22 November 2024

Computational Workshops: 30 October *Material Structure and Dynamics* 

6 November Molecular Modelling

13 November Optical and Electronic Properties of

Materials

20 November Device Physics

Assessed group research paper presentations 2 December 2024

Project begins: After project allocation

Literature review/project plan development: November-December 2024

Core lecture courses end: 29 November 2024

Literature review deadline: 4PM 13 December 2024

Advanced Practical Skills courses: 13-24 January 2025

Presentation Skills Graduate School Course: 27 January 2025

MRes exam 1: 4 February 2025

MRes exam 2: 7 February 2025

Preparing a PhD Proposal: 21 March 2025

MRes mid-term review project presentations: At Soft Electronic Materials Summer School

Soft Electronic Materials Summer School: June/July 2025

CPE Annual Symposium: June/July 2025

MRes project presentation: 1 September 2025

MRes thesis deadline: 4PM 5 September 2025

MRes Exam Board: Late September 2025

You do not need to attend the meeting but all

students will be expected to be in College during the

external examiners meeting

Deadlines are strictly enforced and attendance to the events is compulsory for all MRes students

\* send certificate of completion to Lisa Bushby. <a href="mailto:l.bushby@imperial.ac.uk">l.bushby@imperial.ac.uk</a>

Some students undertake an internship within a company during their vacations to develop skills, gain industrial insights, and earn money. You should only undertake an internship that starts after the formal end of term to ensure there is no clash with academic studies. In addition, if you hold a student visa, the type and amount of work that you can do is restricted. It is essential that you are aware of these restrictions so that you do not breach your student visa conditions. Please visit the International Student Support webpage for further details and note that only undergraduate students can undertake an internship during the summer vacation.

 $\underline{www.imperial.ac.uk/students/international-students/visas-and-immigration/working-in-the-\\\underline{uk/work-rules-during-your-studies/}$ 

## **Programme information**

## My Imperial Campus

An app for students - designed by students!

My Imperial Campus is the beginning of a new mobile experience for the Imperial College London community. The app is being designed by Imperial students and alumni and delivered in an iterative way as the team learns more about the experiences that our community want in order to thrive at Imperial. The app is relatively young, and development is continual, please download and explore the app and look out for opportunities to get involved!

You can download the app for Android devices from the Play Store or for iOS devices from the App Store.

#### Current feature highlights:

- 'Search' is an AI chatbot allowing users to chat with information from the university website and other resources.
- 'Maps' 2D maps of all campuses and the first 3D map of the South Kensington Campus (White City campus is next).
- 'Events' All public events Student Union events and societies can be explored, edit your preferences in the settings to customise the feed. Here you can also find a 'Welcome week' filter to view specific events to enjoy at your welcome week.
- 'Timetable check-in' The Business School and a growing list of other departments requires you to check into class if you are physically on site; use this feature to quickly check-in. Here you can also find a link off to view your full timetable in a browser.
- 'Internships and Careers' Search through the latest internships and job vacancies received by the Careers Service.

## **Imperial Success Guide**

The Imperial Success Guide is an online resource with advice and tips on the transition to university level study. More than just a study guide, it is packed with advice created especially for students, including information on support, health and well-being and ideas to help you make the most of London.



www.imperial.ac.uk/students/success-guide/pgt/



## **Student Shapers**

Student Shapers is a chance to actively contribute to improving your learning experience at Imperial. This programme lets you work directly with staff on exciting projects that enhance the curriculum, create innovative teaching methods, and make a real difference in our learning community. The Student Shapers programme is open to all Imperial students across all departments. All opportunities that have been approved are listed in the 'Current Projects' area of the website.



www.imperial.ac.uk/students/studentshapers/how-to-get-involved/current-projects/

## **Imperial Award**

The Imperial Award is a programme that fosters personal development through self-reflection on your experiences, formally recognising this on your transcript. This programme is open to all students at Imperial, including UG, PGT, PGR and intercalating students. The Imperial Award aims to help you uncover more about yourself and your potential, and to enhance your ability to articulate the achievements and skills you have developed through activities beyond the lecture hall. For more information, please visit the Imperial Award page.

www.imperial.ac.uk/students/imperial-award/

## 3. Course overview

#### **Course duration and information**

This course is a full-time one-year Masters in Research, consisting of a multidisciplinary research project, taught courses in the physics, chemistry, materials, and engineering science of soft electronic materials, practical training courses, specialist lectures in transferable skills and group discussion sessions.

The structure of the course will be as follows:

Oct–Dec 2024: Project allocation

Core course lectures

Computational APS courses

2 December 2024: Assessed group presentations on research papers

13 Dec 2024: Submission of literature review

Jan 2025: OPV Device Fabrication APS course

OLED Device Fabrication APS course

Feb 2025 Module 1 and 2 Exams

Nov 2024-Sept 2025: Research project

Summer 2025: Summer School including poster presentation

Sept 2025: Oral presentation on research project and feedback

Sept 2025: Submission of research project thesis

Timetables are prepared in time for the start of term and are distributed to the students. These contain details of all the compulsory components of the course.

The course follows the College standard working day, starting at 09.00 each day. In the autumn term, there are eight timetabled hours in a week on average. In the spring term, the will be practical courses and workshops.

#### Taught component of the course

The course begins in the autumn term (October – December) with a fixed lecture programme of core courses, including some computational workshops, which will be followed up in the spring term (January – March) with additional practical advanced courses. Each core module is compulsory and the material covered will be examined. The core and advanced courses are outlined in the appendices and they address the demand for the breadth of knowledge that we aim to cover in the course.

#### The curriculum

There are four modules on the Soft Electronic Materials MRes course.

Module 1 Fundamentals of Organic and Inorganic Semiconductors and Materials Synthesis and Processing Core Course

Module 2 Device Physics and Applications and Material
Characterisation Core Course
Module 3 Literature review
Module 4 Project presentation and thesis
module 11 reject presentation and thesis

#### **Core lecture courses**

There are two compulsory lecture modules in the autumn term comprising 60 hours of lecture in total:

- Fundamentals of Organic and Inorganic Semiconductors and Materials Synthesis and Processing
- Device Physics and Applications and Material Characterisation

Modules 1 and 2 will be assessed 80% by exams and 20% by 30-min group presentations on lectures. You will be given research paper(s) to be presented.

For the assessed group presentations, groups will be expected to carryout in-depth background research on the given subject and to host a discussion on the science presented in the paper.

## **Advanced workshops and lectures**

A distinctive feature of the MRes is the practical workshops and will include:

- Computational workshops
- OLED device fabrication
- Characterisation course

Additional courses may be confirmed during the year.

#### **Transferrable skills**

A series of transferable skills courses are already included in the MRes programme. These include:

- Journal Club: \*Compulsory\*
  - This is a transferable skills course, which aims to develop presentation skills, whilst encouraging scientific debate, and providing the opportunity to broaden scientific knowledge. At each meeting students will discuss a seminal high impact paper that is circulated prior to the meeting. The session is chaired by research group representatives from across the CPE.
- Plagiarism Awareness: \*Compulsory\*

This is a mandatory course provided by the Graduate School.

By the end of this online workshop you will be able to:

- 1. Explain what plagiarism is
- 2. Identify incorrect referencing and possible cases of plagiarism
- 3. Apply techniques to avoid the different types of plagiarism
- 4. Reference properly someone else's work as well as your own work
- 5. Evaluate and relate the impact of academic integrity to your own work as a researcher and in your career

2024-25 starters will be automatically enrolled on the course, so please check your Blackboard space. Plagiarism awareness | Imperial students | Imperial College London. You will be required

to achieve a minimum level of understanding and present the certificate as proof of completion to Lisa Bushby by 12 October 2024.

- Science, Research and Integrity Graduate School Course 22 November 2024 \*Compulsory\*
  This is an in-person (room TBC) 3-hour discussion based workshop that will help you 1) clearly define what counts as scientific fraud in its various forms, 2) critically evaluate the relationship between the demands of professional research and the motivation to commit fraud, 3) describe the moral structure of the world of scientific research, in terms of the web of obligations within which researchers have to work, 4) evaluate the moral structure of specific dilemmas you may encounter during your research career, 5) recognise some basic distinctions between differing approaches and theories of ethics, such as consequentialist, duty-based, virtue based or care ethics.
- Preparing your Literature Review (online course, to be completed by 17 November 2024)
   \*Compulsory\*

This online course will help you 1) define your literature review from your research question, 2) identify the boundaries of your literature review with reference to your research question, 3) assess the usefulness of different sources of literature, 4) employ effective reading strategies, 5) structure a literature review based on a research question.

The course can be accessed via the following link:

Preparing your Literature Review (Online Course) | Imperial students | Imperial College
London

You will be required to achieve a minimum level of understanding at the end of the course and present the certificate as proof of completion to Lisa Bushby by 18 November 2024).

