

BSc Biological Sciences with Management

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)	BSc		
Associateship	Associateship of the Royal College of Science (ARCS)		
Programme Title	Biological Sciences with Management		
Programme code	C1NG		
Awarding Institution	Imperial College London		
Teaching Institution	Imperial College London		
Faculty	Faculty of Natural Sciences		
	Imperial College Business School		
Department	Department of Life Sciences		
	Imperial College Business School		
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	Biosciences		
	General Business and Management		
Total Credits	ECTS:	240	CATS: 480
FHEQ Level	Level 6		
EHEA Level	1 st cycle		
External Accrator(s)	AMBA EQUIS AACSB International		

Specification Details	
Student cohorts covered by specification	2016/17
Person(s) responsible for the specification	Dr Huw Williams (Life Sciences)
	Ms Veronica Russell (Business School)
Date of introduction of programme	
Date of programme specification/revision	August 2016
Description of Programme Contents	
<p>All students on Biological Sciences programmes follow the same core modules in the first year of study. The first year course covers the basic core areas of biology. In the first term, there are also classes in key scientific skills such as information retrieval, literature referencing, and statistics. As the years progress, you will begin to specialise further according to your chosen degree programme or individual optional module choices.</p> <p>To encourage a wider outlook, in the second year you will be asked to choose one of the humanities courses offered by the Centre for Languages, Culture and Communication, which includes a wide range of language options.</p> <p>All students have the opportunity to attend field courses, including the popular African Biology Field Course which takes place in South Africa.</p> <p>The four-year BSc in Biological Sciences with Management (C1NG) is identical to C100 for the first three years. This is followed by a year in Imperial College Business School. This year aims to prepare students for a career in business management, management services or management consultancy in the private or public sectors in the UK, Europe or worldwide.</p>	
Learning Outcomes	
<p>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</p>	
<p>Knowledge and Understanding of:</p> <ul style="list-style-type: none"> • Basic biological chemistry; cell biology and genetics; organismal biology; ecology, and evolution (Year 1); • Applied molecular biology, including bioinformatics; genetics statistics; and chosen subject areas (Year 2); • The economic, financial and organisational framework within which business enterprises operate, and the functional issues that arise in the management of business activities; • The management of innovation in a modern organisation including the implications of technology • The roles and behaviour of people working in organisations; • The key issues in contemporary human resource management and an appreciation of the theory and research which underpins these issues; 	

- The strategic decisions faced by the top management team of an organisation;
- The operations and control of projects, production and service activities;
- The techniques of financial and managerial accounting and their relevance to the broader issues of management decision-making and control;
- A theoretical framework for analysing key financial markets and an understanding of how they interact with the key decisions of firms;
- The business and economic environment including the ways in which the government responds and shapes the economic environment and how this can be anticipated;
- The key marketing concepts and principles of marketing analysis;
- The management problems that are either unique to international business or arise in particular complex or acute forms in business that span national boundaries;
- The issues associated with evaluating the viability of new technologies, new products or services in the fields of medicine and science.

Intellectual Skills (thinking) skills - able to:

- Analyse and solve biology-based problems;
- Integrate and evaluate information;
- Formulate and test hypotheses using appropriate experimental design and statistical analysis of data;
- Analyse, interpret and evaluate new and/or abstract data and situations without guidance;
- Use a wide range of appropriate techniques and transform data and concepts into novel solutions;
- Read, interpret and analyse published accounts and to evaluate the well-being and potential of a company using ratio analysis;
- Anticipate likely changes in policy and economic conditions given the current economic and political environment.

Practical Skills – able to:

- Plan and execute safely a series of experiments;
- Use laboratory and field-based methods to generate data;
- Analyse experimental results and determine their strength and validity;
- Prepare technical reports;
- Give technical presentations;
- Use the scientific literature effectively;
- Use computational tools and packages;
- Give professional presentations;
- Seek, interpret, present and use data effectively in decision-making;
- Produce creative and realistic solutions to complex problems;
- Use a range of different perspectives to analyse an organisation;
- Identify key issues in human resource management and design a recruitment process and conduct a selection interview;
- Communicate competently with numerical data;
- Participate in managerial decision processes where accounting based information is an important input;
- Assess both the technological and market viability of an idea and select the most appropriate route to market;
- Effectively use Information Technology.

Transferable Skills – able to:

- Communicate effectively through oral presentations, computer processing and presentations, written reports;
- Apply statistical skills;
- Work independently and as part of a team;
- Integrate and evaluate information from a variety of sources;
- Use Information and Communications Technology;
- Manage resources and time;
- Learn independently with open-mindedness and critical enquiry;
- Learn effectively for the purpose of continuing professional development.

