Programme Information		
Programme Title	Programme Code	HECoS Code
Aerospace Sciences	H421	For Registry Use Only

Award	Length of Study	Mode of Study	Entry Point(s)	Total Credits	
				ECTS	CATS
MRes	1 Calendar Year (12 months)	Full-Time	Annually in October	90	180
PG Certificate	N/A	N/A	N/A	30	60
The PG Certificate is an exit award and is not available for entry. You must apply to and join the MRes.					

Ownership			
Awarding Institution	Imperial College London	Faculty	Faculty of Engineering
Teaching Institution	Imperial College London	Department	Aeronautics
Associateship	Diploma of Imperial College (DIC)	Main Location(s) of Study	South Kensington Campus
External Reference			
Relevant QAA Benchmark Statement(s) and/or other external reference points		Master's Award in Engineering	
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 Emilliano Bilotti	
Student cohorts covered by specification		2026-27 entry	
Date of introduction of programme		October 26	

Date of programme specification/revision	February 26

Programme Overview

Aerospace science describes the multidisciplinary field of study that encompasses the various disciplines related primarily to the design, manufacture, development, and operation of aircraft and spacecraft. This includes sustainable aircraft and propulsion systems, advanced aerostructures and materials, autonomous and intelligent aerospace systems, data-driven design, modelling, and optimisation across the aerospace lifecycle. On this Master of Research (MRes) programme you will be able to engage in original research in this multidisciplinary field, working with one of the Department of Aeronautics' world leading researchers.

Most of your time on this programme will be devoted to executing a novel piece of aerospace research. Your supervisor and area of research will be allocated based on the preferences and interests indicated during your application. During the Autumn term (October – December) you will concentrate on reviewing the relevant literature, developing your research question, and compiling and presenting your research proposal. Your exploration will be further supported by completing the Engaging with Aerospace Research module where you will be immersed into a variety of research topics by attending seminars and contributing to a scientific journal club. Having completed your research proposal in the Autumn term, the following 9 months (January-September) will be devoted to planning and executing an individual research project to investigate your proposed research question and extract new insight. The individual research projects are be completed entirely at Imperial College London but may be defined in collaboration with industrial partners and as such may include short periods of placement at the partner.

In addition to your individual research work, you will be able to further deepen your subject-specific knowledge by picking three electives that best align with your chosen research area from the Department's diverse offering of taught module, shared with our MSc and MEng programmes, spanning from applied aerodynamics, aeroelasticity, robotics, advanced computational methods and advanced materials, structures and manufacturing. Guidance on the selection of the most appropriate modules for you, in support of your research topic, will be provided by your project supervisor.

On successful completion of your course of study, it is expected that you will be well placed to continue studying towards a PhD degree or to join the aerospace industry and allied sectors.

Learning Outcomes

Upon completing this MRes degree programme, you will be able to:

1. demonstrate a deep working understanding of aspects of aerospace science relevant to their project and the broader context in which it is set;
2. critically evaluate the quality, significance and novelty of their own and others' work as it appears in the literature;
3. evaluate the state-of-the-art and propose achievable research objectives for their own work, considering constraints such as time, resources and cost;
4. demonstrate laboratory and/or computational skills necessary to carry out scientific research;
5. devise, plan, monitor and improve upon a programme of original research aimed at answering a stated research question;
6. demonstrate the ability to manage your time and work independently;
7. effectively communicate their work and ideas in a variety of modes, including in writing and orally, targeting a variety of audiences.

Students exiting with a PG Certificate will have accomplished at least objectives 1 - 3.

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	At least a 2.1 (First class being strongly preferred) UK Bachelor's degree with Honours or equivalent in engineering, mathematics, physics, computing or equivalent. For further information on entry requirements, please go to PGT: www.imperial.ac.uk/study/apply/postgraduate-taught/entry-requirements/
Non-academic Requirements	A 2-page CV and a written statement (no more than 1 page) articulating your motivation and topics of interest, identifying two or more potential supervisors.
English Language Requirement	Standard requirement IELTS score of 6.5 overall (minimum 6,0 in all elements) Please check for other Accepted English Qualifications
Admissions Test/Interview	As part of the application process, shortlisted candidates will be asked to join an online interview with potential project supervisors.

The programme's competency standards documents can be found at: https://www.imperial.ac.uk/media/imperial-college/faculty-of-engineering/aeronautics/Competency-Standards.pdf

Learning & Teaching Approach

Learning and Teaching Delivery Methods

Taught activities will typically be classroom based, in the form of research seminars or large class teaching sessions, ranging in format from traditional lectures to more active learning sessions. Development of research skills will further be supported through elements of asynchronous and group learning activities.

Most of your learning will be self-directed learning, under the guidance and supervision of a member of academic staff (your supervisor). Your interactions will typically be in the form of regular, individual progress meetings, however as part of your research project there will likely be further opportunities to interact, meet and collaborate with researchers working in allied projects and fields.

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 2,250 hours per year for an average student.

During the Autumn and Spring terms you will spend approximately 6 and 3 hours per week for taught modules. The Aeronautics Department further expects that you will have to complete approximately 4 hours of self-study for every hour of classroom teaching. You can expect to have a meeting with your project supervisor normally once a week. The rest of your time, approximately 30-40 hours per week, should be devoted to your individual project work.