- Presentation Skills Workshop (in-person course 27 January 2025) \*Compulsory\*
  This in person (room TBC) course will include two sessions: an introduction to presentations and a practical session where you will have the opportunity to present. This course aims to help you 1) identify the importance of knowing your audience and your objective, 2) recognise the importance of having a clear structure and relevant content, 3) employ various tools and techniques to communicate your message clearly and respond to questions, 4) assess the quality of presentations and provide constructive feedback.
- Preparing a PhD Proposal<sup>§</sup> (blended course with pre-course activities to complete in your own time and course activities during the live course, 21 March 2025) \*Compulsory\*
   This blended online (MS Teams) course will help you to 1) identify the key contents required to write a research proposal, 2) recognise the importance of having a clear structure, 3) analyse a written PhD research proposal and 4) write a draft version of the research proposal.

Recommended courses, these are not compulsory but we strongly advise our students to take these courses:

Presenting your Research by Poster (Webinar)
 This is a 1-hour workshop that will help you 1) identify the criteria/standards, audience, and the purpose before creating your poster, 2) evaluate the strengths and weaknesses of posters to

engage with an audience, 3) identify the most appropriate layout, fonts, colours and relevant content to apply on your poster, 4) recognise how to present the key points of your poster.

Presenting your Research by Poster | Imperial students | Imperial College London

Preparing your Dissertation (Webinar)
 This self-paced workshop will help you 1) create a structure for your dissertation, 2) employ planning strategies to become a more effective writer, 3) use writing strategies to become a more effective writer, 4) assess your dissertation.
 Preparing your Dissertation (Online Course) | Imperial students | Imperial College London

Students wishing to undertake further courses offered by the Graduate School may do so. We strongly advise that you discuss your choices of Graduate School courses with your supervisors prior to attending and make sure that these do not clash with any of the required MRes courses. A full list of the courses available can be found here: <a href="Courses for Master's Students">Courses for Master's Students</a> | <a href="Imperial students">Imperial Students</a> | <a href="Imperial students">Imperial College London</a>

#### **Research Project**

The major component of the course is the multidisciplinary research project. A literature report on the research topic will be submitted in December, a poster presentation on on-going research at the Soft Electronic Materials Summer School and a final thesis and presentation on the research early September.

All projects have at least two supervisors with complimentary expertise and will be carried out at Imperial College.

During your project you will develop your research skills, as well as working towards contributing new knowledge. Some projects will lead to new publishable results, while some may not work out with clear results. Research is about exploring the unknown, and it is not expected that everyone will achieve exactly what they set out to. However, with a careful scientific approach (remember your control experiments!) we can learn, even from unsuccessful experiments, and this approach will be considered in your assessment.

Most research projects are never truly completed, as there are almost always more questions to answer. However, it will be important for you leave sufficient time for you prepare your research presentation and thesis prior to the deadlines.

Literature review and project proposal (submission deadline: 16.00 13 December 2024)

The literature review and proposal is to be written in the first term. It is expected to be an in-depth critical review of the subject matter chosen for a research project, a maximum of 7000 words, excluding references. The report should include:

- o abstract
- bibliography
- literature survey
- proposal for the work to be carried out during the research project.

The purpose of the project proposal is to plan independent new work/research based on an area you have identified in the literature review. The written style, standard of presentation, completeness of the literature survey and analysis of the literature are assessed. The rational for the proposed research will also be marked, to ensure an understanding of the aims and objectives of the proposed research.

Below are some general comments which are applicable to all MRes reports (including the Literature Review):

- all reports should be word processed
- o use 25-30mm margins all round and print single-sided
- o number all pages
- use 1.5 spacing, except perhaps for the "contents" page and references where you may wish to use single spacing
- use a normal font such as 12 point Times (serif) or 11 point Arial (sans-serif). Do not use fonts smaller than these as this impacts the standard of presentation and makes them more difficult to read
- o ensure diagrams, figures and graphs are clearly laid out with clear labels and captions.

Both the literature review and the thesis will be marked by both main supervisors as well as an independent marker. Please note that the submission deadlines are strictly enforced.

Points worth considering when preparing a great literature review:

- Keep it concise and focussed (7000 words excluding references should be considered an upper limit).
- Don't waste too much space and effort on generic background literature keep the general introduction short and then concentrate on the issues and literature most relevant to your project. (Your markers will have read generic introductions many times before.)
- Unless you are working on a very niche topic you won't be able to cover every possible reference in your review – try and find the most important/significant developments relevant to your planned work.
- Can you identify trends, themes or new insight from the literature? Are there non-obvious holes in current knowledge or capabilities? Often if something hasn't been done there is a reason what is it?
- Put your project proposal in the context of the existing literature try to clearly identify what you hope to add to what has already been achieved or understood.

## Thesis (submission deadline: 16.00 5 September 2025

Your research project should be written up in the form of a thesis and should be typically around 60-75 pages long. A maximum of 30,000 words is suggested, but you should not include irrelevant or content unnecessary just to reach these lengths. It should include:

- abstract
- introduction
- o updated literature review
- o methods
- o results
- o conclusions
- o further work

- o bibliography
- o (optional appendices)

Use a standard font (e.g., Times Roman, Arial, Helvetica), 12-point size, and 1.5 line spacing. Adding descriptive titles to the chapters is recommended when appropriate. The writing should use accurate grammar, spelling, and punctuation. Ensure that you avoid jargon and clearly define new terms, abbreviations and all variables in equations – do not assume that your readers will know. The thesis must be submitted as a PDF.

#### Thesis content

Any use of generative AI should be clearly described. Please submit a separate cover page where you describe how you used generative AI (if used) for your thesis. Please refer to the Department guidance "Generative AI Tools", which is included for your reference. Any direct use of text or ideas from generative AI should also be referenced properly in your thesis.

Any equations and figures should be integrated into the narrative and serve to enhance the content. Equations may be helpful in precisely introducing aspects of your research, but they should not overwhelm descriptive text, so use them judiciously and avoid lengthy derivations unless they are your own work. Numbering your equations enables you to reference them more easily in the main text. In general, ensure variables are italcised to distinguish them from the main text. To get ideas for effective presentation of equations and figures, look at scientific publications such as textbooks and research journal articles.

You are expected to refer to published scientific literature (e.g. journals articles, textbooks) wherever appropriate. Cite your sources and include a reference section at the end of your thesis, with a consistent style, such as the Harvard or Vancouver reference style. Further guidance is available from the Imperial College library.

Writing a thesis that summarises work that is not your own, or that you published previously, can risk plagiarism. It is easy to accidentally plagiarise in small amounts by too closely paraphrasing a chunk of text or by using a copyrighted figure. Even minor acts of plagiarism can cause offence or lead to serious professional problems. Guidelines on plagiarism can be found on the university webpages: https://www.imperial.ac.uk/admin-services/library/learning-support/plagiarism-awareness/.

If you directly use work from your literature review and project proposal in your theses, it is considered as self-plagiarism, so do not copy and paste your previous work directly into your thesis, unless it is clearly referenced as such. There can be sections similar to those that you previously wrote (for example in your literature review) in which case, clearly indicate what you have done and cite the origins.

## Figures and tables

Give careful thought to presenting your ideas and results as clearly as possible – this will have a big impact on how your thesis is perceived by your assessors. It is generally a good idea to decide on a consistent colour scheme for your different data sets in all your figures making it as easy as possible for your readers to understand what you are trying to convey. If you have collected a lot of raw data, it is often not necessary to plot every observation (these can be included in an appendix if appropriate). Instead, present relevant/representative examples of your raw data, then think of ways to analyse or summarise the information that can be obtained from it, and plot/present that instead. Ensure that your figures are clearly labelled and have appropriate axes with relevant units displayed. Creating diagrams to explain methods, concepts and mechanisms can also help to avoid lengthy or complicated descriptions in the main text, as well as making your thesis easier to

understand. Make sure that the font size of your figures is at least comparable to the font of the main text of your report to aid readability.

Figure captions should clearly and concisely describe the contents of the figure - in general the caption should allow the figure to be comprehensible independently from the main text (unless this would mean the caption is impractically long). All figures should be numbered, and all figures should be referenced in the main text. The figures should be presented in the order that they are referenced in the main text.

Tables can also be an effective way to present information, but in general there is no need to duplicate data in both a table and a figure. Any tables should also be numbered and presented in the order that they are referenced in the main text.

#### Assessment

Your work will receive two marks, one from your supervisory team as set out below and one from an independent marker which are then averaged to give your overall mark. The mark from your supervisory team also assesses your performance in the lab and the independent marker assesses your thesis presentation. Keep in mind that your independent assessor may not be an expert in the subject of your project — so it is very important to make your report comprehensible to a non-expert who is familiar with the general field. Therefore, it is very important that your thesis should be aimed at a scientist who may be familiar with the general area of soft electronics, but not necessarily with the details of your research.

