

Department of Life Sciences

Biochemistry/Biotechnology 1st Year Guidebook
2018-19



Welcome

Welcome to the Department of Life Sciences. We hope that you will have an enjoyable and successful time at Imperial College. This handbook contains information that is vital to your studies and will also provide you with the answer to most queries, so please read the information carefully and maintain the handbook for future reference.

If you have any queries or you encounter any issues during your studies at Imperial then you can visit the Education Office located in Room 202 of the Sir Ernst Chain Building. The staff in this office can provide you with the information or direct you to the right person to help. Changes to timetables and information on courses and examinations will be issued by the Education Office.

The Education Office is open to students Monday to Friday (9:15 - 17:15)

You can keep up to date with news and events within the department, and explore further information on the department's webpages: [Department of Life Sciences](#)



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Structure of Year One

1. Year One consists of four academic courses

Biological Chemistry (BC)

Cell Biology (CB)

Proteins and Enzymes (PE)

Molecular Biology (MB)

2. Year One is taught and examined in two parts

BC and CB are taught in weeks 1 to 12, examined in week 14 (January).

PE and MB are taught in weeks 16 to 28, examined in weeks 29+30 (June).

3. Year One provides time for structured private study

There are about 40 lectures per course to allow time for private study.

4. Each course has associated small-group tutorials with academic staff

All tutorials have clear objectives and teaching materials. They are designed to support the lectured material, and improve your analytical skills.

Most tutorials are problem-oriented, with problems collated by course conveners and made available in advance of the tutorial.

Specific tutorials teach essay-writing skills, criticism of research papers, presentation skills, *etc.*, and some will be used to discuss your essay submissions.

The Library will provide support in information literacy through lectures and hands-on sessions.

5. Each course has associated practicals, designed to serve a distinct purpose

Some practicals are formatively assessed (*i.e.* do not contribute to your coursework grade), and some practicals are summatively assessed (*i.e.* they do contribute to your coursework grade credit).

Formative practicals in pipetting, microscopy, *etc.*, are scheduled, with lectures to support them.

6. Personal tutorials and some lectures are scheduled to develop general skills

Personal tutorials are scheduled, with rooms, times, and objectives for each.

Proposed Changes:

Revision and exams

Time management

Second year options, planning CVs and careers

Additional sessions run by the Senior Tutor, First Year Convenor, Library and other staff will cover revision, study skills, safety, information literacy, careers guidance, and general induction to College and the Department.

General Learning Objectives for Biochemistry/Biotechnology Year One

Learning skills

Induction sessions, personal tutorials and peer-assisted learning sessions enable students to:

- Transition from school to university styles of teaching and learning;
- Become familiar with College rules, procedures and sources of support;
- Establish a viable approach to time management;
- Develop appropriate ways of taking, reviewing and editing notes;
- Learn to seek out information from multiple sources;
- Understand and make use of different forms of feedback.

Communication and interaction skills

Through marked essays, practical reports and group presentations as well as problem classes and tutorials, students learn how to:

- Explain scientific information in writing and diagrams;
- Communicate about science in verbal presentations;
- Work with diverse groups of colleagues in a supportive and productive way;
- Appreciate the importance of proper attribution and the need to avoid plagiarism.

Laboratory skills

In practical sessions, students master:

- Safe working practices;
- Common laboratory procedures, including pipetting, use of spectrophotometers, microscopes and pH meters, sterile technique, cell culture and chromatography;
- Protocol preparation and experimental design;
- Note taking and recording of data.

Computer skills and information technology

Computer classes, marked practical reports and essays are used to teach:

- Use of Excel, PowerPoint and molecular graphics programs to organise, analyse and display scientific information;
- Approaches to locating information on the internet;
- Application of online bioinformatics tools.

Mathematical skills

Lectures, problem sheets, problem classes and marked practical reports ensure that students have knowledge of:

- Basic concepts of algebra;
- Calculus essential for the biosciences;
- Use of units and significant figures in calculations;
- Simple statistics and modelling;
- Sources and types of errors and the meaning of statistical significance.

Mastery of scientific information

Specific learning objectives for each of the four courses are provided on the individual course pages.

Learning Objectives for Individual Biochemistry Year One Courses

Biological Chemistry

By the end of this course students should be familiar with the major classes of biological molecules and the types of bonds that occur in biological systems. They should appreciate the importance of energy transformation in biology. They should understand the main types of chemical reactions that are relevant to biological systems. They should be familiar with the chemistry of glycolysis and respiration and have an understanding of the major metabolic pathways used to interconvert biological molecules as well as the regulation and control of metabolism at the level of cells and organisms.

Cell Biology

Students should question and understand the organisation of a typical eukaryotic cell, and how this differs from that of a typical prokaryote. They should be familiar with the structure and functions of the major eukaryotic organelles (including the nucleus, endoplasmic reticulum, Golgi, lysosomes and peroxisomes), and be aware of the roles of biological membranes in compartmentalisation of cell functions. Students should understand the different mechanisms of transport of ions, solutes and macromolecules across membranes, as well as intracellular macromolecular transport. The mechanisms of regulating cell shape, adhesion, movement, division and survival will also be discussed.

