

| Programme Information                         |                |                       |
|---|----------------|-----------------------|
| Programme Title                               | Programme Code | HECoS Code            |
| Genes, Drugs and Stem Cells – Novel Therapies | A3TS<br>A3TSC  | For Registry Use Only |

| Award           | Length of Study             | Mode of Study | Entry Point(s)      | Total Credits |      |
|-----------------|-----------------------------|---------------|---------------------|---------------|------|
|                 |                             |               |                     | ECTS          | CATS |
| MSc (A3TS)      | 1 calendar year (12 months) | Full-Time     | Annually in October | 90            | 180  |
| PG Cert (A3TSC) | 4 months                    | Part-Time     | Annually in October | 30            | 60   |

You can apply directly to either the PG Cert or the full MSc programme. Those who have applied for the full MSc must successfully complete all core modules before proceeding to the advance module.

Those who successfully complete the PG Cert are eligible to return to the programme within 5 years to complete the full MSc.

| Ownership            |  |                           |                                   |
|----------------------|--|---------------------------|-----------------------------------|
| Awarding Institution | Imperial College London                      | Faculty                   | Faculty of Medicine               |
| Teaching Institution | Imperial College London                      | Department                | National Heart and Lung Institute |
| Associateship        | Diploma of Imperial College (DIC) (MSc only) | Main Location(s) of Study | Royal Brompton Campus             |

| External Reference   |  |
|--|--|
| Relevant <a href="#">QAA Benchmark Statement(s)</a> and/or other external reference points | There are no other programmes in the UK, EU or overseas that provide the unique combination of hot topics that this programme aims to bring. |
| <a href="#">FHEQ Level</a>   | Level 7 - Master's   |
| <a href="#">EHEA Level</a>   | 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                           | Professor Uta Griesenbach |
| Student cohorts covered by specification | 2025-26 entry             |
| Date of introduction of programme        | October 19                |
| Date of programme specification/revision | April 23                  |

## Programme Overview

The MSc in Genes, Drugs and Stem Cells-Novel Therapies is a unique combination of “hot topics” within the field of human health and disease. It will comprise three streams:

- Gene and Nucleic Acid Based Therapies
- Regenerative Medicine
- New Horizons in Pharmacology

The programme will make use of the extensive and unique expertise available in these areas within the National Heart and Lung Institute and the wider university. Teaching will be delivered by academic and clinical researchers at the cutting edge of these fields. The main purpose of this programme is to highlight and teach key advances in these rapidly developing areas of science and medicine and to facilitate state-of-the-art education for the next generation of scientist and clinicians, who we will equip to pursue successful careers in these areas, so they can contribute to future research successes. When designing the programme, we consulted widely with NHS and corporate representatives and also heard from and incorporated the opinion of scientists and students to ensure the content is compatible with demands of future employers and employees to ensure that you will have a wide range of graduate-level career options open to them on graduation. These include continued post-graduate education (PhDs), employment by small biotech companies and large pharmas involved in drug development.

The “stream-based” programme structure and a combination of stream-specific core modules as well as compulsory modules covering contents from all three streams gives you maximum flexibility to gain in depth knowledge within a specific interest area, while at the same time providing key foundation knowledge in each key specialty to all students. It is this provision of teaching in all three areas to all students which makes our programme unique. In addition to offering a master’s degree, the four core modules will also form the content of a Postgraduate Certificate, to maximise student choice.

In addition to the above, another objective is to provide training in translational research illustrating all steps required to progress novel therapies from bench-to-bedside. Wherever applicable we will highlight the multi-disciplinary nature of translational research to open your minds to the various career opportunities in these areas of science and medicine. There will also be a focus on commercialisation strategies (including interaction with industry and health economics).

