Programme Information		
Programme Title	Programme Code	HECoS Code
Nanomaterials	F1Y4	For Registry Use Only

Award	Length of Study	Mode of Study	Entry Point(s)	Total Credits	
				ECTS	CATS
MRes	12 months	Full-time	Annually in October	90	180

Ownership			
Awarding Institution	Imperial College London	Faculty	Faculty of Natural Sciences
Teaching Institution	Imperial College London	Department	Chemistry
Associateship	Diploma of Imperial College (DIC)	Main Location(s) of Study	White City campus
External Reference			
Relevant QAA Benchmark Statement(s) and/or other external reference points		Master's Degree in Chemistry	
FHEQ Level		Level 7	
EHEA Level		2nd Cycle	
External Accreditor(s) (if applicable)			
External Accreditor 1:	N/A		
Accreditation received:	N/A	Accreditation renewal:	N/A
Collaborative Provision			
Collaborative partner	Collaboration type	Agreement effective date	Agreement expiry date
N/A	N/A	N/A	N/A
Specification Details			
Programme Lead		Dr Nicola Gasparini Dr Artem Bakulin	
Student cohorts covered by specification		2025-26 entry	
Date of introduction of programme		October 01	
Date of programme specification/revision		August 23	

Programme Overview

Nanotechnology represents a fundamental change in the way we interact with the natural world and is set to deliver major scientific and technological advances.

The massive global investment in nanotechnology means that scientists who are trained to work effectively in an interdisciplinary environment that bridges the diverse fields of chemistry, physics, materials science, biology and engineering, will play a vital role in shaping the future.

Combining interdisciplinary teaching with cutting-edge research, this flagship course will train the next generation of nanotechnologists, and provide the background required for a career in industrial or academic research.

Learning Outcomes

The programme will provide you with the following:

This course will enable the students to knowledge / fundamental understanding of the nanosciences & nanotechnology, develop intellectual, practical and transferable skills. A more detailed description of the learning outcomes is given below:

1. **Demonstrate** a deep understanding of the core concepts in nanoscience and technology, with the ability to **comprehend**, **conceptualise** and **explore** theories, data and methods relevant to the field.
2. **Employ** research (experimental / computational), including information retrieval, experimental design and statistics, modelling, sampling, nanosciences and physical/chemical/engineering techniques and laboratory safety.
3. **Independently evaluate** and **apply** the essential facts, concepts, principles and theories relevant to the student's project.
4. **Perform** research within a multi-disciplinary environment, **developing** management and communication skills, including problem definition, project design, decision processes, teamwork, written and oral reports, scientific publications.
5. **Critically evaluate** your own and others' work, including an appreciation of novelty and significance.
6. **Recognise and critically appraise** broader issues in nanomaterials research including techniques used to probe nanoscale phenomena as well current and emerging applications.
7. **Compose and deliver** written, oral and visual science communications, which are effective at conveying the message to a variety of audiences.
8. **Demonstrate** laboratory and/or computational **skills** required to perform research in the area of nanoscience and nanomaterials.
9. **Design** a novel research project and **compose** a corresponding grant proposal, appropriate for submission to an academic funding body.
10. **Propose** tractable research objectives for your research project.

The Imperial Graduate Attributes are a set of core competencies which we expect students to achieve through completion of any Imperial degree programme. The Graduate Attributes are available at: https://www.imperial.ac.uk/about/education/our-graduates/

Entry Requirements

Academic Requirement	The minimum requirement is normally a 2.1 UK Bachelor's Degree with Honours in a relevant subject, particularly in subjects such as Chemistry, Physics, Mathematics, Materials, Biochemistry and Engineering Biochemistry (or a comparable qualification recognised by the university) For further information on entry requirements, please go to PG: www.imperial.ac.uk/study/apply/postgraduate-taught/entry-requirements/accepted-qualifications/
Non-academic Requirements	None
English Language Requirement	Standard requirement (PG) Please check for other Accepted English Qualifications

Admissions Test/Interview	Candidates will be invited for interview in person or online.

