

MSci Geology and Geophysics

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 intended as a reference point for prospective students, current students, external examiners and academic and support staff involved in delivering the programme and enabling student development and achievement.

Programme Information

Award(s)	MSci			
Associateship	Royal School of Mines			
Programme Title	Geology and Geophysics			
Programme code	F661			
Awarding Institution	Imperial College London			
Teaching Institution	Imperial College London			
Faculty	Faculty of Engineering			
Department	Department of Earth Science & Engineering			
Mode and Period of Study	4 academic years full-time			
Cohort Entry Points	Annually in October			
Relevant QAA Benchmark Statement(s) and/or other external reference points	Honours Degrees in Engineering and Master's Degrees in Engineering			
Total Credits	ECTS:	270	UK Credit:	540
FHEQ Level	Level 7			
EHEA Level	2 nd cycle			
External Accreditor(s)	Geological Society of London			
Specification Details				
Student cohorts covered by specification	2016/17			
Person responsible for the specification	Dr Lorraine Craig, Director of UG Studies			
Date of introduction of programme	October 2011			
Date of programme specification/revision	July 2016			

Description of Programme Contents

Understanding the Earth and how mathematical and physical laws can be applied to that study are the fundamentals of the degree course. Geophysicists understand the Earth and other planets through data collection, processing and interpretation, and make inferences and models based on the application of fundamental scientific principles. The course is designed to provide students with the interdisciplinary skills in physics, maths, chemistry, engineering and the geosciences to provide an understanding of this challenge and the possible solutions. A coherent and balanced approach to learning in the first two years will enable students to have time to explore the subject, develop their self-organised study and allow for more self-directed learning as the degree progress through the 4-years. Classroom teaching will be enhanced by fieldwork throughout the degree in addition to a range of data handling technique and skills.

Learning Outcomes

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

Knowledge and Understanding of:

- The Earth as a dynamic system, its evolution through time, uniformitarianism
- Petrology and petrological analysis and the interpretation of the provenance through hand specimens, petrology and field relationships from the micro- to macro-scale
- Basic mathematics, physics, chemistry and computer languages that are relevant to modern geosciences
- Geochemistry: in particular solid earth geochemistry, low temperature geochemistry, biogeochemistry, environmental geochemistry, study of the earth and planetary systems and their mineralogy
- Using Geophysical techniques in exploration, and applying mathematics and physics to studying the Earth as a planet
- Surface Processes: weathering and its consequences for sedimentation, soil development, geomorphology and geohazards
- Internal Processes: Petrological analysis and what it tells us about processes, volcanism and economic mineralisation
- Tectonics and geological structures: Deformation, plate tectonics and earthquakes
- Life on Earth through the study of palaeontology, paleobiology and the stratigraphic record on land and marine
- Geological maps and three-dimensional interpretation of surface and sub-surface geological systems acquired through knowledge of geological mapping and electronic mapping packages.

Intellectual Skills

- Synthesis: integrate theory and practice.
- Analytical: acquire and interpret data and test hypotheses.
- Apply geological principles to the solution of problems.
- Demonstrate the skills necessary to plan, conduct and report a programme of field geo-scientific analysis.

Practical Skills:

- Carry out fieldwork and associated risk assessments
- Critically evaluate scope of modern techniques to petrological analysis
- Use current geo-scientific concepts to interpret geological processes.
- Achieved by stable and radiogenic isotope methods, basin history modelling and structural analysis via stereonet
- Assess plausible schemes for deducing geo-scientific information by data synthesis
- Apply concepts in specific applied geo-scientific contexts

Upon successful completion of the programme students should be able to:

- Communicate effectively in writing and verbally.
- Apply mathematical skills (in particular modelling, analysis and quantifying uncertainty).
- Work as a member of an interdisciplinary team either as a member or as a leader and consider others in their workplace.
- Project and time-management efficiency.

