Imperial College London

Programme Information

Programme Title		Programme Code	HECoS Code
Biosystematics		C1Y8	For Registry Use Only

Award	Length of Study	Mode of Study	Entry Point(s)	Total Credits	
				ECTS	CATS
MRes	e.g. 1 Calendar Year (12 months)	e.g. Full-Time	e.g. Annually in October	90	180

Ownership

Awarding Institution	Imperial College London	Faculty	Faculty of Natural Sciences
Teaching Institution	Imperial College London	Department	Life Sciences
Associateship	Natural History Museum	Main Location(s) of Study	Silwood Park and Natural History Museum

External Reference

Relevant QAA Benchmark Statement(s) and/or other external reference points	N/A
FHEQ 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
Natural History Museum	Collaborative degree programme agreement	8 Sept 2017	8 Sept 2022

Specification Details

Programme Lead	Alfried Vogler, Course director
Student cohorts covered by specification	2022-23 entry
Date of introduction of programme	October 02
Date of programme specification/revision	July 22

Programme Overview

This is a one-year research-based postgraduate course, run jointly by Imperial College London and the Natural History Museum, a leading institute in systematics research, where students will be based for much of their time. The course provides students with a broad perspective of taxonomy and systematics, together with relevant practical experience. The course is aimed at students who wish to broaden their knowledge in this area before undertaking a PhD or embarking on a research career in systematics. The course runs alongside the MSc in Taxonomy and Biodiversity and students will attend key lectures of that course. Students are fully integrated in research groups and attend lab meetings and research seminars.

The course comprises a short series of quantitative skills courses (six weeks), followed by two consecutive research projects, selected from three main areas including: (a) specimen-based phylogenetics, (b) molecular systematics and genomics, and (c) 'big-data' bioinformatics and biodiversity informatics. While studies of the subject area are by hands-on research, wide coverage of the field is achieved by selection of one project each from a different area.

The projects are selected from a list of eligible topics or are developed with the student's input. The very wide range of research interests of potential supervisors at Imperial and NHM ensures a broad choice of topics.

Learning Outcomes

At the end of the programme you will have:

Knowledge and Understanding of:
1. Principles of phylogeny reconstruction;
2. Taxonomic practice in collection-based research;
3. Measuring and interpreting variation in specimen-based taxonomy;
4. Interpretation of palaeontological data;
5. Detailed knowledge and understanding of species concepts and their consequences;
6. Principles and practice of molecular systematics;
7. Recent advances in DNA taxonomy/ DNA barcoding;
8. Bioinformatics for DNA sequence analysis;
9. Research techniques, including information retrieval, experimental design and statistics, sampling, taxonomic keys, molecular systematics, laboratory and field safety;

Intellectual Skills – able to:
1. Understand and evaluate current research through reading published papers in recommended journals;
2. Plan a course of training to enable learning of appropriate skills;
3. Decide appropriate scientific methods and techniques for analysing raw data and solving phylogenetic problems;
4. Plan, undertake and write up three original and individual research projects.

Practical Skills – able to:
1. Use laboratory and collection-based methods to generate data;
2. Analyse experimental results and determine their strength and validity;
3. Analyse morphological and molecular character data;
4. Prepare research proposals;
5. Write concisely and effectively for scientific and lay audiences;
6. Give technical presentations;
7. Use the scientific literature effectively;
8. Use computational tools and packages.

Transferable Skills – able to:
1. Communicate effectively through oral presentations, written reports and scientific publications;
2. Apply statistical and systematics skills;
3. Management skills: problem definition, project design and evaluation, risk management, teamwork and coordination;
4. Integrate and evaluate information from a variety of sources;
5. Transfer techniques and solutions from one discipline to another;
6. Use Information and Communications Technology;
7. Manage resources and time;
8. Learn independently with open-mindedness and critical enquiry;
9. Learn effectively for the purpose of continuing professional development.