## Learning Outcomes

On completion of the PG Cert in Genes, Drugs and Stem Cells -Novel Therapies you will be able to:

1. Communicate with clarity, complex concepts on novel therapies to broad range of audiences; within and across scientific disciplines and to non-scientific audiences;
2. Analyse a dataset producing high quality, research paper standard graphical representations and figure legends;
3. In teams construct convincing commercialisation strategies for novel therapies, to be delivered verbally and in writing;
4. Use teamwork to create and deliver compelling societal engagement activities that will showcase your creative ideas and widen awareness of novel therapies;
5. Persuade a simulated review panel to fund a funding proposal, developed through careful consideration of: the most recent advances in (either) genes, drugs or stem cells therapies; and exploration of past controversies, challenges, high-profile successes and failures.

On completion of the MSc in Genes, Drugs and Stem Cells -Novel Therapies, in addition to the learning outcomes above, you will also be able to:

6. Negotiate which novel therapy design ideas, generated in a team-based brainstorming Hackathon, should be blended to produce a functioning product in the Imperial Hackspace;
7. Apply cutting-edge research techniques, contributing to advancement of novel therapies;
8. Conduct experiments designed to rigorously test a hypothesis within a wider, highly topic research question;
9. Critically analyse research data, interrogating it throughout the research project to inform experimental direction;
10. Evaluate research project data in the context of relevant, current literature, critiquing your own and published data;
11. Present research findings as an extended written report and deliver an oral defence;
12. Propose new future experiments and directions for novel therapies, advancing therapeutic frontiers.

Learning outcomes for the elective Advanced Study modules are identical, but the content will be topic-specific.

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         | <p>Normally an upper second class (2.1.) Bachelor's degree Honours within a relevant biological subject from a UK university or equivalent.</p> <p>For the direct entry to the MSc you will be required to have passed the PG Certificate in Genes, Drugs and Stem Cells-Novel Therapies. You must complete the MSc within 5 years of registering for the Postgraduate Certificate.</p> <p>NHLI is committed to supporting the most outstanding scientist regardless of age, disability; gender reassignment, pregnancy and maternity, race, religion or belief, sex, sexual orientation.</p> <p>One of NHLI's Athena Silver SWAN objectives is to ensure that students with extenuating circumstances are considered. Thus, a candidate with a degree below the programme's entry requirement, but who has extenuating circumstances may be considered under this objective with the provision of full transcripts, description of extenuating circumstances and two independent supportive references.</p> <p>A candidate with a degree below the university's 2.2. entry requirement, but who has at least three years relevant work experience after graduation and has two supportive references on file may be considered under Imperial's special circumstances policy:<br/> <a href="http://www.imperial.ac.uk/about/governance/academic-governance/academic-policy/admissions/">www.imperial.ac.uk/about/governance/academic-governance/academic-policy/admissions/</a></p> <p>The programme will not be suitable for entrants without degree level knowledge of a relevant biological subject.</p> <p>For further information on entry requirements, please go to<br/> <a href="http://www.imperial.ac.uk/study/apply/postgraduate-taught/entry-requirements/accepted-qualifications/">www.imperial.ac.uk/study/apply/postgraduate-taught/entry-requirements/accepted-qualifications/</a></p> |
| Non-academic Requirements    | Not applicable  |
| English Language Requirement | <p><a href="#">Standard requirement</a></p> <p>Please check for other <a href="#">Accepted English Qualifications</a></p>   |
| Admissions Test/Interview    | All applicants will be interviewed. This will generally be in the form of a 20 min interview via MS Teams   |

The programme's competency standards documents are available from the department.

## **Learning & Teaching Approach**

### **Learning and Teaching Delivery Methods**

In addition to lectures all modules will contain components of team-based and problem-based learning as well as pre-session flipped classroom and e-learning. Teaching is inclusive and Blackboard Learn will be used to facilitate communication and access to all teaching materials. Laboratory skills will be developed through relevant laboratory practicals and a 6 month research project. Teaching will be delivered by internal and external experts in the relevant fields. 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. In addition, you will be expected to learn independently. Group sizes will be approximately 40 students in the core/compulsory modules and ~15 students in the advanced study modules.