Entry Requirements

Academic Requirement	Minimum AAA overall or equivalent to include at least two subjects from Mathematics, Physics, Chemistry, Geology, Biology and Geography. For this programme, candidates are recommended to have at least an AS-level in Physics.
Non-academic Requirements	None
Home/EU/international students will be invited to attend an interview, which may be by SKYPE for international students.	
English Language Requirement	IELTS 6.5 with a minimum of 6.0 in each element or equivalent

The programme's competency standards document can be found at:

<http://www.imperial.ac.uk/engineering/departments/earth-science/current-student-staff-info/ug/>

Learning & Teaching Strategy	
Scheduled Learning & Teaching Methods	<ul style="list-style-type: none"> • Lectures • Tutorials • Lab work • Fieldwork
E-learning & Blended Learning Methods	<ul style="list-style-type: none"> • Fieldwork • Group exercises • Presentations
Project and Placement Learning Methods	<ul style="list-style-type: none"> • Individual geology project • Individual research project
Assessment Strategy	
Assessment Methods	<ul style="list-style-type: none"> • Written Examinations • Coursework • Lab & Fieldwork Reports • Poster Presentations • Viva • Presentations • Research & project dissertations
Academic Feedback Policy	
<p>Feedback is ongoing; it happens during practical classes, in workshops, in lectures, in tutorials and in almost any part of your learning.</p> <p>During fieldwork feedback is provided up to 12 hours each day, and there are other areas where students and staff provide feedback. Feedback is intended to extend your knowledge, skills and learning in a variety of ways.</p> <p>If there is written feedback on submitted coursework, it is provided within two weeks of submission. Some staff chose to give verbal feedback on coursework at the start of the next teaching session, others give written feedback. Not every course will be the same. If feedback is not provided by staff within two weeks of submitting written work and you have not been notified of a delay, we ask students to notify the Academic Tutor by e-mail.</p> <p>Where practical, and in some cases this will not be practical, staff will give feedback to the entire student group on the examinations assessment. Staff are normally extremely willing to give individual feedback to students, either their personal tutees or in class as the needs arise.</p>	

Re-sit Policy

The College's Policy on Re-sits is available at: www.imperial.ac.uk/registry/exams/resit

At the discretion of the examiners, supplementary qualifying tests (SQT) may be offered to candidates whose performance is marginally unsatisfactory, normally in not more than one Element. The performance required to pass an SQT is determined by the examiners having regard to the nature of the SQT; the required level will not be less than the original pass mark, and may be set at a higher level.

Supplementary qualifying tests are normally examined by written papers, or by re-submission of relevant project reports or coursework, and may include an additional oral examination; they may be used to examine the whole of an Element, or where the examiners deem it appropriate, one or more sub-elements. SQTs may be held at any appropriate time, but are normally held in September ahead of the start of the next session.

Supplementary qualifying tests do not constitute re-examination; rather, they provide a means by which a marginally unsuccessful candidate, who is otherwise qualified to proceed, may improve their preparedness and demonstrate their fitness to proceed successfully. Candidates whose performance in SQTs is found to be satisfactory by the examiners, will be deemed to have passed the appropriate Element, and, subject to satisfactory performance in all other Elements, will be deemed to have passed the year, and may proceed to the following year of the programme without penalty.

Where a supplementary qualifying test has been applied to a candidate, final marks appearing on transcripts and used in calculating final year and degree totals, shall be those derived following the SQT, such marks shall normally be capped to the original pass mark for the Element or sub-element that has been tested.

Candidates who are invited to re-attend and repeat the year must normally be re-examined and re-assessed in all Elements and sub-elements of the year including any that were nominally previously passed; marks are not capped during a repeated year. Repeating candidates will normally be transferred onto the BSc programme; they may only proceed onto the MSci programme with the special agreement of the examiners.

Candidates who fail the year, and who are not invited to re-attend and repeat the year, may retake examinations and be re-assessed in those Elements or sub-elements that they have previously failed. Such re-assessment should normally happen at the first available opportunity. Excluding any Supplementary Qualifying Tests that may be offered, re-assessment in any Element or sub Element is allowed once only.