Entry Requirements

Academic Requirement	<p>The minimum entry requirements for all Biological Sciences courses are AAA overall at A2 level, to include:</p> <p>A in Biology A in Physics, Chemistry or Mathematics A in an additional subject (excluding Critical Thinking or General Studies)</p> <p>Two AS levels may be acceptable in place of a third A level. This is in addition to Grade B or above in GCSE Mathematics, Chemistry, Biology (or Combined Sciences) and English Language (or an overall score of 7.0 in IELTS with 6.5 in each element).</p>
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Non-academic Requirements	None
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Offers for our Biochemistry, Biotechnology and Biological Sciences courses are made based on information supplied on the UCAS form. Generally, we do not hold interviews.

English Requirement	IELTS 7.0 with a minimum of 6.5 in each element or equivalent
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The programme's competency standards documents can be found at:
<http://www.imperial.ac.uk/students/academic-support/graduate-attributes/>

Learning & Teaching Strategy	
Scheduled Learning & Teaching Methods	<ul style="list-style-type: none"> • Laboratory • Lectures • Tutorials • Seminars • Practical classes and field work • Equipment/technique demonstrations • Workshops, • Case studies • Group work exercises • Formal presentations
E-learning & Blended Learning Methods	<ul style="list-style-type: none"> • Computer-based work • Fieldwork • Pre-programme VLE modules • On-line discussion forums • On-line lecture materials • Interactive content including video and module quizzes
Project and Placement Learning Methods	<ul style="list-style-type: none"> • Group project • Research project/dissertation • Site visits
Assessment Methods	<ul style="list-style-type: none"> • Written Examinations • Coursework • Continuous assessments • Multiple Choice Tests • Case Studies Participation • Laboratory write-ups • Essays • Reports • Dissertations • Presentations • Individual research project report • Viva

Academic Feedback Policy

Coursework feedback is provided by a feedback form attached to items of coursework. Feedback is also provided via Blackboard on automatically-assessed pieces of coursework and on formative MCQ quizzes. Personal tutors hold timetabled tutorials at the start of the academic year to give feedback on examination performance and can be approached by their tutees at any point in the year for further guidance. The undergraduate teaching office repeatedly informs individual staff via email when coursework is due back at the appropriate time. The Director of Undergraduate Studies routinely monitors the quality and quantity of feedback provided on marked coursework. In some instances, generic class feedback is returned to all students via email or a Blackboard announcement once coursework is marked.

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

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

Assessment Structure

Marking Scheme

Regulation of Assessment

Minimum pass mark is 40% overall for each course module, which must include a mark of at least 35% in the coursework component and a mark of at least 35% in the examination.

For course modules that include a written examination, coursework typically contributes 20- 25% of the total marks available. Assessment details are provided in the First, Second and Third Year Student Handbooks.

The final degree mark is calculated from the mean mark achieved in Years 1, 2, 3 and 4. For students admitted in or after October 2013 weighted 7.1: 21.4: 35.7: 35.7, respectively. For students admitted before October 2013 weighted 5: 25: 35: 35.

To qualify for the award of BSc Honours, students must pass all courses.

Assessment Rules and Degree Classification:

For undergraduate programmes classification of degrees will be according to the following range of marks:

First class 70 - 100%

Second class (upper division) 60 - 69.9%

Second class (lower division) 50 - 59.9%

Third class 40 - 49.9%

Fail 0-39%

Year	% Year Weighting	Module	% Module Weighting
Year One	7.1%	Cell Biology and Genetics	25%
		Ecology and Evolution	25%
		Biological Chemistry and Microbiology	25%
		Biology of Organisms	25%
Year Two	21.4%	Applied Molecular Biology	17%
		Genetics	17%
		Tutored Dissertation	14%
		<i>One module from elective group (A)</i>	14%
		<i>One module from elective group (B)</i>	14%
		<i>One module from elective group (C)</i>	14%
		<i>One module from elective group (D)</i>	10%
Year Three	35.7%	<i>EITHER:</i> Laboratory Based Research Project <i>OR</i> Literature Based Dissertation <i>AND</i> Science Communication	35%
		<i>One module from elective group (E)</i>	21.66r%
		<i>One module from elective group (F)</i>	21.66r%
		<i>One module from elective group (G)</i>	21.66r%
Year Four	35.7%	Group Project	16.66r%
		Accounting, Business Economics	8.33r%
		Business Strategy	8.33r%
		Entrepreneurship	8.33r%
		Finance and Financial Management	8.33r%
		Global Business Management	8.33r%
		Marketing	8.33r%
		Organisational Behaviour and Human Resource Management	8.33r%
		Innovation Management	8.33r%
		Sustainable Business Development	8.33r%