Molecular Biology

Students should become familiar with, and understand, the structures of nucleic acids, their functions in vivo, and how they can be manipulated in vitro. They should understand the concept of the “central dogma” and the mechanisms that lead ultimately to the production of proteins. The concept of the gene, both as a segment of DNA that can be transcribed and as a heritable trait, should be clear. Students should understand how to map genes in both eukaryotes and prokaryotes. They should gain grounding in the essential methods of nucleic acid manipulation which lead on to whole genome analyses.

Proteins and Enzymes

Students should know the structures of all 20 common amino acids found in proteins and have a good understanding of the chemical reactivities of the amino acid side chains. They should understand the levels of structure in a protein and have a basic knowledge of how proteins are purified and sequenced. Students should understand how enzymes function and the kinetic implications of enzymatic mechanisms. Organic reaction mechanisms are reviewed with an emphasis on biochemically relevant molecules and functional groups. Students should be able to apply these concepts to enzyme catalysis and have a good understanding of the mechanisms of several key enzymes. Students should be aware of the factors that affect the rates of enzyme-catalysed reactions and be able to calculate important thermodynamic and kinetic parameters. They should have a thorough understanding of biochemical reactions from both mechanistic and kinetic perspectives and be familiar with the roles of co-enzymes. They should have a basic understanding of control of enzyme activity.

Each course is equally important in determining first year performance and each is assessed as 15 ECTS credits.

Synopses of First Year Courses

Biological Chemistry

Course Aims

The aim of this course, which is scheduled in the first half of the first year, is to give students an appreciation of the ways that living systems obey the fundamental laws of nature. We aim to make students knowledgeable about the way energy is handled in biological systems, the major chemical transformations that occur in cells and the regulation and control of these metabolic pathways. The goal is to help students to develop a quantitative as well as a descriptive understanding of how it is possible to meet the requirements of life within the constraints of the laws of chemistry and physics.

Course Objectives

By the end of this course students should be familiar with the major classes of biological molecules and the types of bonds that occur in biological systems. They should appreciate the importance of energy transformation in biology. They should understand the main types of chemical reactions that are relevant to biological systems. They should be familiar with the chemistry of glycolysis and respiration and have an understanding of the major metabolic pathways used to interconvert biological molecules as well as the regulation and control of metabolism at the level of cells and organisms.

Course Content

The course begins with an overview of biological molecules, followed by three main sections. The first section is devoted to the physical and chemical background needed to understand biological chemistry, including thermodynamics, membrane potentials, atomic structure, bonding, oxidation-reduction reactions, isomerism and organic reaction mechanisms. The application of these principles is illustrated using as examples basic concepts of how proteins are assembled and how they function. In the second section, this knowledge is used as a basis for understanding bioenergetics by considering glycolysis and the citric acid cycle followed by electrochemical potential, respiration, oxidative phosphorylation and the control of ATP production. Finally, the concepts of chemical transformations of biological molecules are expanded to explain generation and metabolism of carbohydrates, lipids and amino acids and the control of these processes.

Practical work includes training in safe laboratory practice, pH measurement and buffer action, spectrophotometry/enzyme action and ligand binding.

45 lectures	2 computing classes	3 multiple choice quizzes
4 tutorials	1 molecular graphics class	
3 problem-solving classes	3 laboratory practicals	

Assessment

A) Three laboratory practical reports (8.3% each) totalling to 25% of the course mark.

B) One three-hour paper worth 75% of the course mark consisting of a section containing 10 compulsory short answer questions (40% of the paper) and a section containing 8 essay/problem questions, of which 4 must be answered (60% of paper).

Key skills acquired

An improved understanding of structural and physical chemistry in the context of biological processes; an appreciation of good laboratory practice; presentation and writing skills from preparing practical reports; improved problem solving and quantitative skills; ability to manipulate simple molecules and to analyse and present data using computer graphics and calculation packages.

Course Aims

This course aims to introduce students to the cellular context in which biochemical reactions take place by taking a tour through typical and specialised cells. Students will gain fundamental foundation knowledge about the structure and functioning of eukaryotic and prokaryotic cells. The course will also contain highlights of current cell biological research including what is being done at Imperial and its clinical relevance. Throughout the course, we will also discuss the differences between school and University study and develop your understanding of what Imperial values in your academic work.

Course Objectives

To question and understand the organisation of a typical eukaryotic cell, and how this differs from that of a typical prokaryote. To become familiar with the structure and functions of the major eukaryotic organelles (including the nucleus, endoplasmic reticulum, Golgi, lysosomes and peroxisomes), and be aware of the roles of biological membranes in compartmentalisation of cell functions. Students should understand the different mechanisms of transport of ions, solutes and macromolecules across membranes, as well as intracellular macromolecular transport. The mechanisms of regulating cell shape, adhesion, movement, division and survival will also be discussed.