Mitigating Circumstances Policy

The College's Policy on Mitigating Circumstances is available at: www.imperial.ac.uk/registry/exams

Assessment Structure

Marking Scheme

Year One

A student must:

- Achieve an aggregate mark of at least 40% in each element

Year Two

A student must:

- Achieve an aggregate mark of at least 40% in each element

Year Three

A student must:

- Achieve an aggregate mark of at least 40% in each element

Year Four

A student must:

- Achieve an aggregate mark of at least 50% in each element

Final Degree Classifications

Third – a student must achieve an aggregate mark of 40%

Lower Second – a student must achieve an aggregate mark of 50%

Upper Second – a student must achieve an aggregate mark of 60%

First - a student must achieve an aggregate mark of 70%

Year One (11.1r%)				
Element	Theory 1 (25%)	Theory 2 (25%)	Practical (25%)	Coursework (25%)
3.75 ECTS	<i>EITHER</i> : Maths 0 <i>OR</i> : Maths Methods 1 (25%)	<i>EITHER</i> : Chemistry for Geoscientists <i>OR</i> : Solid Earth Geochemistry (25%)	<i>EITHER</i> : Optical Mineralogy and Petrology <i>OR</i> Numerical Methods 1 (25%)	Graphics & Statistics for Geoscientists (25%)
3.75 ECTS	<i>EITHER</i> : Physics for Geoscientists <i>OR</i> : Physical Processes (25%)	<i>EITHER</i> : Life and Earth History <i>OR</i> Maths Methods 2 (25%)	Programming for Geoscientists (25%)	Introduction to Field Geology (2.5 ECTS) (16.6r%) AND: Field Geology 1 (5 ECTS) (33.3r%)
3.75 ECTS	Dynamic Earth 1 (25%)	Surface Processes (25%)	Structural Geology 1 (25%)	
3.75 ECTS	Stratigraphy (25%)	Igneous and Metamorphic Processes (25%)	Earth Materials (25%)	Projects, Tutorials and Workshops 1 (25%)
	15 ECTS	15 ECTS	15 ECTS	15 ECTS

Year Two (22.2r%)				
Element	Theory 1 (25%)	Theory 2 (25%)	Practical (25%)	Coursework (25%)
3.75 ECTS	<i>EITHER: Applied Geophysics 1 OR: Maths 1 (25%)</i>	<i>EITHER: Solid Earth Geochemistry OR: Low Temperature Geochemistry (25%)</i>	<i>EITHER: Metamorphic 1 OR Mechanics (25%)</i>	<i>EITHER: Field Geology 2 OR Field Geophysics (25%)</i>
3.75 ECTS	<i>EITHER: Sedimentary Geology OR Vibrations and Waves (25%)</i>	<i>EITHER: Palaeontology 1 OR: Maths Methods 2 OR Maths Methods 4 (25%)</i>	<i>EITHER: Stratigraphy 2 OR Numerical Methods 2 (25%)</i>	EITHER: Field Geology 3 OR Data Processing, Modelling and Interpretation of Morocco Data (50%)
3.75 ECTS	<i>EITHER: Global Geophysics OR: Physical Processes (25%)</i>	<i>EITHER: Seismology OR Structural Geology 3 (25%)</i>	Remote Sensing and GIS (25%)	
3.75 ECTS	<i>EITHER: Igneous 1 OR Maths Methods 3 (25%)</i>	Earth Resources (25%)	Structural Geology 2 (25%)	Projects, Tutorials and Workshops 2 (25%)
	15 ECTS	15 ECTS	15 ECTS	15 ECTS

Year Three (33.3r%)				
Element	Theory 1 (20%)	Electives (35%)	Independent Project(25%)	Coursework, Practical & Synopsis (20%)
3.75 ECTS	<i>Four modules from elective group (A) (25% each)</i>	<i>Seven modules from elective group (B) (14.28r% each)</i>	Independent Geology/Geophysics Project (Year 3) (100%)	<i>EITHER: Ore Deposits OR Hydrogeology and Fluid Flow 1 (25%)</i>
3.75 ECTS				<i>EITHER: Earth Science Synthesis OR Field Geology 4 (50%)</i>
3.75 ECTS				
3.75 ECTS				Earth Science General Paper (Year 3) (25%)
3.75 ECTS				
3.75 ECTS				
3.75 ECTS				
	15 ECTS	26.25 ECTS	18.75 ECTS	15 ECTS