#### Supervisory team:

- Background & Introduction (20 marks)
- Understanding & Analysis (30 marks)
- Quality & Originality of Results (30 marks)
- Performance in the lab (20 marks)

Total (100 marks)

#### Independent marker:

- Background & Introduction (20 marks)
- Understanding & Analysis (30 marks)
- Quality & Originality of Results (30 marks)
- Presentation (20 marks)

Total (100 marks)

#### Percentage criteria:

85-100 Exceptional. Outstanding analysis of the research, its findings and significance showing publication standard in quality and quantity. Evidence of originality, high critical/analytical ability\*\* Competent assessment of the limitations of the research and its significance (putting the work in context). \*\* Analytical = assessing a hypothesis or statement by breaking it down into its elements and examining their inter-relationships and contribution to the whole; cf. Critical = judging a hypothesis or conclusion by examining the validity of the evidence adduced for it.

70-84 Excellent. As for Exceptional, but not fully achieving one of them.

60-69 Very Good. Complete and accurate presentation of research and its results put into context. Demonstrates critical/analytical ability\*\* including an assessment of the limitations of the proposed work and the significance of the research.

55-59 Good. Accurate account and presentation of most of the research work and its context within the scope of relevant literature. Demonstrates critical/analytical ability\*\* including an assessment of the potential limitations of the work and the significance of the research, but with significant errors of interpretation.

50-54 Adequate. Basic account and presentation of the background, experimental procedures, research results and conclusions. Demonstrates some critical/analytical ability\*\* including an assessment of the significance of the research, but with major errors or omissions.

35-49 Unsatisfactory. Confused and incomplete account and presentation of the research, results and conclusions, limited understanding of the significance of the findings. Presence of errors of interpretation or factual mistakes.

20-34 Vague and seriously inadequate account and presentation of the research with substantial omissions and errors. Very poor review of results.

10-19 Mainly incorrect and incompetent report on the research demonstrating only few relevant thoughts.

1-9 Incorrect and incompetent report containing nothing of relevance.

0 Work not handed in. Mark given where the work presented is discovered not to be that of the candidate (plagiarised). Further disciplinary action is usually taken in cases of plagiarism.

#### **Generative AI Tools – Physics Department Guidance**

#### **Background**

Generative Artificial Intelligence (GAI) tools such as ChatGPT, Scribe, GITHub Copilot, etc., are becoming ubiquitous in industry and academia. These tools can help carry out research, increase understanding, and improve output. However, serious risks are involved if misused or used without carefully reviewing the outputs. We outline some general points based on the latest College Guidance at the AI & Education Guidance Hub.

- Al models are powerful and can be used effectively in checking the quality of your written
  work, prompt new ideas, or generate simplified explanations of complex topics to support
  your learning. However, the models display limited success in handling mathematical
  information, scientific evidence, and code. The training of the models is based on limited,
  sometimes stale information. The predictive nature of the Al models means they often
  cannot distinguish between accurate references and fabrications. Therefore, it can often
  return incorrect, irrelevant, or false information.
- Submitting work and assessments created by someone or something else as if it were your own is plagiarism and is a form of cheating. This includes AI-generated content. Please refer to the College's Academic Integrity Policy for more information.
- Increasingly sophisticated "AI detection tools" are available. These can spot the use of GAI
  tools in submitted work. The College will use these tools routinely. To ensure quality
  assurance is maintained, the Department may invite a random selection of students to
  'authenticity interviews' on their submitted assessments.

#### Guidance for all students submitting academic work

Academic integrity has, and always will be, a core principle in academia. The use of AI models is simply another tool that will be held to account against this principle. Remember, it is the student's responsibility to use GAI tools correctly. Follow these rules if you use GAI or other AI tools.

- 1. Verify. Research the statements and find the sources. You must reference sources for the content generated (including whatever GAI tool you used and an outline of your input to it) and verify the GAIs' output (which may be incorrect, irrelevant, or which may itself be presenting the work of others without appropriate acknowledgement). The responsibility for verification of correctness and avoidance of plagiarism is yours alone. If you plagiarise or use unattributed results or content, even unwittingly, you will fall foul of the College's Academic Integrity Policy.
- 2. Review & edit. Any content created with the help of GAI tools must be appropriate. For example, your work must be written in a style appropriate for the intended purpose or learning outcome. Scientific reports should be written in a concise and precise scientific style without making unsupported assertions. If the style or content of any submitted work is inappropriate, you will lose marks. Thus, GAI output may need significant editing before submission. It is particularly easy to spot the use of GAI tools in narrative content. If you have not acknowledged the use of GAI or other AI tools, you will be challenged in these cases.
- 3. Acknowledge. You must declare the use of GAI or other AI tools when producing academic work. All tools will have standard acknowledgement statements you can include to attribute their use. You cannot submit work generated by GAI for assessment and present it as yours. Doing so is against the College's Academic Misconduct Policy. In many cases, even acknowledgement is not sufficient. For example, if the learning objective is to summarise a scientific paper, you cannot simply use GAIs to do this for you.

Al detection tools will be used. Be safe and acknowledge the use of any Al tool.

Please note that the submission deadlines are strictly enforced.

## Students must submit electronic copies of each report in PDF format to Lisa Bushby.

Project Presentation (<u>1 September 2025</u>)
 Students give a final presentation in early September in front of their peers, supervisors and management team. Each academic member will be able to assess the student's work according to the following criteria: learning outcomes, scientific context, structure and delivery of the presentation. A template of the assessment form is given in the appendices. Feedback will be given after the presentations.

#### Research seminars and colloquia

Regular research seminars given by leaders in particular fields are organised throughout the year. Details will be sent via emails.

Attendance is compulsory; however, the lectures are not examinable.

#### **Reading list**

We receive a lot of inquiries regarding relevant reading material, either before the course starts, or during the academic year. While not compulsory, please see the following available at Imperial

library: <u>Device physics and application and materials characterisation physics - 23/24</u> (exlibrisgroup.com)

- Electronic Processes in Organic Crystals by M. Pope & C.E. Swenberg
- Modern Molecular Photochemistry by N. J. Torro
- Molecular Quantum Mechanics by Atkins
- Introduction to Molecular Electronics by M. C. Petty, M. R. Bryce & D. Bloor
- Electronic Structure and Chemistry of Solids by P. A. Cox
- Semiconducting and Metallic Polymers by A.J. Heeger, N.S. Sariciftci, & E.B. Namdas
- Electronic and Optical Properties of Conjugated Polymers by W. Barford
- Principles of Fluorescence Spectroscopy by J.R. Lakowicz
- Solid State Physics by J. R. Hook and H. E. Hall
- Solid State Chemistry and its Applications by A. West
- The Oxford Solid State Basics by S. H. Simon
- Electronic Processes in Organic Semiconductors: An Introduction, by A. Kohler & H. Bassler
- Organic Electronics by S. Forrest

#### 4. Assessment

Within your programme of study, you will have different types of assessment which may include coursework, examinations, timed-remote assessment, presentations, labs or other forms of practical assessment.

#### **Overall assessment**

The MRes in Soft Electronic Materials consists of two parts:

- Lecture courses (33% of the total course mark), consisting of the **components**:
  - core courses (2 modules)
  - advanced and practical skills courses (workshops and themed seminars),
- Project (67% of the total course mark), consisting of the **components**:
  - literature review
  - MRes thesis
  - project presentation.

To pass the MRes, candidates must achieve a mark of 50% or higher in each module of the course.

The examiners nevertheless reserve the right to make adjustments to the procedures given in this section in exceptional circumstances.

Formal feedback to the students in each element is by way of a letter grade indicating the percentage band of their attainment.

The examination marks are reviewed by meetings of the internal assessors (all teaching staff involved in the MRes course) who may suggest that the examiners take into account any special factors or who may provide advice on individual students.

The marks are then forwarded to the external examiner for information. The board of examiners meets in late September to review all the marks and make final recommendations to the College.

<u>Please note that all students will be expected to be in College during the external examiners</u> meeting.

It is traditional to send a copy of the project thesis to the external examiner in advance of this meeting to provide additional information that might assist the decision process.

Deadlines are absolute. The Board of Assessors reserve the right not to mark reports submitted late. Computer difficulties will not be accepted as excuses for late submission. Any extenuating circumstances (eg illness) should be discussed with the Course Director immediately.

#### Lecture courses

The examination of the core and advanced courses is by two written papers. Each will contain both compulsory short questions intended to test the full spectrum of topics taught, and more advanced optional questions.

Draft examination papers are prepared by the lecturer, moderated by a second member of staff and sent in advance to the external examiner who reviews them and suggests changes. After discussion with the course lecturers, these changes are usually incorporated into the final papers.

The exams will be scheduled after all core courses have been completed. The proposed exam dates are:

MRes Exam 1: **14.00-17.00 4 February 2025** 

MRes Exam 2: 14.00-17.00 7 February 2025

Modules 1 and 2 will be assessed 80% by exams and 20% by 30-min group presentations on guest lectures.

These will be assessed by a 30 min group presentation. You will be given research paper(s) to be read and presented. Groups will be expected to carryout in-depth background research on the given subject and to host a discussion on the science presented in the paper.

The total mark for each core course module is converted to a percentage, with each module representing 16.5% of the overall final mark.