### **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.

During the 12 months MSc course you will spend 50% of time as part of the 6 months taught component which will consist of approximately 500 hrs of independent learning and 500 hrs in contact with lecturers/educators. The remaining time will be spent in the form of a 6 month research project.

## **Assessment Strategy**

### **Assessment Methods**

A range of formative and summative assessments will be used including, but not limited to, journal clubs, data analyses, poster presentations, writing tasks as well as the development of a public engagement activity and a drug commercialisation strategy. Additional assessment will include the development of a funding application and the preparation of a research project report.

### **Academic Feedback Policy**

#### **Formative:**

You will receive oral or written feedback from lecturers or peer feedback from fellow students.

#### **Summative:**

You will receive oral or written feedback from lecturers/educators on all summative assessments. Feedback will generally be given within 2 weeks after the assessment.

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/](http://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/](http://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/](http://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 |
|-------------------------------------|--------------------|------------------|
| No additional costs are anticipated | Not applicable     | Not applicable   |

| Programme Structure <sup>1</sup>   |   |                                  |               |         |
|--|---|----------------------------------|---------------|---------|
| <b>Year 1 – FHEQ Level 7</b><br><br><b>For a Postgraduate Certificate you will study all compulsory and core modules except for the Research Project.</b><br><br><b>For a Masters you will study all compulsory and core modules. In addition, you will choose one of the elective Advanced Study Modules.</b> |   |                                  |               |         |
| Code   | Module Title  | Core/<br>Compulsory/<br>Elective | Term          | Credits |
| NHLI70017  | Evidence, Information, Communication                      | Compulsory                       | Autumn        | 7.5     |
| NHLI70018  | Core Studies in Gene and Nucleic Acid-based Therapies     | Core                             | Autumn        | 7.5     |
| NHLI70019  | Core Studies in Regenerative Medicine                     | Core                             | Autumn        | 7.5     |
| NHLI70023  | Core Studies in New Horizons in Pharmacology              | Core                             | Autumn        | 7.5     |
| NHLI70021  | Advanced Studies in Gene and Nucleic Acid-based Therapies | Elective                         | Spring        | 15      |
| NHLI70022  | Advanced Studies in Regenerative Medicine                 | Elective                         | Spring        | 15      |
| NHLI70020  | Advanced Studies in New Horizons in Pharmacology          | Elective                         | Spring        | 15      |
| NHLI70024  | Research Project  | Core                             | Spring-Summer | 45      |
| Credit Total   |   |                                  |               | 90      |

<sup>1</sup> **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.

### **Award and Classification for Postgraduate Students**

#### **Award of a Postgraduate Certificate (PG Cert)**

To qualify for the award of a postgraduate certificate you must have a minimum of 30 credits at Level 7

#### **Award of a Masters Degree**

To qualify for the award of a Masters 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;
3. Met any specific requirements for an award as outlined in the approved programme specification for that award.

#### **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%

For a Masters, your classification will be determined through:

- The Programme Overall Weighted Average and the designated dissertation or final major project module meeting the threshold for 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 on Blackboard.

Module information is available within the programme handbook on Blackboard.

Imperial's entry requirements for postgraduate programmes can be found at:

[www.imperial.ac.uk/study/apply/postgraduate-taught/entry-requirements](http://www.imperial.ac.uk/study/apply/postgraduate-taught/entry-requirements)

Imperial's Quality & Enhancement Framework is available at:

[www.imperial.ac.uk/registry/proceduresandregulations/qualityassurance](http://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](http://www.imperial.ac.uk/about/governance/academic-governance/regulations)

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[www.imperial.ac.uk/admin-services/secretariat/university-governance-structure/charters/](http://www.imperial.ac.uk/admin-services/secretariat/university-governance-structure/charters/)

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[www.officeforstudents.org.uk/advice-and-guidance/the-register/](http://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.**