Year Four (33.3r%)			
Element	MSci Project (40%)	Electives (40%)	Coursework, Practical & Synopsis (20%)
3.75 ECTS	MSci Project (100%)	Seven modules from elective group (C) (12.5% each)	<i>EITHER:</i> Research Conference <i>OR:</i> Field Geology 5 (50%)
3.75 ECTS			
3.75 ECTS			Earth Science General Paper (Year 4) (50%)
3.75 ECTS			
3.75 ECTS			
3.75 ECTS			
3.75 ECTS			
3.75 ECTS			Science Communication (12.5%)
3.75 ECTS			
	30 ECTS	30 ECTS	15 ECTS

Indicative Module List

Elective modules in year three and year four are offered Bi-annually and will therefore only be available in alternate years.

Code	Title	Core/ Elective	Year	L&T Hours	Ind. Study Hours	Place- ment Hours	Total Hours	% Written Exam	% Course- work	% Practical	FHEQ Level	ECTS
ESE 1.02	Chemistry for Geoscientists	ELECTIVE	1	24	69.75	0	93.75	100%	0%	0%	4	3.75
ESE 1.04	Physics for Geoscientists	ELECTIVE	1	24	69.75	0	93.75	100%	0%	0%	4	3.75
ESE 1.07	Maths 0	ELECTIVE	1	24	69.75	0	93.75	100%	0%	0%	4	3.75
ESE 2.03	Dynamic Earth A	CORE	1	24	69.75	0	93.75	100%	0%	0%	4	3.75
ESE 2.04	Stratigraphy	CORE	1	24	69.75	0	93.75	100%	0%	0%	4	3.75
ESE 2.05	Introduction to Field Geology	CORE	1	36	26.5	0	62.5	0%	100%	0%	4	2.50
ESE 2.07	Earth Materials	CORE	1	24	69.75	0	93.75	100%	0%	0%	4	3.75
ESE 2.08	Igneous and Metamorphic Processes	CORE	1	24	69.75	0	93.75	100%	0%	0%	4	3.75
ESE 2.09	Life and Earth History	ELECTIVE	1	24	69.75	0	93.75	100%	0%	0%	4	3.75
ESE 2.10	Maths Methods 1	ELECTIVE	1	24	69.75	0	93.75	100%	0%	0%	4	3.75
ESE 2.12	Optical Mineralogy and Petrology	ELECTIVE	1	24	69.75	0	93.75	100%	0%	0%	4	3.75
ESE 2.14	Field Geology 1	CORE	1	112	13	0	125	0%	100%	0%	4	5.00
ESE 2.15	Projects, Tutorials and Workshops 1	CORE	1	44	49.75	0	93.75	0%	100%	0%	4	3.75
ESE 2.16	Structural Geology 1	CORE	1	24	69.75	0	93.75	100%	0%	0%	4	3.75
ESE 2.18	Programming for Geoscientists	CORE	1	24	69.75	0	93.75	100%	0%	0%	4	3.75

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Code	Title	Core/ Elective	Year	L&T Hours	Ind. Study Hours	Place- ment Hours	Total Hours	% Written Exam	% Course- work	% Practical	FHEQ Level	ECTS
ESE 2.19	Graphics & Statistics for Geoscientists	CORE	1	24	69.75	0	93.75	0%	100%	0%	4	3.75
ESE 2.24	Physical Processes	ELECTIVE	1	24	69.75	0	93.75	100%	0%	0%	4	3.75
ESE 2.27	Surface Processes	CORE	1	24	69.75	0	93.75	100%	0%	0%	4	3.75
ESE 3.06	Solid Earth Geochemistry	ELECTIVE	1	24	69.75	0	93.75	100%	0%	0%	5	3.75
ESE 3.09	Numerical Methods 1	ELECTIVE	1	24	69.75	0	93.75	100%	0%	0%	5	3.75
ESE 3.31	Maths Methods 2	ELECTIVE	1	24	69.75	0	93.75	100%	0%	0%	5	3.75
ESE 2.10	Maths Methods 1	ELECTIVE	2	24	69.75	0	93.75	100%	0%	0%	4	3.75
ESE 2.24	Physical Processes	ELECTIVE	2	24	69.75	0	93.75	100%	0%	0%	4	3.75
ESE 3.01	Applied Geophysics 1	ELECTIVE	2	24	69.75	0	93.75	100%	0%	0%	5	3.75
ESE 3.02	Global Geophysics	ELECTIVE	2	24	69.75	0	93.75	100%	0%	0%	5	3.75
ESE 3.03	Earth Resources	CORE	2	24	69.75	0	93.75	100%	0%	0%	5	3.75
ESE 3.04	Field Geology 2	ELECTIVE	2	88	5.75	0	93.75	0%	100%	0%	5	3.75
ESE 3.06	Solid Earth Geochemistry	ELECTIVE	2	24	69.75	0	93.75	100%	0%	0%	5	3.75
ESE 3.11	Palaeontology 1	ELECTIVE	2	24	69.75	0	93.75	100%	0%	0%	5	3.75
ESE 3.12	Projects, Tutorials and Workshops 2	CORE	2	40	53.75	0	93.75	0%	100%	0%	5	3.75