#### **Project**

The project is assessed as follows:

- the literature review and project plan, which will be submitted at the end of the autumn term (11% of total mark).
- a final presentation and a written thesis, both in September (56% of total mark).

The project thesis and literature review are marked by both main supervisors who complete the report mark sheet in the appendices. In addition, the supervisors are asked to add notes on the technical aspects of the project, conduct in the laboratory, the level of supervision required and any other factors that they feel should be made available to the examiners. An independent member of staff marks the reports as well. The reports technical marks are calculated as the average of the two supervisors' marks and are moderated by the independent assessor's mark.

#### Requirements for passing the MRes and calculating the final mark

The above sections have indicated how percentage marks are assigned for the course modules. The following table indicates their respective percentage weightings, used in calculating the provisional final mark.

Module 1 Written Examination (80%) and Group	
Presentation (20%)	$M_1$
Module 2 Written Examination (80%) and Group	
Presentation (20%)	$M_2$
Module 3 Literature review	$M_3$
Module 4 Project presentation and thesis	M <sub>4</sub>

The final mark, M<sub>f</sub> is based on the weighting of ECTS, and is therefore computed as:

 $M_f = 15/90M_1 + 15/90M_2 + 10/90M_2 + 50/90M_2$ 

To obtain a Pass, students must achieve 50% in each of the four modules individually (which automatically means achieving a programme overall weighted average of 50%).

To obtain a Merit, students must achieve 50% in each of the four modules individually, and achieve 60% overall, and achieve 60% in the research project module.

To obtain a Distinction, students must achieve 50% in each of the four modules individually, and achieve 70% overall, and achieve 70% in the research project module.

The Examiners reserve the right to change these thresholds in exceptional circumstances.

Marks are collated by the Course Director and reviewed internally before being sent to the external examiner for external inspection. An examiners' meeting is held in September at which the final marks are agreed. The final marks are then sent to the College administration.

Imperial has policies and procedures to the support the setting, sitting, marking and moderation of all assessment. These can be found within the Academic Regulations, Policies and Procedures at:

www.imperial.ac.uk/about/governance/academic-governance/regulations/

www.imperial.ac.uk/about/governance/academic-governance/academic-policy/exams-and-

## **Instruction to Candidates for Examinations**

assessment/

When taking examinations, students must ensure they follow the relevant instructions and guidance provided to them. In addition to the Instructions for Candidates, they must adhere to the specific instructions for each exam as provided by their programme team.

www.imperial.ac.uk/about/governance/academic-governance/regul	ations/
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Instructions for exam candidates can be found here:

www.imperial.ac.uk/media/imperial-college/administration-and-supportservices/registry/academic-governance/public/academic-policy/exam-arrangements-and-resits/Instructions-to-candidates-for-examinations.pdf

## **Academic Integrity and Academic Misconduct**

As your programme of study continues, you will be taught the concept of academic integrity and how you can ensure that any work that you complete now, or in the future, conforms to these principles. This means that your work acknowledges the ideas and results of others, that it is conducted in an ethical way, and that it is free from plagiarism. Academic integrity is fundamental to learning, teaching and research and it is important to understand what it means for you and the international community of research that you are joining.

Academic misconduct is the attempt to gain an academic advantage, whether intentionally or unintentionally, in any piece of assessment submitted to the university. This includes plagiarism, self-plagiarism, collusion, exam offences or dishonest practice. Full details of the policy can be found at:

www.imperial.ac.uk/about/governance/academic-governance/academic-policy/exams-and-assessment/

Definitions of the main forms of academic misconduct can be found below:

## **Plagiarism**

Plagiarism is the presentation of another person's thoughts, words, images, research or diagrams as though they were your own. Another form of plagiarism is self-plagiarism, which involves using your own prior work without acknowledging its reuse. Plagiarism may be intentional, by deliberately trying to use another person's work by disguising it or not citing the source, or unintentional where citation and/or referencing is incorrect.

Plagiarism must be avoided, with particular care on coursework, essays, reports and projects written in your own time but also in open and closed book written examinations. You can support your understanding of proper referencing and citation by using the resources available from the university such as the Library Services learning support webpages at:

www.imperial.ac.uk/admin-services/library/learning-support/plagiarism-awareness/

For group work, all members have responsibility for the integrity of the work submitted. Therefore, if plagiarism (or another form of academic misconduct) is proven, all group members may be liable for any penalty imposed.

Imperial requires you to complete mandatory training on plagiarism awareness. You can access this training online via the Early Career Researcher Institute's website:

www.imperial.ac.uk/students/academic-support/graduate-school/professional-development/masters-students/plagiarism-online/

TurnitinUK is an online text matching service which assists staff in detecting possible plagiarism. The system enables institutions and staff to compare students' work with a vast database of electronic sources. Your programme team will explain how it is used in your programme.

www.imperial.ac.uk/admin-services/ict/self-service/digital-education-services/digital-education-platforms/turnitin/turnitin-for-students/

#### **Collusion**

This is the term used for work that has been conducted by more than one individual, where this has not been permitted in the assessment brief. Where it is alleged that there has been collusion, all

parties will be investigated initially under the Academic Misconduct procedure. Please be aware that this includes working with others in or outside the Imperial community, not just students on your programme.

You should note that whilst Imperial encourages students to support each other in their studies you should be careful to ensure that you do not go beyond the assessment brief with regards to individual work, always acknowledge the contributions of others in your work, and do not leave yourself open to allegations that you have supplied answers to enable another student to commit academic misconduct.

#### **Exam offences**

Exam offences fall into two categories. These are offences that may be disruptive in the exam venue or those that are considered an attempt to gain an academic advantage. Examples of disruptive behaviour includes causing a disturbance in the exam room, having an electronic device that has not been fully turned off or talking in the exam room. Behaviour that may considered an attempt to gain an academic advantage includes bringing unauthorised material into an exam (such as notes, unauthorised books or other material), attempting to communicate with others apart from the invigilator, or trying to remove examination material without permission. You must ensure that you follow all reasonable instructions of the invigilators.

## **Dishonest practice**

This is the most serious category under the procedure. Examples of dishonest practice include bribery, contract cheating, purchasing essays or other materials from other sources (which is now illegal in the UK) or other individual to submit as your own, taking an exam for someone else or getting someone else to take an exam for you, attempting to access exam papers before the exam, making a false claim for mitigating circumstances or providing fraudulent evidence, falsifying documentation or signatures in relation to assessment or a claim for mitigating circumstances.

## 5. Board of Examiners

#### **Board of Examiners**

- Prof Ji-Seon Kim, MRes Course Director
- Dr Piers Barnes, MRes Course Advisor
- all lecturers on SEM-MRes Course

#### **External Examiners**

London Dr Oliver Fenwick, Queen Mary University London

An External Examiner is normally an experienced member of academic staff from another Higher Education Institution, that acts as a critical friend to the staff delivering your programme of study. For some programmes, one of the External Examiners could be an industry expert to provide the professional expertise needed to support the programme. External examining is an essential part of Imperial's quality assurance and enhancement process, ensuring that academic standards are maintained. The knowledgeable and independent views of external examiners are invaluable in certifying that the university's awards are appropriate, of comparable standard to the rest of the sector, as well as highlighting good practice and/or potential areas of enhancement.

During your programme you may be invited to meet your external examiners to discuss how you have found the programme. It is not appropriate however, for you to seek to submit complaints or representations directly to external examiners or to seek to influence them other than by giving feedback in a meeting. Inappropriate communication towards an examiner would make you liable for disciplinary action. If there is a specific issue that needs to be resolved, please see the Student Complaints Policy and Procedure.

A university summary of External Examiners reports from the previous academic year can be found here:

www.imperial.ac.uk/about/governance/academic-governance/academic-policy/external-examining/

Please note that you will need to be logged in to your Imperial account to access the summary reports.

The individual External Examiner reports for your programme/department are available from your department.

## Location and facilities

Imperial has a number of campuses in London and the South-East. All have excellent travel links and are easily accessible via public transport.

#### Your main location(s) of study will be:

South Kensington and White City Campuses

South Kensington Campus (5 hot desks 701, Huxley Building)

#### **Facilities**

Computer access and printing is available at Blackett Laboratory, level 3 computing suite and the Abdus Salam Central Library. The department's postgraduate office is located at level 3, Blackett Laboratory.

If you notice any facility defects or maintenance issues, please contact the Customer Services Centre (CSC):

www.imperial.ac.uk/estates-facilities/customer-services-centre/

#### **Library Services**

The Abdus Salam Library at South Kensington is open 24 hours for study space, and further space is available to all students in GoStudy on levels 4 and 5 of the Chemistry Building. Further study space is available on level 3 of the Sherfield Building.

Make sure you find out who your subject librarian is as they'll be able to help you find books and online resources for your assignments. Also, don't forget to check out the library workshops and other campus libraries for access to specialist medicine and life sciences resources. You can borrow up to 40 books and, whether you're working on or off site, you'll be able to access e-books, e-journals and databases from their collection of almost 567,000 titles. If they don't have what you need, they can get it for you, simply ask them to buy it or request a copy through their free Document Delivery service.