Module List												
Code	Title	Core/ Elective	Year	L&T Hours	Ind. Study Hours	Place- ment Hours	Total Hours	% Written Exam	% Course- work	% Practical	FHEQ Level	ECTS
LS1-BCM	Cell Biology and Genetics	CORE	1	62	313	0	375	75%	8%	17%	4	15.00
LS1-EE	Ecology and Evolution	CORE	1	49	326	0	375	75%	0%	25%	4	15.00
LS1-BCM	Biological Chemistry and Microbiology	CORE	1	67	308	0	375	75%	0%	25%	4	15.00
LS1-OB	Biology of Organisms	CORE	1	59	316	0	375	75%	0%	25%	4	15.00
LS2-TD	Tutored Dissertation	CORE	2	4	208.5	0	212.5	0%	100%	0%	5	8.50
LS2-AMB	Applied Molecular Biology	CORE	2	54	196	0	250	60%	36%	4%	5	10.00
LS2-GEN	Genetics	CORE	2	54.5	195.5	0	250	75%	10%	15%	5	10.00
LS2-BP	Bacterial Physiology	ELECTIVE (A)	2	68	144.5	0	212.5	75%	5%	20%	5	8.50
LS2-CDB	Cell and Developmental Biology	ELECTIVE (A)	2	48	164.5	0	212.5	75%	25%	0%	5	8.50
LS2-RM	Resource Management	ELECTIVE (A)	2	53	159.5	0	212.5	75%	18%	7%	5	8.50
LS2-BE	Behavioural Ecology	ELECTIVE (B)	2	65	147.5	0	212.5	75%	0%	25%	5	8.50
LS2-VIR	Virology	ELECTIVE (B)	2	38	174.5	0	212.5	75%	15%	10%	5	8.50
LS2-ECO	Ecology	ELECTIVE (C)	2	60	152.5	0	212.5	75%	13%	12%	5	8.50
LS2-IMMBIO	Immunology	ELECTIVE (C)	2	40	172.5	0	212.5	75%	7%	18%	5	8.50

Module List												
Code	Title	Core/ Elective	Year	L&T Hours	Ind. Study Hours	Place- ment Hours	Total Hours	% Written Exam	% Course- work	% Practical	FHEQ Level	ECTS
LS2-PARA	Parasitology	ELECTIVE (C)	2	39	173.5	0	212.5	75%	15%	10%	5	8.50
N/A	Horizons	ELECTIVE (D)	2	Various			150	Various				6.00
N/A	Business for Professional Engineers & Scientists	ELECTIVE (D)	2	Various			150	Various				6.00
LS3	Lab Based Research Project	CORE*	3	360	165	0	525	0%	100%	0%	6	21.00
LS3	Literature Based Dissertation	CORE*	3	10	315	0	325	0%	100%	0%	6	13.00
LS3	Science Communication	CORE*	3	31	169	0	200	0%	100%	0%	6	8.00
LS3-ATPMB	Plant Biotechnology and Development	ELECTIVE (E)	3	56	269	0	325	75%	9%	16%	6	13.00
LS3-DRIBS	Damage and Repair in Biological Systems	ELECTIVE (E)	3	58.5	266.5	0	325	75%	17%	8%	6	13.00
LS3-M3D	Macromolecules in Three Dimensions	ELECTIVE (E)	3	73	252	0	325	75%	20%	5%	6	13.00
LS3-MM	Medical Microbiology	ELECTIVE (E)	3	52	273	0	325	75%	5%	20%	6	13.00
LS3-SCRA	Stem Cells, Regeneration and Ageing	ELECTIVE (E)	3	50	275	0	325	75%	0%	25%	6	13.00
LS3-PCE	Population and Community Ecology	ELECTIVE (E)	3	38	287	0	325	75%	10%	15%	6	13.00
LS3-NR	Neuroscience Research	ELECTIVE (E)	3	46	279	0	325	75%	5%	20%	6	13.00
LS3-TBFC	African Biology Field Course	ELECTIVE (E)	3	99	226	0	325	33%	67%	0%	6	13.00