Course Content

Lectures: about 35 core + discussions about University study techniques, writing and assessment

Non-assessed (formative) laboratory session and 4 assessed practicals

Academic writing practice coursework with self and peer review

Academic tutorials: 4

Independent study: to understand the taught CB and draw links between parts of CB and your other first year courses. To develop your questioning ability and to use feedback you receive to improve your future work and develop your skills.

Online course group for discussion (this information is then posted on Blackboard too)

In person meetings, 'learning clinics' and online support from course leader [Dr Anita Hall](#)

Assessment

Coursework, 25% Academic writing: Part 1a+b (600 words with self and peer reviewing) and Part 2 (an essay), 6.5% each. Four practical write-ups, 3% each

Examination, 75% One three hour paper with 2 sections. Section A is 25 multiple choice questions (MCQs), for 25% of the marks. Section B is a free choice of three essay style answers from seven questions for 75% of the marks

Key Skills Acquired as you work at CB include: engaging with, questioning and understanding new molecular and cellular information. Improved understanding of University study and life, time management and written and verbal communication skills including effective small teamwork. Problem-solving and discussion skills as you talk about cell biology and research in general with Imperial academics during tutorials. Insight into Imperial College Biochemistry study, feedback, marking criteria and other assessment processes. Experimental techniques used during the course include protein bioinformatics, cell culture and microscopy with students analysing and interpreting a range of experimental results.

Course Aims

This first year course aims to introduce undergraduates, some of whom have little or no background knowledge of biology, to the basic concepts of genetics, how they relate to biochemistry and how they underpin much of molecular biology. We hope to make students understand how molecular biology techniques can and are being applied to study almost every area of biochemistry and biology and driving whole genome studies.

Course Objectives

Students should become familiar with, and understand, the structures of nucleic acids, their functions in vivo, and how they can be manipulated in vitro. They should understand the concept of the “central dogma” and the mechanisms that lead ultimately to the production of proteins. The concept of the gene, both as a segment of DNA that can be transcribed and as a heritable trait, should be clear. Students should understand how to map genes in both eukaryotes and prokaryotes. They should gain grounding in the essential methods of nucleic acid manipulation which lead on to whole genome analyses.

Course Content:

Lectures in the Spring Term introduce the properties of nucleic acids and their functions as genes and during gene expression. The techniques used to isolate and analyse nucleic acids are discussed, and students prepare and analyse plasmid DNA from bacteria and genomic DNA from fruitflies. The principles of gene cloning and the place of genetics in everyday life are discussed. The behaviour of genes and of chromosomes are presented in the context of whole organisms rather than pieces of DNA. Genes, genomes and genetic mapping are discussed using examples from the genetics of prokaryotes and eukaryotes and further illustrated in practicals on bacterial and human genetics in the Spring and Summer Terms.

Lectures: 47

Practicals: 3 (2 - 4 afternoons each) Tutorials

Spring Term: DNA structure and DNA integrity using students as building blocks

Pub Quiz: The Central Dogma

Small group tutorials on essay writing and restriction mapping of DNA.

Summer Term: Human genetics: taste and other heritable traits

Genetics Jeopardy

Small group tutorials on essay writing and genetics problems.

Exam tutorial: an afternoon going through the previous years exam

Assessment

A) Seven items of coursework for an overall 25% of course mark:

Electrophoresis 15.833%

Essay 15.833%

Bacterial Gen 15.833%

MCQ Spring 15.833%

Human Genetics 15.833%

Problem 15.833%

American Scientific Mini Seminar 5%

B) One three hour paper worth 75% of course mark consisting of: a section of 25 MCQs worth 25 marks (compulsory), a problem section with two questions (1 of which must be answered, worth 25 marks) and two sections of 4 essay-style questions (1 to be answered from each section, each worth 25 marks)

C) Students also give two ‘mini seminars’ (10 minute presentations) in the Spring & Summer terms. These seminars are assessed. The marks are added to the coursework mark of the Molecular Biology (5% of coursework mark).

Key Skills Acquired

Qualitative and subject-specific skills (for example enzymology, microbiology and gene cloning) and in particular an ability to apply genetic analysis will be acquired that could be used in studying development, cell biology, neurobiology, medicine, etc. Presentation and writing skills will be gained from preparing essays and practical reports while quantitative skills will be gained from analysis of practical results and in problem sessions.

Proteins and Enzymes

Course Aims

This course, which runs throughout the second half of the first year, builds on the fundamental concepts covered in Biological Chemistry to give more detailed insights into the molecular processes occurring in living systems. We intend that by the end of the year students will have a good understanding of biochemical reactions and be able to recognise functionally significant parts of complex molecular machinery. They should have an appreciation of molecular recognition and some understanding of the exquisite degree of control over chemical reactivity that must be exercised in living systems.