For any questions library staff will be happy to help, simply chat with them online or contact them via email, phone or social media, just check the website for details:

www.imperial.ac.uk/library

#### **Shuttle bus**

A free shuttle bus runs between our South Kensington, White City and Hammersmith Campuses on weekdays. Seats are available on a first-come, first-served basis. You need to show your Imperial ID card to board. You can download the timetable and check the latest service updates at:

www.imperial.ac.uk/estates-facilities/travel/shuttle-bus

#### Maps

Campus maps and travel directions are available at:

www.imperial.ac.uk/visit/campuses

#### **Accessibility**

Information about the accessibility of our South Kensington Campus is available online through the AccessAble access guides:



www.accessable.co.uk/organisations/imperial-college-london

#### **Smoke-Free Policy**

All Imperial campuses and properties are smoke-free. This means that smoking and the use of e-cigarettes, including vapes, by staff, students or visitors is not permitted on or within 20 metres of Imperial. The policy covers all university properties, including student accommodation and sports grounds.



www.imperial.ac.uk/smoke-free

#### SafeZone

SafeZone is an Imperial app through which you can quickly and directly contact the Community Safety and Security team whenever you need them. Whether you're in an emergency situation, in need of First Aid or want to report an incident on campus, SafeZone allows you to be immediately put in touch with a member of our Community Safety and Security team and, at the touch of a button, can share your location and personal profile so that they can respond quickly and effectively to your specific needs. It also allows the entire Imperial community to stay



informed in the event of a major incident in London or wherever you may be in the world. Safezone also provides information on other services, such as real-time updates on the university shuttle bus.

SafeZone is optional to register for and is now available to download on the Apple and Android App stores. Visit <a href="www.imperial.ac.uk/admin-services/security/safezone/">www.imperial.ac.uk/admin-services/security/safezone/</a> for more details about SafeZone.

All existing phone numbers for the Community Safety and Security team are still operational. In the event of an emergency, you can still call 4444 from any internal College phone. In the event of a wider incident in London, you can now also call 0300 131 4444, Imperial's Emergency Recorded Message Line, which will point you in the direction of up-to-date information and advice.

## **Placements**

Imperial defines a placement as:

"work experience, assessed project work, a period of course-based study or a period of research (for which academic credit is awarded and/or where the student remains subject to Imperial student regulations during the relevant period) and where there is a transfer of direct supervision of the student to a third party (i.e. where a member of staff at the third party acts as the day-to-day supervisor/manager) for a period of two weeks or more."

Academic departments are responsible for managing any study placement or work placement which forms part of your degree programme. It is expected that you will contribute to the process of

planning your placement. For guidance on this, see the university's Placement and Learning Policy and associated good practice: www.imperial.ac.uk/about/governance/academic-governance/academic-policy/placementlearning The Careers Service is available to provide students with additional support in networking to find their own placement opportunities: www.imperial.ac.uk/careers/applications-and-interviews/ For general information on undertaking a study or work placement visit the Placements website: www.imperial.ac.uk/placements If you are considering/planning a placement outside the UK, you should also refer to the Placement Abroad Handbook:

www.imperial.ac.uk/placements/information-for-imperial-college-students

## 8. Working while studying

If you are studying full time, Imperial recommends that you do not work part-time during term time. If this is unavoidable, we advise you to work no more than 10–15 hours per week, which should be principally at weekends and not within normal university working hours.

Working in excess of these hours could impact adversely on your studies or health.

If you are here on a Student Route visa you can work no more than 20 hours a week during term time. Some sponsors may not permit you to take up work outside your studies and others may specify a limit.

<u>www.imperial.ac.uk/students/international-students/visas-and-immigration/working-in-the-uk/work-rules-during-your-studies/?</u>

If you are enrolled on a one-year full-time postgraduate programme, you are permitted to work full-time during the university Christmas and Easter closure period, as well as after the official course end date. Please note that one-year full-time postgraduate students are not considered on vacation during the summer months. You can only work full-time during the summer if you are undertaking an assessed work placements that is a formal part of your programme.

www.imperial.ac.uk/students/international-students/visas-and-immigration/working-in-the-uk/work-rules-during-your-studies/

If you are considering part-time work during term time you are strongly advised to discuss this with your supervisor or Personal/Senior Personal Postgraduate Tutor (see Wellbeing, Support and Advice section for more information). If you are on a Student Route visa you should also seek advice from the International Student Support team regarding visa limitations on employment.

The university's Board of Examiners will not normally consider as mitigating circumstances any negative impact that part-time work during term-time may have had on your performance in examinations or in other assessed work. Examinations or vivas cannot be rescheduled to accommodate your part-time working arrangements.

# 8. Health and Safety

Keeping you safe is a top priority for us. Imperial still encourages students to wear face coverings in crowded areas, to get fully vaccinated, to cover your coughs and sneezes, and to respect others' personal space. All staff and students are advised to stay at home if you are feeling ill or have any symptoms of respiratory disease.

The latest Imperial guidance to students can be seen at:

www.imperial.ac.uk/about/covid-19/

The Imperial Health and Safety Policy can be found at:

www.imperial.ac.uk/safety/safety-by-topic/safety-management/health-and-safety-policy-statement/

Your Departmental safety contact is:

Stefan Hoyle
Room 900, Blackett Laboratory

You may be required to complete inductions and attend training sessions to safely complete this course.

There is also a wide range of <u>eLearning micro-learning modules</u> focused on specialised topics and designed to raise awareness of hazards and control measures for working safely in hazardous areas (i.e., laboratories and workshops) across the university.

# **Imperial Safety Department**

07872 850018

fonssafety@imperial.ac.uk

The <u>Safety Department</u> offers a range of <u>specialist advice</u> on all aspects of safety. This includes anything which you feel might affect you directly, or which may be associated with teaching, research or support service activities.

The university's activities range from the use of hazardous materials (biological agents, chemicals, cryogens, gases and ionising/non-ionising radiation) to field work, heavy or awkward lifting and driving.

All of Imperial's activities are covered by general health and safety regulations, but higher risk activities will have additional requirements.

The Safety Department helps departments and individuals ensure effective safety management systems are in place throughout the university to comply with specific legal requirements.

Sometimes the management systems fail, and an accident or a near-miss incident arises; it is important that we learn lessons from such situations to prevent recurrence and the Safety Department can support such investigations. All accidents and incidents should be reported online at:

www.imperial.ac.uk/safety/safety-by-topic/accidents--incidents/

To report concerns or to ask for advice you should contact your programme director, academic supervisor or departmental safety officer in the first instance. You may also contact the <u>Safety Department</u> directly.

# **Occupational Health requirements**

Imperial's Occupational Health Service provides services to:

- protect health at work
- assess and advise on fitness for work
- ensure that health issues are effectively managed

The Service promotes and supports a culture where the physical and psychological health of staff, students and others involved in the university is respected, protected and improved whilst at work.

www.imperial.ac.uk/occupational-health

# 9. University Policies and Procedures

#### **Academic Regulations**

All registered students of Imperial are subject to the university Academic Regulations. The relevant set of regulations will depend on your programme and year of entry, please see our Regulations webpage to determine which apply to you:

www.imperial.ac.uk/about/governance/academic-governance/regulations
www.imperial.ac.uk/students/terms-and-conditions

# **Academic Feedback Policy**

We are committed in providing you with timely and appropriate feedback on your academic progress and achievement, enabling you to reflect on your academic progress. During your study you will receive different methods of feedback according to assessment type, discipline, level of study and your individual need. Further guidance on the Policy of Academic Feedback can be found on the Academic Governance website:

www.imperial.ac.uk/media/imperial-college/administration-and-support-
services/registry/academic-governance/public/academic-policy/academic-feedback/Academic-
feedback-policy-for-taught-programmes.pdf

Insert departmental specific feedback policy with a table of assessment and feedback deadlines and what format feedback will take. Please also make it clear which assessments students can expect to receive provisional marks.