The programme's competency standards documents can be found at: www.imperial.ac.uk/chemistry/postgraduate/mres/

Learning & Teaching Approach

Learning and Teaching Delivery Methods

The course's aim is to teach the practice of science with the learning and teaching strategy being constructively aligned with the knowledge, skills and abilities required by professional scientists in academia, government, industries, and NGOs.

Most of the weighting of the course is focussed on the research component- e.g. via a proposal writing exercise and research project – which reflect the major activities undertaken by modern scientists. In addition, the taught component exposes you to a broad grounding in the science and application of nanomaterials. The course prepares students to be competent researchers in academia or industry.

Across the programme, a range of teaching methods are used including laboratory work, computational work, seminars, lectures, practical workshops, facility tours, conference attendance & presentation of research work, seminars and online material. It may be possible for projects to be carried out partly or wholly at an external organisation and requests will be considered on a case by case basis.

Overall Workload

Your overall workload consists of face-to-face sessions and independent learning. While your actual contact hours may vary according to the optional modules you choose to study, the following gives an indication of how much time you will need to allocate to different activities at each level of the programme. At Imperial, each ECTS credit taken equates to an expected total study time of 25 hours. Therefore, the expected total study time is 2250 hours per year comprising approximately 350 hours of Taught Lectures with self study, 150 hours of Advanced Lectures with self study, 250 hours of planning and designing the research project guided by your supervisors, and 1500 hours of individual research project work.

Assessment Strategy

Assessment Methods

A range of assessment methods are employed in order to establish professional knowledge and capacities required for a career in nanoscience. These include core technical knowledge, analysis, comprehension, presentation and debating skills.

- Written Coursework
- Written examinations
- Research project work
- A written research Proposal including literature review
- Oral presentations and discussions
- Poster preparation, display and discussion
- A written dissertation

Each assessment is designed to test your appropriate acquisition of separate skills required for the furthering of a career in nanomaterials research and associated professional paths.

The Advanced Lectures element assess your ability to comprehend and critically assess published articles in the nanosciences, outline pros and cons and orally present this summary clearly with the help of visual tools using a narrated PowerPoint presentation. This element will also include a Q&A session intended to assess fundamental understanding of concepts and research presented in the scientific paper (Learning outcomes 1, 3, 5, and 7).

The Core (Chemistry of Nanomaterials) and Elective Lectures (choose two out of following three courses: Processable Electronics from Materials Chemistry to Device Applications, Renewable Energy to Fuels and Chemicals and Membrane Biophysics) assessments will test your fundamental understanding of the underlying science and application of nanomaterials (Learning outcomes 1, 3, 5, 6, 7, 8).

The Project proposal will assess your aptitude to critically analyse published scientific literature, identify a novel contribution and put it in the correct context, plan the work packages necessary to complete the research project and reflect on the ethical, safety and commercial/societal considerations (Learning outcomes 1,3, 5, 6, 7, 9 and 10).

The Research Project will be assessed through a manuscript, a presentation, and an oral examination. The manuscript will evaluate your skills at putting your contribution in context, justifying your methodology and analysis, presenting your results, critically discussing them and drawing conclusions from them. This is structured in the format typical of a research article published in peer-reviewed journals. At the presentation, you will be assessed on your ability to present your research to your examiners with the help of visual tools in a clear, concise fashion, summarising your findings and their relevance. You will also be tested on your ability to answer questions directly relevant to your project. Your oral examination will probe your knowledge and understanding of the relevant literature, methodology and research outcomes including theoretical and practical knowledge of the subject area, of the research techniques used and their limitations as well as your thoughts about the consequences of your work and potential future work based on it (Learning outcomes 1-10).

Academic Feedback Policy

Feedback will be provided within 2 weeks for small pieces of coursework and within 3 weeks for larger assessments (e.g.: research proposal, dissertation). In assessment by oral presentation verbal feedback will be provided during the symposium.

If there is any delay you will be informed.

You will receive written feedback after written assessments containing the comments of the assessors for each module.