Course Objectives

Students should know the structures of all 20 common amino acids found in proteins and have a good understanding of the chemical reactivities of the amino-acid side chains. They should understand the levels of structure in a protein and have a basic knowledge of how proteins are purified and sequenced. Students should understand how enzymes function and the kinetic implications of enzymatic mechanisms. Organic reaction mechanisms are reviewed with an emphasis on biochemically relevant molecules and functional groups. Students should be able to apply these concepts to enzyme catalysis and have a good understanding of the mechanisms of several key enzymes. Students should be aware of the factors that affect the rates of enzyme-catalysed reactions and be able to calculate important thermodynamic and kinetic parameters. They should have a thorough understanding of biochemical reactions from both mechanistic and kinetic perspectives and be familiar with the roles of co-enzymes. They should have a basic understanding of control of enzyme activity.

Course Content

Lectures in the spring term focus initially on protein chemistry, including amino-acid, peptide and protein structures and strategies for primary structure determination, then an introduction to Bioinformatics. This is followed by lectures on general enzymology, including the use of kinetic equations to describe enzyme-catalysed reactions, and on enzyme catalysis. Lectures in the summer term focus on enzyme mechanisms, the regulation of enzyme activity and bio-organic mechanisms (including a discussion of the key reaction mechanisms associated with the pathways covered in metabolism in Biological Chemistry, especially those involving co-enzymes). Throughout the course there is a strong emphasis on problem solving. Laboratory work includes training in safe laboratory practice, data handling, enzyme assays and kinetics plus computer-based practicals using PyMol and Python.

Lectures: 39

Practicals: Five practical sessions over 7 afternoons + three feedback sessions

Other 5 large-group tutorials (15 hours in total) focusing on problem-solving and data-handling

4 1-hour small-group tutorials

Assessment

A) Coursework contributes 25% to the final course mark and includes marks from two practical reports and three assessed MCQ (multiple choice question) tests plus a mini seminar:

Protein Purification: 21.66%

Acid Phosphatase: 21.66%

Bioinformatics: 21.66%

Spring MCQ: 10%

Summer MCQ: 10%

Hall of Fame Mini Seminar: 5%

Maths MCQ 10% (This is the assessed part of the essential Maths Module)

B) A three-hour exam contributes 75% to the course mark and consists of 25 compulsory MCQs (25% of paper) and two sections containing a choice of 8 questions of which 4 in total must be answered, and at least 1 from each section (75% of paper).

C) Students also give one 'mini seminars' (10 minute presentations) in the Spring & Summer terms. These seminars are assessed. The marks are added to the coursework mark of the Proteins & Enzymes (5% of coursework mark).

Key skills acquired

A good understanding of the biochemical reactions that are important for life; an appreciation of protein structure and function; practical skills associated with the purification and analysis of biological substances; development of computational skills for use in bioinformatics and protein structure analysis; the ability to analyse experimental data and to write scientific reports; the further development of problem-solving and quantitative skills.

Essential Maths

Description

This course is intended to provide students in their first year with a set of basic but fundamental mathematical tools. It is not a course designed for or by mathematicians. Rather, it is a course built around the idea of giving you the essential problem-solving tools you will need in your scientific exploration of nature. Whether you need a refresher or a cold start on trigonometry, calculus, statistics or mathematical modeling, this course is for you. You cannot even think of analyzing scientific data without this basic toolkit.

Objectives

To understand and use basic mathematical elements.

To understand and apply basic mathematical techniques, in a context related to quantitative data in biosciences.

To be able to critically read literature containing description and analysis of basic quantitative data in biosciences.

To eliminate any existing *fear* towards simple mathematics and to stimulate curiosity in this direction.

Content

The course is divided in three main modules:

"Data Display" will refresh on basic definitions and practice, such as units, significant figures, fractions, logarithms, trigonometry, and more.

"Basic Calculus" will cover in details essential tools for calculus, such as functions, first and second order equations, algebra, differentiation, and more

"Data Analysis" will discuss important concepts in statistics and hypothesis testing, such as variance, probability, normal distribution, statistical tests, modelling, and more.

Textbook

Mathematics for Biological Scientists, by M.Aitken, B.Broadhurst, S.Hladky (Garland Science, 2010)

Assessment

The contents of this course is the Maths MCQ, which will appear as part of Proteins and Enzymes for assessment purposed only.

Course and Examination Dates

Term	Wk	First Year BIOCHEM/BIOTECH Grid			
Autumn	1	Cell Biology - Anita Hall	Biological Chemistry - Kurt Drickamer		01/10/2018
	2				08/10/2018
	3				15/10/2018
	4				22/10/2018
	5				29/10/2018
	6				05/11/2018
	7				12/11/2018
	8				19/11/2018
	9				26/11/2018
	10				03/12/2018
	11				10/12/2018
		Christmas Vacation			17/12/2018
Spring	14	Cell Biology - Anita Hall	Biological Chemistry - Kurt Drickamer		07/01/2019
	15				14/01/2019
	16	Revision Week			21/01/2019
	17	Cell Biology Exam	Biological Chemistry Exam		28/01/2019
	18	Molecular Biology - Dave Hartley	Proteins and Enzymes - Peter Nixon	Maths - Giovanni Sena	04/02/2019
	19				11/02/2019
	20				18/02/2019
	21				25/02/2019
	22				04/03/2019
	23				11/03/2019
24	18/03/2019				
		Easter Vacation			25/03/2019
Summer	30	Molecular Biology - Dave Hartley	Proteins and Enzymes - Peter Nixon		29/04/2019
	31				06/05/2019
	32				13/05/2019
	33				20/05/2019
	34				27/05/2019
	35	REVISION			03/06/2019
	36	REVISION/Proteins and Enzymes Examination			10/06/2019
	37	REVISION/Molecular Biology Examination			17/06/2019
	38				24/06/2019