Module	Assessment	Overall %	Feedback	Feedback format
	format	contribution	deadline	
Module 1:	80% written	16.666%	End of	Letter grade
Fundamentals of	examination, 20%		March 2025	
organic	group			
semiconductors	presentation			
and materials				
synthesis and				
processing				
Module 2: Device	80% written	16.666%	End of	Letter grade
physics and	examination, 20%		March 2025	
materials	group			
characterisation	presentation			
Module 3:	100% written	11.111%	End of	Written
Literature review	report		February	comments from
			2025	supervisor,
				independent

				marker and letter
				grade
Module 4: Research	10% oral	55.556%	End of	Letter grade
project report and	presentation, 90%		September	
oral presentation	written project		2025	
	report			

Please note that your examination scripts once completed belong to the university under the General Data Protection Regulations (GDPR). Please see the Imperial GDPR webpages for further information at:

www.imperial.ac.uk/admin-services/secretariat/policies-and-guidance/guidance/guide-2---exam-records/

#### **Provisional Marks Guidance**

Provisional marks are agreed marks that have yet to be ratified by the Board of Examiners. These results are provisional and are subject to change by the Board of Examiners. The release of provisional marks is permitted except in certain circumstances. Further information can be found in the Guidelines for Issuing Provisional Marks to Students on Taught Programmes:

www.imperial.ac.uk/media/imperial-college/administration-and-supportservices/registry/academic-governance/public/academic-policy/marking-andmoderation/Guidelines-for-issuing-provisional-marks-to-students-on-taught-programmes.pdf

#### **Late Submission Policy**

You are responsible for ensuring that you submit your assessments (including timed remote assessments) in the correct format and by the published deadline (date and time). Any piece of assessed work which is submitted beyond the published deadline (date and time) would be classed as a late submission and will incur a penalty (a cap at the pass mark, or it is classed as a fail). Further guidance on Late Submission of Assessments can be found on the Academic Governance website:

www.imperial.ac.uk/media/imperial-college/administration-and-supportservices/registry/academic-governance/public/academic-policy/marking-and-moderation/Late-submission-Policy.pdf

If you submit late due to mitigating circumstances, the cap on your mark may be lifted if a claim for mitigating circumstances is accepted. Please see below.

### **Mitigating Circumstances**

During your studies you may be affected by sudden or unforeseen circumstances. You should always contact your Personal Tutor for advice and support. If this happens at the time of, or immediately preceding, your assessments you may be able to make a claim for mitigating circumstances. If successful this claim enables the Board of Examiners when reviewing your marks at the end of the

year to have greater discretion with regards to offering repeat attempts (either capped or uncapped), a repeat year, or with your progression or final classification. Please note, the Board are not permitted to amend the marks that you were awarded, only to take your claim into account when making decisions.

All claims must be supported by independent evidence and submitted within 10 working days of the assessment deadline. Any claim made after this deadline is likely to be rejected unless there is a good reason (such as you were still unwell) until the point of submitting the claim. Details of the university's Mitigating Circumstances procedure can be found under the Mitigating Circumstances tab on the page below:

www.imperial.ac.uk/about/governance/academic-governance/academic-policy/exams-and-assessment/

Through the procedure you may also be able to request an extension deadline to some forms of assessment. Wherever possible it is expected that this is used as it will enable to you complete your studies within the same academic year (rather than over the summer holiday or in the next year).

To submit a claim for mitigating circumstances, you will be required to send a completed mitigating circumstances form to the physics departmental administrator phpgt@imperial.ac.uk setting out your circumstances so they can be considered by the physics mitigating circumstances committee who will make a decision on your case.

Support for ongoing or long-term conditions, or for registered disabilities would not normally fall under the remit of mitigating circumstances and students should be supported through their studies with additional examination arrangements. More details can be found at:

www.imperial.ac.uk/disability-advisory-service/current-students/support-available/adjustments-and-support/

#### **Academic Misconduct Policy and Procedures**

As has been highlighted under the Academic Integrity section, it is important that you learn how to properly attribute and acknowledge the work, data and ideas of others. Any proven form of academic misconduct is subject to penalties as outlined in the university's Misconduct Policy and Procedures.

www.imperial.ac.uk/about/governance/academic-governance/academic-policy/exams-and-assessment/

#### **Unsatisfactory Engagement**

Unfortunately, for a variety of reasons, sometimes students struggle to meet the university's expectations with regards to their engagement with their studies. Imperial has a process to identify and support students by reaffirming these expectations with an action plan. If a student does not engage satisfactorily with these supportive measures, they can be withdrawn from their studies. The full details of this process, and the appeals procedure relating to it can be found at:

www.imperial.ac.uk/ab	out/governance	/academic-governa	ance/academic-p	olicy/complaints-
appeals-and-discipline				

# **Fitness to Study**

Imperial expects students to participate within the university community, such as by fully engaging and studying to the academic level required and working and living cooperatively. If there are concerns that a student is unable to engage as expected, due to an underlying physical and/or mental health difficulty, the university has a process to ensure that decisions about a students' ability to study are made through a supportive, timely and transparent process which operates in the best interests of the student:

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#### **Mutual Expectations**

The mutual expectations document provides a suggested starter list of expectations that master's students and their project supervisors might expect from each other. It is designed to facilitate conversations to establish effective partnerships and it is recommended that the document is discussed at the first meeting between a main project supervisor and a new student. It should be noted that this is not exhaustive, and that departments may have variations in roles and responsibilities; supervisors should be aware of any such variations and will feed this into their discussions with students. Further, it is recognised that supervisors may not always be best placed to meet all the expectations laid out in the document, but should be aware of who, in their department, can. Students and project supervisors are encouraged to discuss, tailor and personalise the document further to suit. It is also recommended that students and their project supervisors revisit the document throughout the duration of the project.

The Mutual Expectations document is available here:

www.bb.imperial.ac.uk/bbcswebdav/xid-12494962\_1

### **Academic Appeals Procedure**

We have rigorous processes and procedures in place to ensure assessments are conducted with fairness and consistency, claims for mitigating circumstances have been considered reasonably and in line with the regulations of the university, and that the decisions of the Boards of Examiners maintain the integrity of our academic awards. Should you believe that you have grounds to appeal these decisions, we have laid out clear and consistent procedures through which appeals can be investigated and considered:

www.imperial.ac.uk/about/governance/academic-governance/academic-policy/complaints-appeals-and-discipline

The <u>ICU Advice service</u> can help you with understanding this policy and supporting you through the process.

#### **Arithmetic Marks Check**

If you consider that there may have been an error in the adding up of your marks, you may request an arithmetic mark check. Please note that this must be requested within 10 working days of the official notification of your results from the Assessment Records team in Registry. You may not request marks check for a previous year of study. Please note that a marks check is not a remark of your work, but an administrative check that the marks have been accurately recorded.

### **Student Complaints**

student.complaints@imperial.ac.uk

Imperial strives to ensure that all students are well supported in their studies and receive a good experience of their programme and the wider university activities. If you feel that your experience has not lived up to these expectations Imperial has an agreed Student Complaints process through which your concern can be investigated and considered.

If you have any concerns about your experience at Imperial and have been unable to address these informally, you should contact Student Complaints who can provide advice about what is the appropriate way to seek to resolve this at:

<u>www.imperial.ac.uk/about/governance/academic-governance/academic-policy/complaints-appeals-and-discipline</u>
Student Disciplinary Procedure Imperial has the right to investigate any allegation of misconduct against a student and may take disciplinary action where it decides, on the balance of probabilities, that a breach of the Student Code of Conduct has been committed. The general principles of the Student Disciplinary Procedure are available on the university website:
www.imperial.ac.uk/about/governance/academic-governance/academic-policy/complaints-appeals-and-discipline/
Intellectual Property Rights Policy Imperial's Intellectual Property (IP) policy governs the ownership and management of universities Intellectual Property and its College's discretionary Reward to Inventors Scheme. Further guidance on the Imperial Intellectual Property Rights Policy is available on the university website:
www.imperial.ac.uk/research-and-innovation/about-imperial-research/research-integrity/ip/
Further information about the Imperial Enterprise Lab can be found at:
www.imperial.ac.uk/students/enterprising-students/

# **Use of IT Facilities**

View the Conditions of Use of IT Facilities:

www.imperial.ac.uk/admin-services/ict/self-service/computers-printing/conditions-of-use-of-
<u>it-resources/</u>

# **General Data Protection Regulation (GDPR)**

All staff and students who work with personal data are responsible for complying with GDPR. Imperial will provide support and guidance, but you do have a personal responsibility to comply.

In line with the above please see the university's Privacy Notice for Students which form part of the Terms and Conditions of registration with Imperial.

www.imperial.ac.uk/media/imperial-college/administration-and-support-
services/registry/academic-governance/public/academic-policy/admissions/Privacy-Notice-
for-Students-and-Prospective-Students.pdf

#### 10. Wellbeing, support and advice

# In your department

Your department has a system of academic and pastoral care in place to make sure you have access to the appropriate support throughout your time at Imperial.

#### **Your Personal Tutor**

Your Personal Tutor is your first point of contact for pastoral support and advice. You can arrange to have a meeting with them at any time during your studies (although most Personal Tutors will have set office hours or may require you to make an appointment).

If necessary, they will direct you to an appropriate source of support.



Dr Piers Barnes (MRes Course Cohort Mentor: academic)



1002 Huxley Building



piers.barnes@imperial.ac.uk



Dr Lisa Bushby (MRes Course Cohort Mentor: non-academic)



903a Huxley Building



l.bushby@imperial.ac.uk

#### **Departmental Disability Officers**

Departmental Disability Officers are the first point of contact in your department for issues around disability. They can apply for additional exam arrangements on your behalf and will facilitate support within your department.