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Code	Title	Core/ Elective	Year	L&T Hours	Ind. Study Hours	Place- ment Hours	Total Hours	% Written Exam	% Course- work	% Practical	FHEQ Level	ECTS
ESE 3.13	Remote Sensing and GIS	CORE	2	24	69.75	0	93.75	100%	0%	0%	5	3.75
ESE 3.14	Sedimentary Geology	ELECTIVE	2	24	69.75	0	93.75	100%	0%	0%	5	3.75
ESE 3.16	Structural Geology 2	CORE	2	32	61.75	0	93.75	100%	0%	0%	5	3.75
EA 3.24	Stratigraphy 2	ELECTIVE	2	24	69.75	0	93.75	100%	0%	0%	5	3.75
ESE 3.25	Field Geology 3	ELECTIVE	2	120	67.5	0	187.5	0%	100%	0%	5	7.50
ESE 3.26	Igneous 1	ELECTIVE	2	24	69.75	0	93.75	100%	0%	0%	5	3.75
ESE 3.27	Metamorphic 1	ELECTIVE	2	24	69.75	0	93.75	100%	0%	0%	5	3.75
ESE 3.31	Maths Methods 2	ELECTIVE	2	24	69.75	0	93.75	100%	0%	0%	5	3.75
ESE 4.14	Structural Geology 3	ELECTIVE	2	24	69.75	0	93.75	100%	0%	0%	6	3.75
ESE 4.48	Low Temperature Geochemistry	ELECTIVE	2	24	69.75	0	93.75	100%	0%	0%	6	3.75
ESE 2.23	Vibrations and Waves	ELECTIVE	2	24	69.75	0	93.75	100%	0%	0%	4	3.75
ESE 3.10	Maths Methods 3	ELECTIVE	2	24	69.75	0	93.75	100%	0%	0%	5	3.75
ESE 3.20	Field Geophysics	ELECTIVE	2	88	5.75	0	93.75	0%	100%	0%	5	3.75
ESE 3.37	Mechanics	ELECTIVE	2	24	69.75	0	93.75	100%	0%	0%	5	3.75
ESE 3.42	Data Processing, Modelling and Interpretation of Morocco Data	ELECTIVE	2	120	67.5	0	187.5	0%	100%	0%	5	7.50