Personal Transferable Skills

Personal transferable skills are useful in all areas of academic study, beyond just your subject of study, and provide important preparation for employment and professions. Examples of transferable skills that this course will help you to develop, starting during the first year and continuing in subsequent years, are:

Time management

Taking responsibility for organising your own study, ensuring that you meet deadlines and fitting your academic work in with other extracurricular activities, is a valuable way to learn how to plan and organise time.

Problem solving and analysis of information

Practical and conceptual problems are an integral part of doing science, so developing ways of defining and then solving problems is a continuing exercise. Seeking out information, for instance by locating sources on the internet and then evaluating their reliability, represents another type of analytical skill developed in the course, along with using computer programs as tools for organising and manipulating information. Even learning how best to approach others and get useful answers to questions is a skill that is developed with practice.

Communication and information technology

The emphasis in the course on the ability to explain information and complex concepts in writing and verbally reflects the view that this one of the most widely valued skills in our graduates, useful in practically every activity they may eventually undertake. Communication skills that are developed during the course involve not just words, but also graphical displays and internet pages.

Teamwork

The course also provides extensive opportunities to work together to achieve complex goals in ways that demand all of the other skills listed above.

Guidance and practice in developing these personal transferable skills is provided by many different activities in the course, starting from induction sessions and meeting with your personal tutors during the first week and continuing through all the course components. But you should also not overlook additional opportunities for developing these skills through involvement in the many student societies in the College.

Academic Tutorials

Each first year student will participate in six one-hour academic tutorials in the autumn term, six in the spring term and four in the summer term. The tutorials are each linked to one of the first year courses, Biological Chemistry, Proteins & Enzymes, Molecular Biology or Cell Biology. The first year class will be divided into tutorial groups of about eight students for each tutorial.

You will be given a work/problem sheet in advance of the tutorial and will be expected to have prepared for the tutorial by reading this sheet, working through problem questions and undertaking appropriate reading to be able to and be ready to discuss the topic with the tutor and your fellow students. The tutor will go through the work sheet with the tutorial group and use this as the basis for discussion. In addition to helping you evaluate your understanding of the assigned work, the tutorials also provide an opportunity for you to raise other questions about the course material. Tutors will usually not see the same tutorial group more than once so you will have the opportunity to meet different members of staff.

Other ways to obtain information from the teaching staff about course material

In addition to the timetabled tutorials, there are many opportunities for discussions with the teaching staff on the biochemistry/Biotechnology course. If you are having difficulty understanding particular material or if unsatisfied curiosity remains, it is important to formulate your questions clearly. Just attempting to define a problem can take you part of the way to a solution, and with a good description of a problem staff will be better able to help you. Some of the ways to get help from the teaching staff include:

Members of staff may be able to answer questions after lectures, but they need to be mindful of others waiting to use the lecture theatre.

During practicals and problem classes, members of staff who are present to organise and assist with the laboratory work and problem sheets, are usually happy to discuss related points that have come up in the lectures, as well as related biochemical subjects.

Some members of staff will designate a specific time during the week when they are available to answer questions.

Most members of staff will attempt to respond to e-mail queries, although the responses require some time. In some cases, the response might be in an e-mail and in other cases it might be in the form for clarification to the entire class during lectures or on Blackboard. When requesting help by e-mail, it is particularly important to formulate a precise question that can be answered. It is very difficult to respond to general statements such as 'I didn't understand the lecture on x'.

Horizons Programme

[The Centre for Languages, Culture and Communication](#) provides Horizons/Humanities courses that offer you the opportunity to study subjects, which can make important contributions to your general education. The courses aim to give you practice in ways of thinking about human affairs and creative activity that are not always amenable to the quantitative techniques of science and technology.

Language courses are designed to enable you to understand, speak, read and write in a foreign language (either extending your ability in a language you have learnt before, or introducing you to a new language). In the more advanced courses you will be introduced to scientific and technical forms of the language, and there is also some study of the modern culture, history and institutions of the country or countries involved. These can be taken for degree credit or extra Credit.