The Imperial Graduate Attributes are a set of core competencies which we expect students to achieve through completion of any Imperial College degree programme. The Graduate Attributes are available at:
www.imperial.ac.uk/students/academic-support/graduate-attributes

Entry Requirements

Academic Requirement	Normally a 2.1 UK Bachelor's Degree with Honours in a Biological or Environmental subject (or a comparable qualification recognised by the College).
Non-academic Requirements	None
English Language Requirement	Standard requirement (UG) Please check for other Accepted English Qualifications
Admissions Test/Interview	Candidates may be interviewed. No Admissions tests. Decisions based on CV, references and personal statement

The programme's competency standards documents can be found at: http://www.imperial.ac.uk/media/imperial-college/faculty-of-natural-sciences/department-of-life-sciences/public/postgraduate/masters/Life-Sciences-Competence-standards-PG.pdf

Learning & Teaching Approach

Scheduled
 • Lectures
 • Regular tutorials
 • Participation in lab meetings
 • Seminars
 • Journal Clubs

E-learning & Blended
 • Computer-based work with cloud-based version control
 • Online lecture and assessment materials
 • Online seminar recordings

Projects and Placements
 • Short research projects (3.5 months)
 • Individual research project and dissertation (4 and 6 months), which can include placements

Overall Workload
The course consists of face-to-face sessions, independent learning, and two large hands-on research projects. At Imperial, each ECTS credit taken equates to an expected total study time of 25 hours. Therefore, the expected total study time for this 90 ECTS credit course is 2250 hours per year. Typically, students will spend around 10% of their time in lectures and practical's and about 10% of their time on independent study during the taught part of the course. The remaining 80% of their time will be spent on the research projects.

Assessment Strategy

Assessment Methods

	Year 1
Data Science	15 ECTS
Research Project 1	30 ECTS
Research Project 2	45 ECTS

Research project 1 and 2 includes mark on the dissertation given by two examiners accounting for 75% of the mark plus assessment of the public presentation of the thesis accounting for 25%.

Academic Feedback Policy

You will be provided with feedback in a number of formats, including:
1. Oral (face to face during or after in-person or online sessions)
2. Personal (discussions with staff during project work)
3. Interactive (peer-to-peer discussion of project; monthly academic tutorials with the MRes class)
4. Written (comments on research project report and oral presentation)

Re-sit Policy

The College's Policy on Re-sits is available at: www.imperial.ac.uk/student-records-and-data/for-current-students/undergraduate-and-taught-postgraduate/exams-assessments-and-regulations/

Mitigating Circumstances Policy

The College's Policy on Mitigating Circumstances is available at: www.imperial.ac.uk/student-records-and-data/for-current-students/undergraduate-and-taught-postgraduate/exams-assessments-and-regulations/

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 computer capable of running a UNIX-based OS	Mandatory	£500 if purchased new

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 **Students study all core modules.**					
Code	Module Title	Core/ Elective/ Compulsory	Group	Term	Credits
	Biological Computing	Core		1	10
	Research Project in Biosystematics Project 1	Core		1,2	35
	Research Project in Biosystematics Project 2	Core		2,3	45
				Credit Total	90

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[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 Postgraduate Degree (MRes)
To qualify for the award of a postgraduate degree a student must have:
1. accumulated credit to the value of no fewer than 90 credits at level 7 or above of which no more than 15 credits may be from credit level 6;
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 College sets the class of Degree that may be awarded as follows:
1. Distinction: The student has achieved an overall weighted average of 70.00% or above across the programme.
2. Merit: The student has achieved an overall weighted average of above 60.00% but less than 70.00%.
3. Pass: The student has achieved an overall weighted average of 50.00% but less than 60.00%.

a. For a Masters, students must normally achieve a distinction (70.00%) mark in the dissertation or designated final major project (as designated in the programme specification) in order to be awarded a distinction.
b. For a Masters, students must normally achieve a minimum of a merit (60.00%) mark in the dissertation or designated final major project (as designated in the programme specification) in order to be awarded a merit
c. Modules taken at level 6 as part of the programme specification for a named postgraduate award will contribute to the determination of pass, merit or distinction for any taught postgraduate award and are included in the calculation of the overall weighted average.

N/A

Supporting Information
The Programme Handbook is available at: https://www.imperial.ac.uk/study/pg/life-sciences/biosystematics/
The Module Handbook is available at: https://www.imperial.ac.uk/study/pg/life-sciences/biosystematics/
The College's entry requirements for postgraduate programmes can be found at: www.imperial.ac.uk/study/pg/apply/requirements
The College's Quality & Enhancement Framework is available at: www.imperial.ac.uk/registry/proceduresandregulations/qualityassurance
The College's Academic and Examination Regulations can be found at: www.imperial.ac.uk/about/governance/academic-governance/regulations
Imperial College 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 the College's Centenary, 8th July 2007, established the College 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 a typical student may reasonably be expected to achieve and demonstrate if s/he takes 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.

Modifications			
Description	**Approved**	**Date**	**Paper Reference**
Curriculum Review	Programmes Committee	22/03/22	PC.2021.61