Assessment Strategy

Assessment Methods

The Aeronautics Department aims to employ assessment both to test your achievement of module learning outcomes, referred to as summative assessment, and as a method of enhancing learning, developing skills and applying knowledge through assessment, referred to as formative assessment.

A variety of formative and summative assessment methods are utilised in this programme. Your project proposal as well as research findings will be summatively assessed via written submissions. Through oral assessments you will be able to defend your work and address examiners' questions about your work. Your ability to work independently, approach to research and communication with your supervisor will further be assessed.

Written examinations are utilised for elective modules where theoretical knowledge and its application within a disciplinary setting is introduced. In addition to a final summative assessment, such modules will typically offer opportunities for you and your instructors to assess your level of understanding and progress by completing in-class or online formative progress tests.

An indicative* breakdown of summative assessment for the programme is reported below.

Coursework	45.55%*
Practical	37.78%*
Exams	16.67%*

* Figures are approximate and will vary based on the elective modules selected.

Academic Feedback Policy

Feedback is an essential part of learning, and the Department gives high priority to the timeliness and quality of feedback offered to you on all modules. The primary purpose of feedback is to assist learning and the development of skills, by highlighting strengths and weaknesses on one hand, and by identifying actions for improvement on the other. It is not meant to exclusively provide justification for assessment results. It is important to recognise that: 1) feedback comes in various forms and 2) feedback requires your active engagement.

Feedback will be provided for all formative assessments carried out as part of this programme. That will include written or oral feedback of your project proposal, and mid-project review oral assessment. Feedback will be provided in good time and ahead of the next opportunity where said feedback will be of use to you. For examinations, a written examiner's report, commenting and providing quantitative information on the performance of the entire cohort, detailing common mistakes, and highlighting alternate approaches to the published solution, will be made available.

The primary source of feedback for your project will be in the form of conversations with your supervisor and will be delivered verbally throughout the duration of your project. This can often be less structured, so attention must be paid. If in doubt, ask your supervisor for more structured feedback on specific aspects of your work.

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
Insurance for Department issued iPad	Optional	£50

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 modules. Three elective modules, of which two from Group A, must be selected. Selection must be made in consultation and agreement with your project supervisor. The offering of electives is subject to streaming.

***This module is considered as pass/fail and does not contribute to the overall weighted average used for classification**

Code	Module Title	Core/ Compulsory Elective	Group	Term	Credits
AERO70044	Engaging with Aerospace Research*	Core		Autumn/ Spring	5
AERO70045	MRes Aerospace Project Proposal	Core		Autumn	10
AERO70043	MRes Aerospace Research Project	Core		Spring/ Summer	60
AERO70039	Advanced Control	Elective	A	Autumn	5
AERO70020	Advanced Fluid Mechanics and Fluid Structure Interaction	Elective	A	Autumn	5
AERO70002	Advanced Manufacturing	Elective	A	Autumn	5
AERO70003	Advanced Propulsion	Elective		Spring	5
AERO70004	Aeroelasticity	Elective	A	Autumn	5
AERO70005	Aerothermodynamics of Launchers and Re-Entry Vehicles	Elective	A	Autumn	5
AERO70023	Analytical Characterisation of Composite Materials	Elective		Spring	5
AERO70024	Applications of Computational Fluid Dynamics	Elective		Spring	5
AERO70006	Applications of Fluid Dynamics	Elective	A	Autumn	5
AERO70025	Applied Aerodynamics	Elective	A	Autumn	5
AERO70041	Aircraft Operations	Elective	A	Autumn	5
AERO70028	Composite Innovation - Nanocomposites and Structural Power	Elective		Spring	5
AERO70008	Computational Fluid Dynamics	Elective	A	Autumn	5
AERO70009	Computational Methods in Engineering	Elective	A	Autumn	5
AERO70040	Design Optimisation	Elective		Spring	5

[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.

AERO70031	Emerging Technologies for Green Aviation	Elective	A	Autumn	5
AERO70010	Finite Elements	Elective	A	Autumn	5
AERO70032	Flow Instability and Transition	Elective		Spring	5
AERO70026	Fundamentals of Scientific Machine Learning	Elective	A	Autumn	5
AERO70011	High-Performance Computing	Elective		Spring	5
AERO70038	Introduction to Vertical Flight	Elective		Spring	5
AERO70014	Lightweight Structures	Elective	A	Autumn	5
AERO70016	Orbital Mechanics	Elective	A	Autumn	5
AERO70042	Quantification of Aerospace Environmental Impact	Elective	A	Autumn	5
AERO70018	Spacecraft Structures	Elective		Spring	5
AERO70019	Spacecraft Systems	Elective		Spring	5
AERO70035	Structural Integrity and Health Monitoring	Elective		Spring	5
AERO70036	Systems Engineering for Unmanned Aerial Vehicles	Elective		Spring	5
AERO70013	Turbulence and Turbulence Modelling	Elective	A	Autumn	5
				Credit Total	90

Progression and Classification

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 (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;
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 from the department.
The Module Handbook is available from the department.
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
Imperial College London is an independent corporation whose legal status derives from a Royal Charter granted under Letters Patent in 1907. In 2007 a Supplemental Charter and Statutes was granted by HM Queen Elizabeth II. This Supplemental Charter, which came into force on the date of Imperial's Centenary, 8th July 2007, established Imperial as a University with the name and style of "The Imperial College of Science, Technology and Medicine". www.imperial.ac.uk/admin-services/secretariat/college-governance/charters/
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.