Peer Assisted Learning

Autumn Term Schedule

Week 1				
Date	Activity	Time	Groups	Location
Thurs 04 Oct	No PAL	N/A	None	N/A
Week 2				
Thurs 11 Oct	No PAL	N/A	None	N/A
Week 3				
Thurs 18 Oct	PAL Group sessions e.g. Introductory Session – Your Learning Style	12:00-13:00 13:00-14:00 12:00-13:00 13:00-14:00	Group W Group X Group Y Group Z	SAF 462 SAF 462 SECB 701 SECB 701
Week 4				
Thurs 25 Oct	PAL Group sessions e.g. Note taking/time management	12:00-13:00 13:00-14:00 12:00-13:00 13:00-14:00	Group W Group X Group Y Group Z	SAF 121 SAF 121 SECB Link SECB Link
Week 5				
Thurs 01 Nov	PAL Group sessions e.g. Essay planning/ scientific writing	12:00-13:00 13:00-14:00 12:00-13:00 13:00-14:00	Group W Group X Group Y Group Z	SAF 119 SAF 119 SECB Link SECB 701
Week 6				
Thurs 08 Nov	PAL Group sessions e.g. Planning revision/memory strategies	12:00-13:00 13:00-14:00 12:00-13:00 13:00-14:00	Group W Group X Group Y Group Z	SAF 121 SAF 121 SECB Link SECB Link
Week 7				
Thurs 15 Nov	PAL Group sessions e.g. Exam essays compared to coursework essays	12:00-13:00 13:00-14:00 12:00-13:00 13:00-14:00	Group W Group X Group Y Group Z	SAF 121 SAF 121 SECB 701 SECB Link
Week 8				
Thurs 22 Nov	PAL Group sessions e.g. Writing up practicals/displaying data effectively/good presentation tips	12:00-13:00 13:00-14:00 12:00-13:00 13:00-14:00	Group W Group X Group Y Group Z	SAF 121 SAF 121 SECB Link SECB Link

Important Information: [LifeSci Central](#).

LifeSci Central is the central information portal on our Virtual Learning Environment: Blackboard. Herein is contained all of the general information and any forms you may require during your student life. These resources will be updated regularly, so please check back and ensure that you are using the most recent versions available.

[This link will take you directly to LifeSci Central \(Login Required\)](#)

Here, you can also find the Scheme for Honours, Marking Criteria, Placement/Joint Honours Handbooks and the Mitigating Circumstances and Change of Degree forms. There is also information regarding careers, the minutes from the Student Staff Committee meetings, exam timetables and advice on using the college computer systems.

Coursework

Coursework is intended to teach practical skills, to develop an investigative approach to Biochemistry and Biotechnology and to reinforce the assimilation of ideas and terminologies introduced in lectures. Students are advised to make good use of the time allocated for tutorials and problem-solving sessions and to avoid rushing through procedures during practical classes. By monitoring your performance in the assigned work, we can provide feedback that will help you to see what you understand well and what you need to study further. This continuous assessment also contributes to your overall marks for both individual courses and your overall degree.

Assessment of Work

The academic teams use an assessment criteria for both examination and coursework that break down the allocation of marks and ensures that feedback is accurate and representative of the year of study.

The marking criteria are available to view in the [‘Life Sci Central’ Portal](#).

Coursework Deadlines and Submission

Coursework deadlines will be given to you at the start of each course. They will usually be by 1pm on the day specified by your course convenor. Coursework is logged in and out of the Education Office and should not be handed to individual members of staff. Electronic copies of coursework are submitted via the course pages on Blackboard. Hardcopy submissions need to go into the appropriate year group’s Coursework Dropbox outside the Education Office.

Students must ensure that hardcopy submissions are securely stapled and must include a coursework coversheet with a barcode/name sticker that should be securely attached to the front (coversheet and name sticker provided by the Education Office).

Students are encouraged to use a computer to produce coursework. Handwritten work is only acceptable at the discretion of the course convenor, and care should be taken to produce neat and easily read text using blue or black ink. It is recommended that you put page numbers on each sheet and pay careful attention to clear presentation and organisation of your work. **You should always keep a copy of your work for yourself.**

Coursework must be submitted on time; it must be your own properly referenced work; and word-limits must be adhered to where set. You will lose marks if you do not follow these rules. Students who consistently fail to complete coursework or fail to hand it in on time during the year will almost certainly fail the course, irrespective of their performance in the examination at the end of the year.

Personal Tutors will be informed of persistent failure to submit coursework by their Tutees and students can expect to be asked to meet their Tutors to discuss the reasons for their poor performance.

Late Penalties

Coursework must be submitted on time. You will lose marks if you do not follow these rules. In particular, late work will not be accepted and will be capped at a pass mark or receive zero.

Work submitted up to one (1) calendar day after the assessment deadline (date and time) will be marked but capped at the passmark. Work submitted more than one (1) day late will not be accepted as a valid attempt and mark of zero will be recorded. For example, if the assessment deadline is Wed 13:00, work submitted from Wed 13:01 to Thur 13:00 will be marked and capped at the passmark. Work submitted from Thur 13:01 will be given a mark of zero. This one day/24 hour period is inclusive of weekdays and weekends. [The full policy is available here.](#)

Students who consistently fail to complete coursework or fail to hand it in on time during the year will almost certainly fail the course, irrespective of their performance in the examination at the end of the year. Personal Tutors will be informed of failure to submit coursework by their Tutees and students can expect to be asked to meet their Tutors to discuss the reasons for their poor performance.

Coursework Feedback and Marks

Staff will endeavour to mark coursework quickly. Your work will be returned with a percentage mark and normally written comments will be given as feedback on the cover form.