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Code	Title	Core/ Elective	Year	L&T Hours	Ind. Study Hours	Place- ment Hours	Total Hours	% Written Exam	% Course- work	% Practical	FHEQ Level	ECTS
ESE 4.02	Maths Methods 4	ELECTIVE	2	24	69.75	0	93.75	100%	0%	0%	6	3.75
ESE 4.21	Numerical Methods 2	ELECTIVE	2	24	69.75	0	93.75	50%	50%	0%	6	3.75
ESE 4.36	Seismology	ELECTIVE	2	24	69.75	0	93.75	100%	0%	0%	6	3.75
ESE 4.01	Basins and Tectonics	ELECTIVE (A)	3	24	69.75	0	93.75	100%	0%	0%	6	3.75
ESE 4.03	Field Geology 4	ELECTIVE	3 or 4	110	77.5	0	187.5	0%	100%	0%	6	7.50
ESE 4.18	Earth Science Synthesis	ELECTIVE	3	48	139.5	0	187.5	0%	50%	50%	6	7.50
ESE 4.05	Biogeochemistry	ELECTIVE (B/C)	3 or 4	24	69.75	0	93.75	100%	0%	0%	6	3.75
ESE 4.09	Thermodynamics	ELECTIVE (B/C)	3 or 4	24	69.75	0	93.75	100%	0%	0%	5	3.75
ESE 4.12	Dynamic Stratigraphy	ELECTIVE (B/C)	3 or 4	24	69.75	0	93.75	50%	50%	0%	6	3.75
ESE 4.13	Seismic Techniques	ELECTIVE (A)	3	24	69.75	0	93.75	80%	20%	0%	6	3.75
ESE 4.16	Geohazards	ELECTIVE (B/C)	3 or 4	24	69.75	0	93.75	100%	0%	0%	6	3.75
ESE 4.17	Advanced Programming	ELECTIVE (B/C)	3 or 4	24	69.75	0	93.75	100	0	0	6	3.75
ESE 4.19	Physical Oceanography	ELECTIVE (B/C)	3 or 4	24	69.75	0	93.75	100%	0%	0%	6	3.75
ESE 4.22	Climate	ELECTIVE (A)	3	24	69.75	0	93.75	100%	0%	0%	6	3.75
ESE 4.43	Independent Geophysics Project (Year 3)	ELECTIVE	3	264	204.75	0	468.75	0%	100%	0%	6	18.75

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Code	Title	Core/ Elective	Year	L&T Hours	Ind. Study Hours	Place- ment Hours	Total Hours	% Written Exam	% Course- work	% Practical	FHEQ Level	ECTS
ESE 4.24	Independent Geology Project (Year 3)	ELECTIVE	3	264	204.75	0	468.75	0%	100%	0%	6	18.75
ESE 4.25	Solar System Geoscience	ELECTIVE (A)	3	24	69.75	0	93.75	100%	0%	0%	6	3.75
ESE 4.27	Earth Science General Paper (Year 3)	CORE	3	0	93.75	0	93.75	100%	0%	0%	6	3.75
ESE 4.29	Ore Deposits	ELECTIVE	3	24	69.75	0	93.75	70%	30%	0%	6	3.75
ESE 4.32	Geodesy and Geomagnetism	ELECTIVE (B/C)	3 or 4	24	69.75	0	93.75	100	0	0	6	3.75
ESE 4.33	Environmental Impact Assessment	ELECTIVE (B/C)	3 or 4	48	45.75	0	93.75	80%	20%	0%	6	3.75
ESE 4.34	Environmental and Engineering Geology	ELECTIVE (B/C)	3 or 4	24	69.75	0	93.75	80%	20%	0%	6	3.75
ESE 4.35	Hydrogeology & Fluid Flow 1	ELECTIVE	3	24	69.75	0	93.75	80%	20%	0%	6	3.75
ESE 4.46	Ice and Fire	ELECTIVE (A)	3	24	69.75	0	93.75	100%	0%	0%	6	3.75
ESE 4.47	Palaeo and Environmental Magnetism	ELECTIVE (B/C)	3 or 4	24	69.75	0	93.75	100%	0%	0%	6	3.75
ESE 4.48	Low Temperature Geochemistry	ELECTIVE (B/C)	3 or 4	24	69.75	0	93.75	100%	0%	0%	6	3.75
ESE 5.01	Minerals Processing	ELECTIVE (B/C)	3 or 4	24	69.75	0	93.75	75%	25%	0%	7	3.75
ESE 5.02	Advanced Exploration Seismology	ELECTIVE (B/C)	3 or 4	48	139.5	0	187.5	70%	30%	0%	7	7.50
ESE 5.03	Advanced Applied Geophysics	ELECTIVE (B/C)	3 or 4	24	69.75	0	93.75	100%	0%	0%	7	3.75
EA 5.04	Field Geomorphology	ELECTIVE (B/C)	3 or 4	40	53.75	0	93.75	0%	100%	0%	7	3.75