More information on Departmental Disability Officers is available at:



www.imperial.ac.uk/disability-advisory-service/current-students/supportavailable/departmental-disability-officers/

More information about how to request additional arrangements for exams if you have a disability is available at:



www.imperial.ac.uk/student-records-and-data/for-current-students/undergraduate-andtaught-postgraduate/exams-assessments-and-regulations/additional-exam-arrangements-inrespect-of-disability

#### Postgraduate coaching

As well as professional development opportunities, the Early Career Researcher Institute has a dedicated coaching programme designed to help you through challenging times. The Postgraduate student coaching programme has been established to provide an opportunity to talk, independently from your academic department, about challenges you may be experiencing during the course of

your studies. The programme primarily focuses on building effective working relationships and there may be other self-development issues that you can explore with a trained coach.

<u>www.imperial.ac.uk/students/academic-support/graduate-school/wellbeing-and-support/coaching/</u>

# **Attributes and Aspiration Short Course**

Attributes and Aspirations (AA) is an online short course that supports you to develop career planning and transferable skills. AA is flexible, has no assessments and can be accessed whenever you need it allowing you to proactively plan for your future. You can also use AA to develop key skills such as critical thinking, problem solving and time management. These will help you be a better student and are essential for your future - whether you choose to move to further study or to a job in industry.

AA is designed specifically for Imperial master's students. The Postgraduate Education Team worked with the Careers Service to design AA so that it works for you. We researched and talked to organisations that hire master's students, PhD course coordinators and alumni to make sure the skills and techniques taught in AA are those that you really need for your professional future. For further information, please see the AA web pages.

www.imperial.ac.uk/students/attributes-and-aspirations

#### **Your Union**

All Imperial students automatically become members of Imperial College Union when they register at the university. The Union provides a range of independent support.

#### **Imperial College Union Advice Service**

The ICU Advice Service delivers free, confidential, and impartial advice covering academic issues, complaints and disciplinaries, College accommodation, and internal and external signposting. Contact <a href="the ICU Advice Service">the ICU Advice Service</a> and complete the registration form to speak with a member of the team.

www.imperialcollegeunion.org/advice

#### Student representatives

Imperial College Union operates two Representation Networks of over 600 elected student representatives – the Academic Representation Network and the Wellbeing Representation Network. Reps represent the voice of students and can direct you to internal and external support services. The Union's Liberation Officers also work to make sure that the views of under-represented and interest groups are heard at Imperial.

If you have any feedback about issues in your department relating to academic or wellbeing issues, you can speak to one of your student representatives.

www.imperialcollegeunion.org/your-union/your-representatives/a-
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#### **Officer Trustees**

The Union is led by a team of Officer Trustees who are elected every year by the students of Imperial. They take a year out of their studies and work full-time at the Union, representing the voices of students in the Union, the university and the wider community.

The Officer Trustees represent students in a variety of roles, including Education, Welfare, Finance & Service and Clubs & Societies. These elected students are here to represent your views as a student body do make sure you get in touch with them if there's something you would like to discuss or change.

#### **Student Hub**

The Student Hub brings together information on many of Imperial's key administrative services in one easily accessible place. The staff in the Hub can provide general advice and information on a wide range of aspects of life at Imperial, including your student records and enrolment (letter of registration for proof of your student status, transcripts and awards), fees and finance, accommodation and international student queries. If your query needs specialist guidance, the Hub team will sign-post you to other university student support services as appropriate.

The Hub is on hand to answer your questions in person (at our desks in South Kensington and White City), by email, phone or online through the ASK Student Hub service.

www.imperial.ac.uk	<u>/student-hub</u>

#### **Student Support Zone**

Student Support Zone has lots of information about the resources available at Imperial and beyond to help you to stay healthy and happy. It's a great place to start when you're looking for some support – it covers advice about housing and money, health, wellbeing and maintaining a good work-life balance, and provides the details of who you can contact if you need some extra support.

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# **Centre for Academic English**

The goal of the Centre for Academic English is to ensure you develop both the ability and the confidence to excel as a communicator on your degree programme as well as in the workplace. From the very beginning of your degree and all the way through, we're here to help you realise your potential.

To achieve this, we've designed a flexible academic STEMM communication programme enabling you to create your own personalised learning pathway. As you build your pathway, you'll have the freedom to select the resources you need wherever you need them. These resources are the result

of close collaborations with departments and so will meet your communication needs for Imperial written and spoken course assignments.

To find out more about what is available for you, visit the Centre for Academic English website.

Centre for Academic English

Level 3, Sherfield Building, South Kensington Campus



english@imperial.ac.uk

www.imperial.ac.uk/academic-english

# **Useful support contacts**

#### Health and wellbeing

If you have moved home to take up your place at Imperial, you will need to register with a new doctor (also known as a General Practitioner or GP) so that you can access NHS healthcare. It's important that you register with a doctor soon after you arrive – don't wait until you are sick, as this could delay your access to treatment.

#### **Imperial College Health Centre**



40 Prince's Gardens, South Kensington Campus



020 7584 6301



imperialcollege.hc@nhs.net



www.imperialcollegehealthcentre.co.uk

#### **Imperial College Dental Centre**



Prince's Gardens, South Kensington Campus



020 7589 6623



www.imperialcollegedental.co.uk

### **Student Counselling and Mental Health Advice Service**



020 7594 9637



counselling@imperial.ac.uk

www.imperial.ac.uk/counselling

### **Multi-Faith Chaplaincy Service**



15 Prince's Gardens, South Kensington Campus



chaplaincy@imperial.ac.uk



www.imperial.ac.uk/chaplaincy

_	pility Advisory Service
Ó	Room 566, Level 5, Sherfield Building, South Kensington Campus
6	020 7594 9755
<b>\rightarrow</b>	disabilities@imperial.ac.uk
	www.imperial.ac.uk/disability-advisory-service
Inter	national Student Support
	020 7594 8040
	www.imperial.ac.uk/students/international-students/
Care	ers Service
V	Level 5, Sherfield Building, South Kensington Campus
	020 7594 8024
<del>_</del>	careers@imperial.ac.uk
	www.imperial.ac.uk/careers
Informathe State	mmodation mation and guidance around private housing and private halls for PG students is available from tudent Accommodation Office. Online you can find a Private Housing Masterclass that guides hrough each step of your private housing search. The team also hosts private housing events, ups and contract-checking services.
Q	Level 3, Sherfield Building, South Kensington Campus 020 7594 3300
<b></b>	accommodation@imperial.ac.uk
	www.imperial.ac.uk/students/accommodation/prospective/pg/
	www.imperial.ac.uk/students/accommodation/private-accommodation/
	nd software ervice Desk
Q	Abdus Salam Library, South Kensington Campus
2	020 7594 9000
	www.imperial.ac.uk/ict/service-desk
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 $\underline{www.imperial.ac.uk/admin-services/ict/self-service/computers-printing/devices-and-printin$ 

software/

#### 11. **Student Administration**

The Student Administration team are responsible for the administration and maintenance of the student records for all students studying at Imperial. This includes enrolments, programme transfers, interruption of studies, withdrawals and processing of examination entry for research degree students. The team also use this information to fulfil reporting duties to the Student Loans Company and Transport for London, as well as other external bodies.

The team are responsible for the processing of student results and awards on the student record system as well as the production and distribution of academic transcripts and certificates of award. The 'My Documents' online portal allows you to access your documents, including proof of enrolment and award documentation. You can then digitally share these documents with third parties such as an employer or university.

Each document has a unique QR code with the official university watermark, making it easier for employers and others to verify your credentials. This online document sharing is a legitimate service, introduced and authorised by Imperial.

We would like to encourage you to use this online service in place of paper-based documentation. You can access the 'My Documents' portal here:



www.imperial.ac.uk/student-records-and-data/for-current-students/request-an-officialdocument/

#### **Student Records**



+44 (0)20 7594 7268



<u>student.records@imperial.ac.uk</u>

# **Degree Certificates**



+44 (0)20 7594 7267



certificates@imperial.ac.uk

#### 12. Work-life balance

The pace and intensity of study at Imperial can be demanding so it's important to find time for outside interests.

# **Imperial College Union**

The Union's range of 360+ student-led clubs, societies and projects is one of the largest of any UK university, opening up lots of ways for you to enjoy your downtime.

www.imperialcollegeunion.org/about-us

www.imperialcollegeunion.org/activities/a-to-z

# **Move Imperial**

Imperial has a wide range of sports and activities on offer that cater for all experience levels and abilities. We have a recreational activity offer, competitive sports teams and an elite sport programme. We are dedicated to ensuring we have a diverse, inclusive and exciting offer for all.

More information about Imperial student memberships and updates to our services can be found at:

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	٦.	vww.imperial.ac.uk/ethos/memberships/students/
		vww.imperial.ac.uk/ethos/memberships/students/
/		the managed and certos, members in ps, seadenes,

For an annual fee you will get use of the gym and swimming facilities on our campuses. More information about Imperial student memberships and updates to our services can be found at:

www.im	peria	l.ac.ul	k/s	port

We have a huge collection of online resources, home workout videos, healthy recipes and playlists available to all as part of our Move More campaign, more information can be found at:

www.imperial.ac.uk/sport/get-active/move-more-programme/

### 13. Student feedback and representation

Imperial and Imperial College Union are committed to continually improving your education and wider experience and a key part of this is your feedback. Feedback is thoroughly discussed by your student representatives and staff.