The deadline for return of an item of coursework to you will be clearly advertised in your course guidebooks and be available from the Education Office. The normal deadline for return of coursework is 2 weeks (10 working days in term time) from submission. Occasionally there will be a longer deadline, for example, due to the lengthy nature and /or number of items to mark or because of competing commitments for the lecturer responsible for the marking. However, this will be clearly advertised ahead of the coursework submission deadline. The department runs a Traffic Light system, which displays visually on Blackboard and on departmental monitors whether a particular piece of course work feedback was returned early, early (blue), on time (green) or late (red). For example;

Course	Title	Marker	Submission deadline	Return deadline	Actual return date
Genes and Genomics	Analysis of Cloned Genes	Dr Southall	08/11/16	29/11/16	24/11/16
Fundamentals of Molecular Biochemistry	Protein Purification and NMR Practical	Various	16/12/16	09/01/17	11/01/17
Fundamentals of Molecular Biochemistry	Protein Folding Practical	Dr De Simone	22/12/16	16/01/17	16/01/17

If the feedback and marks are delayed, students will be informed by either email or Blackboard. You will receive your mark as a percentage, and summary of feedback depending on the nature of the assessment.

Hard-copy work which has been marked will usually be returned to your pigeon holes in the Education Office for collection by you. Please collect all work as soon as possible as storage space is limited.

Plagiarism

Plagiarism is the presentation of another person's thoughts, words, images or diagrams as though they were your own. Another form of plagiarism is self-plagiarism, which involves using your own prior work without acknowledging its reuse. The reuse of previously submitted work, even in parts, is not permitted because a student cannot gain marks for submitting prior work in subsequent assignments. You are reminded that all work you submit must be expressed in your own words and must incorporate your own ideas and judgments.

Plagiarism is considered a cheating offence and must be avoided, with particular care on coursework, essays, reports and projects written in your own time and also in open and closed book written examinations. This includes the use of text available on the internet.

Submission of a copy of another student's work is not acceptable and will be regarded as plagiarism. No mark will be awarded. If you suspect that your work has been copied, you should inform staff in the Education Office.

If you prepare a piece of work with other students, for example a practical report, you must write it up using your own words and incorporating your own ideas and judgements. If two or more reports are submitted using substantially the same language, a single mark will be applied and this mark will be divided equally between the two or more students who submitted them.

Similarly, direct quotations from the published or unpublished work of others, from the internet, or from any other source must always be clearly identified as such by being placed inside quotation marks, and a full reference to their source must be provided in the proper form. Remember that a series of short quotations from different sources, if not clearly identified as such, constitutes plagiarism just as much as a single unacknowledged long quotation from a single source. Equally, if you summarise another person's ideas or judgments, figures, diagrams or software, you must refer to that person in your text and include the work referred to in a list at the end of your submission. This list should identify published work that has been used for background preparation (General Bibliography) and also separately identify items that are specifically mentioned in the text. Full details of these references should be given: names of authors, title of work, year of publication and where appropriate the volume (mainly scientific journals), page numbers and publisher (mainly books) or Internet URL

Where plagiarism is detected in group work, members of that group may be deemed to have collective responsibility for the integrity of work submitted by that group and may be liable for any penalty imposed, proportionate to their contribution.

Where a first case of plagiarism has occurred and where the Board of Examiners judge that it does not form a significant part of the work and where the student concerned admits that plagiarism has occurred the case will be referred to the Chairman of the Board of Examiners for action. The action in such cases is:

The student concerned be informally reprimanded and:

The mark for the work be reduced, or

Zero mark for module

More serious cases of plagiarism will be reported to the Academic Registrar who will investigate the allegation. Note that repeated cases of "minor" plagiarism will be considered to constitute a serious case of plagiarism. If a student is found guilty of plagiarism the consequences can be severe, including the requirement to leave College.

Where collusion is suspected (i.e. use is made of another student's work with their consent) then both students will be penalised if found guilty.

Students should be aware that regular checks for plagiarism will be made on submitted work.

For further information, please refer to the Colleges Plagiarism, Academic Integrity & Exam Offences site:

 www.imperial.ac.uk/student-records-and-data/for-current-students/undergraduate-and-taught-postgraduate/exams-assessments-and-regulations/plagiarism-academic-integrity--exam-offences/

Attendance and Absence

You are expected to be available for attendance during any period designated as '[Term Time](#)'. If you wish to book time off during this period you must first seek advice from us at the Education office.

You are expected to attend all lectures, practicals and tutorials. Attendance is closely monitored by the Education Office, so signing registers when these are provided is essential as there is no mechanism to retrospectively register attendance.

Students whose attendance and/or progress is unsatisfactory without good reason will be asked to withdraw from the College.

Absence of more than one day, or absence from a practical session, must be notified to the Life Sciences Education Office. A valid, recent, medical certificate from a recognised medical practitioner, is required when absence because of illness exceeds one week or if you are absent from more than one consecutive practical session.