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Code	Title	Core/ Elective	Year	L&T Hours	Ind. Study Hours	Place- ment Hours	Total Hours	% Written Exam	% Course- work	% Practical	FHEQ Level	ECTS
ESE 5.05	Science Communication	CORE	4	19	74.75	0	93.75	0%	50%	50%	7	3.75
ESE 5.07	Field Geology 5	ELECTIVE	4	96	91.50	0	187.50	0%	100%	0%	7	7.50
ESE 5.10	Geodynamics	ELECTIVE (B/C)	3 or 4	24	69.75	0	93.75	0%	100%	0%	7	3.75
ESE 5.11	Hydrogeology & Fluid Flow 2	ELECTIVE (B/C)	3 or 4	24	69.75	0	93.75	80%	20%	0%	7	3.75
ESE 5.12	Basin Analysis	ELECTIVE (C)	4	48	139.50	0	187.50	100%	0%	0%	7	7.50
ESE 5.15	Applied Sedimentology	ELECTIVE (C)	4	48	139.50	0	187.50	100%	0%	0%	7	7.50
ESE 5.18	Remote Sensing and GIS 2	ELECTIVE (B/C)	3 or 4	48	139.5	0	187.5	50%	50%	0%	7	7.50
ESE 5.22	Hydrothermal and Ore Forming Processes	ELECTIVE (B/C)	3 or 4	48	139.5	0	187.5	0%	100%	0%	7	7.50
ESE 5.23	Mining Water and Waste Management	ELECTIVE (B/C)	3 or 4	24	69.75	0	93.75	50%	50%	0%	7	3.75
ESE 5.26	Geomorphology	ELECTIVE (B/C)	3 or 4	24	69.75	0	93.75	100%	0%	0%	7	3.75
ESE 5.27	Earth Systems	ELECTIVE (B/C)	3 or 4	24	69.75	0	93.75	100%	0%	0%	7	3.75
ESE 5.28	MSci Project	CORE	4	128	622	0	750	0%	85%	15%	7	30.00
ESE 5.29	Earth Science General Paper (Yr 4)	CORE	4	0	187.5	0	187.5	100%	0%	0%	7	7.50
ESE 5.31b	Flow and Reactive Transport	ELECTIVE (B/C)	3 or 4	24	69.75	0	93.75	100	0	0	7	3.75
ESE 5.32	Physics of Planet Earth	ELECTIVE (B/C)	3 or 4	24	69.75	0	93.75	90	10	0	7	3.75

Indicative Module List

Elective modules in year three and year four are offered Bi-annually and will therefore only be available in alternate years.

Code	Title	Core/ Elective	Year	L&T Hours	Ind. Study Hours	Place- ment Hours	Total Hours	% Written Exam	% Course- work	% Practical	FHEQ Level	ECTS
ESE 5.61	Research Conference	ELECTIVE	4	24	163.5	0	187.5	0%	100%	0%	7	7.50
N/A	Business for Professional Engineers & Scientists	ELECTIVE (B/C)	3 or 4	Various							6	6.00
N/A	Horizons	ELECTIVE (B/C)	3 or 4	Various							6	6.00

Supporting Information

The Programme Handbook is available at:

<http://www.imperial.ac.uk/engineering/departments/earth-science/current-student-staff-info/ug/>

The Module Handbook is available at:

<http://www.imperial.ac.uk/engineering/departments/earth-science/current-student-staff-info/ug/>

The College's entry requirements for undergraduate programmes can be found at:

www.imperial.ac.uk/study/ug/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:

<http://www3.imperial.ac.uk/registry/proceduresandregulations/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". Further details can be found at:

<http://www.imperial.ac.uk/admin-services/secretariat/college-governance/charters-statutes-ordinances-and-regulations/>

Imperial College London is regulated by the Higher Education Funding Council for England (HEFCE).

Further details can be found at:

<http://www.hefce.ac.uk/reg/of/>

Inserted missing details in module list for the module ESE 4.18 Earth Science Synthesis

N/A

N/A

N/A