Imperial's Policy on Academic Feedback and guidance on issuing provisional marks to students is available at: www.imperial.ac.uk/about/governance/academic-governance/academic-policy/exams-and-assessment/

Re-sit Policy

Imperial's Policy on Re-sits is available at: www.imperial.ac.uk/about/governance/academic-governance/academic-policy/exams-and-assessment/

Mitigating Circumstances Policy

Imperial's Policy on Mitigating Circumstances is available at: www.imperial.ac.uk/about/governance/academic-governance/academic-policy/exams-and-assessment/

Additional Programme Costs

This section should outline any additional costs relevant to this programme which are not included in students' tuition fees.

Description	Mandatory/Optional	Approximate cost
Laptop with camera and microphone	Mandatory	£400-600

Important notice: The Programme Specifications are the result of a large curriculum and pedagogy reform implemented by the Department and supported by the Learning and Teaching Strategy of Imperial College London. The modules, structure and assessments presented in this Programme Specification are correct at time of publication but might change as a result of student and staff feedback and the introduction of new or innovative approaches to teaching and learning. You will be consulted and notified in a timely manner of any changes to this document.

Programme Structure[1]					
Year 1 - FHEQ Level 7 **You will study all core and compulsory modules. You will choose 2 elective modules from group A.**					
Code	Module Title	Core/ Elective/ Compulsory	Group	Term	Credits
CHEM70048	Chemistry of Nanomaterials	Compulsory	N/A	Autumn	5
CHEM70042	Investigating Nanomaterials Research	Compulsory	N/A	Autumn-Spring	5
CHEM70049	Membrane Biophysics	Elective	A	Autumn	5
CHEM70050	Processable Electronics from Materials Chemistry to Device Applications	Elective	A	Autumn	5
CHEM70051	Renewable Energy to Fuels and Chemicals	Elective	A	Autumn	5
CHEM70034	Nanomaterials Research Proposal	Core	N/A	Autumn	10
CHEM70035	Nanomaterials MRes Research Project	Core	N/A	Spring-Summer	60
				Credit Total	90

[1] **Core** modules are those which serve a fundamental role within the curriculum, and for which achievement of the credits for that module is essential for the achievement of the target award. Core modules must therefore be taken and passed in order to achieve that named award. **Compulsory** modules are those which are designated as necessary to be taken as part of the programme syllabus. Compulsory modules can be compensated. **Elective** modules are those which are in the same subject area as the field of study and are offered to students in order to offer an element of choice in the curriculum and from which students are able to select. Elective modules can be compensated.

Progression and Classification

Award of a Masters Degree (including MRes)

To qualify for the award of a postgraduate degree you must have:

1. accumulated credit to the value of no fewer than 90 credits at Level 7
2. and no more than 15 credits as a Compensated Pass

Classification of Postgraduate Taught Awards

The university sets the class of Degree that may be awarded as follows:

1. Distinction: 70.00% or above.
2. Merit: 60.00% or above but less than 70.00%.
3. Pass: 50.00% or above but less than 60.00%.

Your classification will be determined through the Programme Overall Weighted Average meeting the threshold of the relevant classification band.

Your degree algorithm provides an appropriate and reliable summary of your performance against the programme learning outcomes. It reflects the design, delivery, and structure of your programme without unduly over-emphasising particular aspects.

Programme Specific Regulations

N/A

Supporting Information
The Programme Handbook is available upon enrolment.
The Module Handbook is available upon enrolment.
Imperial's entry requirements for postgraduate programmes can be found at: www.imperial.ac.uk/study/pg/apply/requirements
Imperial's Quality & Enhancement Framework is available at: www.imperial.ac.uk/registry/proceduresandregulations/qualityassurance
Imperial's Academic and Examination Regulations can be found at: www.imperial.ac.uk/about/governance/academic-governance/regulations
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Imperial College London is regulated by the Office for Students (OfS) www.officeforstudents.org.uk/advice-and-guidance/the-register/
This document provides a definitive record of the main features of the programme and the learning outcomes that you may reasonably be expected to achieve and demonstrate if you take full advantage of the learning opportunities provided. This programme specification is primarily intended as a reference point for prospective and current students, academic and support staff involved in delivering the programme and enabling student development and achievement, for its assessment by internal and external examiners, and in subsequent monitoring and review.