#### **Student representation**

Student Representatives are recruited from every department to gather feedback from students to discuss with staff. More information about the role, and instructions on how to become an academic representative, are available on the Imperial College Union website.

www.imperialcollegeunion.org/representation/a-to-z

#### **Staff-Student Committee**

Staff-Student Committees are designed to strengthen understanding and improve the flow of communication between staff and students and, through open dialogue, promote high standards of education and training, in a co-operative and constructive atmosphere. Imperial good practice guidelines for staff-student committees are available here:

www.imperial.ac.uk/about/governance/academic-governance/academic-policy/student-feedback

#### **Physics Postgraduate Masters Committee (PMC)**

The membership of the PMC consists of the Programme Organisers, the student representatives for each masters programme and the Directors of Postgraduate Studies and of Undergraduate Studies. The PMC typically meets twice a year. Each Masters programme must elected a student representative early in the autumn term to serve on the PMC. Their role is to inform the PMC of the concerns of the students and to assist in implementing any changes proposed.

As well as the formal monitoring system, students are encouraged to raise any concerns with the Programme Organiser as they arise.

# 14. Student Surveys

Your feedback is important to your department, university and Imperial College Union. Whilst there are a variety of ways to give your feedback on your university experience, the following surveys give you regular opportunities to make your voice heard:

### • Module Evaluation Questionnaire (MEQ)

The MEQ is your chance to tell us about the modules you have attended. The questionnaire is open to students across all years of study and runs at the end of the autumn, spring and summer terms.

The Union's "You Said, We Did" campaign shows you some of the changes made as a result of survey feedback:

If you would like to know more about any of these surveys or see the results from previous surveys, please visit:

www.imperial.ac.uk/students/academic-support/student-surveys/pg-student-surveys

# 15. And finally

#### **Alumni services**

When you graduate you will be part of a lifelong community of over 250,000 alumni, with access to a range of exclusive benefits including:

- discounts on further study at Imperial and at Imperial College Business School
- an alumni email address
- networking events
- Library membership and access to a bank of online resources, webinars and events via our alumni platform Imperial Plexus
- careers support for up to three years after you graduate as well as networking opportunities and professional development events
- access to our Alumni Visitor Centre at the South Kensington Campus, a co-working community space with free Wi-Fi, a bookable meeting room and complimentary refreshments

Visit the alumni website to find out more about your new community, how to access your benefits, and how to get in touch with fellow alumni around the world.

www.imperial.ac.uk/alumni

# **Opportunities for further study**

Imperial's Centre of Excellence in Processable Electronics: <a href="https://www.imperial.ac.uk/processable.electronics">www.imperial.ac.uk/processable.electronics</a>

### 16. Appendices

The following brief descriptions of the content of the course are indicative and changes may be made by the lecturer before each course starts. The descriptions given here may not always match the College Prospectus exactly, as the Prospectus is prepared up to 18 months before a course is given.

#### **Core Lecture Courses**

Fundamentals of Organic and Inorganic Semiconductors and Materials Synthesis and Processing The semiconductors part of the module will refresh the basic properties of semiconducting materials, highlighting the key similarities and differences between electronic behaviour in organic and inorganic materials. It will cover the physics of the electronic structure of piconjugated materials and their neutral, excited and charged states (excitons, polarons), their optical properties (absorption, emission), photophysical processes, photochemistry, charge and exciton transport. It will include an introduction to the techniques used to model the electrical and optical properties of molecular materials. Aspects of other material properties such as ferroelectricity, thermoelectricity and magnetism will also be introduced where relevant.

The materials synthesis and processing part of the module will focus on the preparation and deposition of electroactive materials including the organic, inorganic and hybrid components used in soft electronic devices. Such electroactive materials will include small molecular charge transport materials, sensitising dyes used in solar cells, fluorescent and phosphorescent materials as well as electroactive polymers. The key concepts of conjugation, synthesis (e.g. by Suzuki or Yamamoto coupling, living polymerisations by McCullough route) and relevant characterisation (e.g. by spectroscopy, mass spectrometry, elemental analysis, GPC, cyclic voltametry) will underpin the organic components of the module which should enable students to select molecules for specific (opto)electronic applications and to suggest functionalisation (i.e. fluorination etc.) that will optimise their physical properties. Considering the "active layers" of devices we will focus on photovoltaic systems, organic, hybrid and perovskite and explore the numerous chemical and physical deposition systems utilised in the research, development and commercialisation of these systems before moving onto to interlayers and finally metallic electrode deposition. Throughout the course we will survey the properties of the materials being deposited and correlate their processing with considerations of compatibility, scale and cost.

Course Lecturers: Ji-Seon Kim, Martin Heeney, Jenny Nelson, Felice Torrisi and Jarvist Frost

• Device Physics and Applications and Materials Characterisation
The devices and applications part of the module will cover the basic principles of operation and design and molecular and hybrid light emitting devices, solar cells, photodiodes, thin film transistors, lighting, displays, solar fuels, organic sensors and wearable and flexible electronics using 2D materials. Emerging devices classes will also be introduced including spintronic and bioelectronics devices. The module will also introduce device fabrication and device engineering for maximum performance and lifetime. Methods to evaluate and assess device performance and bottlenecks will be covered (eg solar cell operating efficiency, transistor transfer curves).

This understanding will provide students with approaches to diagnose and rectify problems in their device designs.

The module will also introduce materials characterisation techniques relevant to assessing the microstructure and surface/interface properties of relevant electroactive materials including microscopy, X-ray diffraction, rheology and thermal analysis (including degradation). The module will also introduce steady-state and time-resolved spectroscopic techniques suitable for interrogating structural properties, excited states, and charge carriers in electroactive materials. Knowledge of these techniques should provide students with a platform to start tackling the practical problems they will encounter during their projects.

<u>Course Lecturers: Piers Barnes, Ji-Seon Kim, Nicola Gasparini, Artem Bakulin, Jess Wade, Julie Euvrard, James Durrant</u>

#### **Advanced and Practical Skills Courses**

Practical capability will be developed through a series of targeted courses. The following initial courses are planned (venue in brackets); others are likely to evolve as the field and the Centre progress. Where the topic is of relevance to the MRes in Soft Electronics, other courses will also be offered to students.

#### Computational Workshops

The workshops will focus on four main areas:

- o Molecular modelling
- o Optical and electronic properties of materials
- Device physics
- Material structure and dynamics

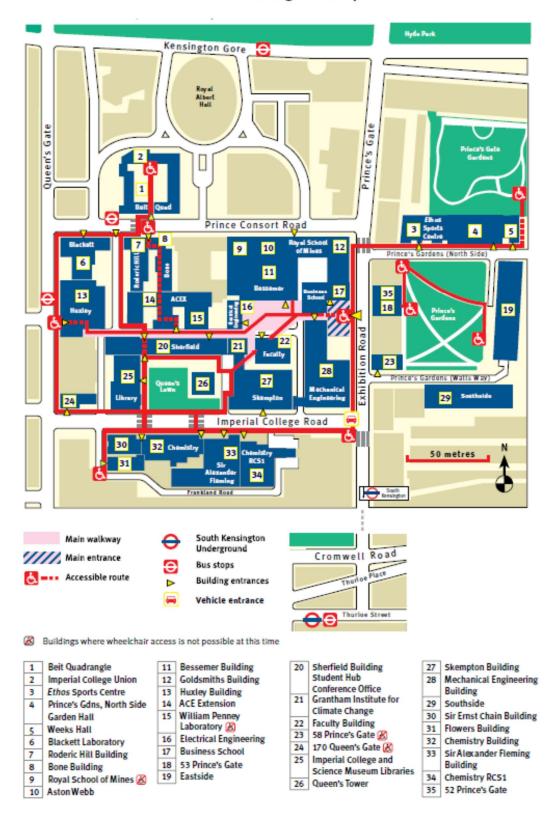
This computer-based workshop will introduce students to some of the range of computational packages available for the simulation of molecular materials, including the elements of quantum chemistry calculations using Gaussian and Turbomole, molecular dynamics packages such as GROMACS, and packages for the visualisation and rendering of molecular structures. Training will consist of short lectures followed by problem solving sessions with demonstrator help available.

- OPV Device fabrication (Imperial College WC Campus, Chemistry Clean Room), 2.5 days
   This practical training course will cover all steps in the fabrication and testing of lab-scale light-emitting diodes, photodiodes and OFETs, including substrate preparation, spin coating of organic layers, contact evaporation and encapsulation, followed by opto-electrical measurement.
- Characterisation course (Imperial College SK Campus, Physics Glove Box), 1 half-day lecture and 1 half-day practical session

This practical hands-on training course will cover widely-used characterisation techniques, such as film thickness measurements, UV-Vis absorption, transmission, JV characteristics of a device and EQE measurements.

# Imperial College London

# **South Kensington Campus**



#### **White City Campus Map**