Module List												
Code	Title	Core/ Elective	Year	L&T Hours	Ind. Study Hours	Place- ment Hours	Total Hours	% Written Exam	% Course- work	% Practical	FHEQ Level	ECTS
LS3-MNE	Metabolic and Network Engineering	ELECTIVE (E)	3	62	263	0	325	75%	9%	16%	6	13.00
LS3-ATII	Advanced Topics in Immunity and Infection	ELECTIVE (F)	3	57	226	0	325	33%	67%	0%	6	13.00
LS3-MPMI	Symbiosis, Plant Immunity and Disease	ELECTIVE (F)	3	48	277	0	325	75%	17.50%	7.50%	6	13.00
LS3-BCB	Biodiversity and Conservation Biology	ELECTIVE (F)	3	52	273	0	325	75%	22%	3%	6	13.00
LS3-ATPVB	Advanced Topics in Parasitology and Vector Biology	ELECTIVE (F)	3	43.5	281.5	0	325	75%	22%	3%	6	13.00
LS3-EB	Evolutionary Biology	ELECTIVE (F)	3	51	274	0	325	75%	14%	11%	6	13.00
LS3-ISB	Integrative Systems Biology	ELECTIVE (F)	3	73	252	0	325	75%	5%	20%	6	13.00
LS3-MGE	Mechanisms of Gene Expression	ELECTIVE (F)	3	38	287	0	325	75%	10%	15%	6	13.00
LS3-CANCER	Cancer	ELECTIVE (F)	3	56	269	0	325	75%	5%	20%	6	13.00
LS3-EPI	Epidemiology	ELECTIVE (G)	3	44.5	280.5	0	325	75%	12.50%	12.50%	6	13.00
LS3	Synthetic Biology	ELECTIVE (G)	3	52	273	0	325	75%	10%	15%	6	13.00
LS3	Biodiversity Genomics	ELECTIVE (G)	3	40	285	0	325	75%	10%	15%	6	13.00
LS3-MBBI	Molecular Basis of Bacterial Infection	ELECTIVE (G)	3	53	272	0	325	75%	0%	25%	6	13.00

Module List												
Code	Title	Core/ Elective	Year	L&T Hours	Ind. Study Hours	Place- ment Hours	Total Hours	% Written Exam	% Course- work	% Practical	FHEQ Level	ECTS
LS3-BAP	Biotechnology Applications of Proteins	ELECTIVE (G)	3	62	263	0	325	75%	5%	20%	6	13.00
LS3-GCB	Global Change Biology	ELECTIVE (G)	3	44	281	0	325	75%	17%	8%	6	13.00
LS3-BIOINF	Bioinformatics	ELECTIVE (G)	3	61	264	0	325	75%	20%	5%	6	13.00
LS3-MG	Medical Glycobiology	ELECTIVE (G)	3	63	262	0	325	75%	16.50%	8.50%	6	13.00
LS3-SN	Systems Neuroscience	ELECTIVE (G)	3	44	281	0	325	75%	12.50%	12.50%	6	13.00
BS0600	Group Project	CORE	4	0	250	0	250	0%	100%	0%	6	10.00
BS0601	Accounting	CORE	4	32	93	0	125	70%	30%	0%	6	5.00
BS0602	Business Economics	CORE	4	27	98	0	125	70%	30%	0%	6	5.00
BS0603	Business Strategy	CORE	4	22	103	0	125	70%	30%	0%	6	5.00
BS0606	Entrepreneurship	CORE	4	22	103	0	125	60%	40%	0%	6	5.00
BS0607	Finance and Financial Management	CORE	4	27	98	0	125	70%	30%	0%	6	5.00
BS0609	Global Business Management	CORE	4	22	103	0	125	70%	30%	0%	6	5.00
BS0611	Marketing	CORE	4	22	103	0	125	70%	30%	0%	6	5.00
BS0612	Organisational Behaviour and Human Resource Management	CORE	4	22	103	0	125	70%	30%	0%	6	5.00

Module List												
Code	Title	Core/ Elective	Year	L&T Hours	Ind. Study Hours	Place- ment Hours	Total Hours	% Written Exam	% Course- work	% Practical	FHEQ Level	ECTS
BS0616	Innovation Management	CORE	4	22	103	0	125	70%	30%	0%	6	5.00
BS0618	Sustainable Business Development	CORE	4	22	103	0	125	70%	30%	0%	6	5.00
BS0690	Accounting Primer	CORE	4	10	15	0	25	N/A			0.00	
BS0691	Pre-Programme Maths	CORE	4	10	15	0	25	N/A			0.00	
BS1314	Study Skills	CORE	4	10	15	0	25	N/A			0.00	
BS1317	Plagiarism Awareness	CORE	4	10	15	0	25	N/A			0.00	

*See Y3 table on page 6 (above)

Supporting Information

The Programme Handbook is available at: <http://www.imperial.ac.uk/life-sciences/undergraduate/biology/>

The Module Handbook is available at: <http://www.imperial.ac.uk/life-sciences/undergraduate/biology/>

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 programme is consistent with the Qualifications Framework of the European Higher Education Area which is available at: <http://www.ehea.info/Uploads/qualification/QF-EHEA-May2005.pdf>