Absence from a practical session without good reason will result in deduction of marks. It is essential that you arrive to practicals on time. Late arrivals inconvenience the working group and it is usual for the lecturer in charge to devote time at the beginning of a practical to introducing the work and explaining safety issues. If you miss the beginning of the practical you might **not be allowed to take part in the practical and consequently receive a zero mark for the assessment**.

For examinations, if you think you will be unable to attend an examination for medical or another valid reason, or you miss part of an examination through illness, you must ensure that the Life Sciences Education Office is informed immediately. Documentary evidence of the reason for absence will need to be provided within one week of the examination (see under section 'Mitigating Circumstances and Exams'). .

The Registry will be informed of all student non-attendances as the College is obliged to report the non-attendance of students on Tier 4 visas to the Home Office.

Mitigating Circumstances - Coursework

If you miss any part of a course, and especially if you can't submit coursework, through illness or other personal issues you must notify the Life Sciences Education Office before the deadline by completing [a mitigating circumstances form for each affected submission](#) and emailing it to biochemistry.ug@imperial.ac.uk ([Form available via this link to the 'Life Sci Central' Portal](#))

This information is required to avoid penalties for late hand in of work and importantly for second and third year moderation in cases of more serious disruption to your work. All information will be kept to the minimum number of people within the Life Sciences staff but you must state if the information is to be kept completely confidential. It is also advisable to keep your personal tutor informed of any issues that may affect your performance. If you have documentation that would support your claim, it is advisable to provide this to expedite the decision.

Please do not contact the course convenor directly regarding extensions or absence from other sessions. Once you have submitted the mitigating circumstances form and supporting documents your situation will be discussed with the convenor by the Education Office so that a suitable extension to be decided upon can be agreed.

For examinations, if you think you will be unable to attend an examination for medical or another valid reason, or you miss part of an examination through illness, you must ensure that the Life Sciences Education Office is informed immediately. Documentary evidence of the reason for absence will need to be provided within one week of the examination (see under section 'Mitigating Circumstances and Exams- Illness and Absence During and Prior to Examinations').

Examinations & Resits

Examinations are usually three hours long. Students should take note that examinations are the primary means of assessing knowledge and understanding of biochemistry/biotechnology. Successful performance in examinations depends on developing a good understanding of lecture material throughout the courses. This is best achieved closest to the time at which lectures are given, by reading and annotating lecture notes and by reading text books and other related material (outside reading).

For Year 1, The Biological Chemistry and Cell Biology examinations will be held in February and the Proteins & Enzymes and Molecular Biology examinations will be in June.

Candidates who are unavoidably absent from an examination are usually given the opportunity to take an alternative examination in August/September at the discretion of the Biochemistry/Biotechnology Board of Examiners. Full credit is normally given for marks achieved in an alternative examination. If a problem arises which is likely to result in absence from an examination, you must inform the Senior Tutor, via the Education Office, as soon as possible (see section on 'Mitigating Circumstances and Exams - Illness and Absence During and Prior to Examinations'). You must also complete a mitigating circumstances form. Absence from an examination without an adequate, documented reason is regarded as a failed attempt at that examination.

Candidates who fail an examination are usually given an opportunity to resit at an alternative examination in August/September. It should be noted that this is at the discretion of the Board of Examiners for Biochemistry/Biotechnology and, if appropriate, the Examiners can require a student to return to take examinations in the following academic year. Candidates who fail a resit examination in August/September are normally given an opportunity to take the examination the next time it is offered, i.e. when the following year's cohort take the examination. A pass mark of 40% is normally credited to the examination element of the course if he/she is successful in a resit examination.

Under no circumstances can an examination be attempted more than three times. It should be noted that final year students are not offered the opportunity to resit in the Summer examination period unless they are registered for the 4 Year Management Degree.

Summer resit examinations usually take place during the last week of Aug/First week of September. If you are required to take a resit please make yourself available for the whole of this period as the timetable isn't finalised until the end of July.

Mitigating Circumstances and Exams - Illness and Absence During and Prior to Examinations

Students must make every effort to attend all examinations, unless there is a very serious reason for not doing so. Failure to attend an examination without a valid reason will result in the student failing that examination. Following this, if the student is allowed to sit the examination at a future date, this will be for the pass mark only.

A) Illness on the day of an examination

i) Medical Assessment – “not fit to attend an examination”

If you miss an examination because you are ill on the day of an examination, you must attend a doctor on that day. If the doctor agrees that you are not fit to sit an examination, you must submit a mitigating circumstances form and arrange for the Education Office or Senior Tutor to be sent a medical certificate within one week of the date of the examination with a full explanation of why you are deemed to be unfit.

B) Illness during the revision period

It is completely normal for students to experience periods of stress in the weeks prior to an examination. Students are advised to eat, drink and sleep normally during revision, and not to try to work all night, or to rely on excess quantities of stimulants to keep awake. It is also normal for some students to feel that they will never learn all the material expected.

Students should organise their revision so that if they are ill for a few days, this will not affect their studies. For example if a student suffers gastroenteritis for a few days, or has a migraine, we expect them to recover and carry on with their revision. Similarly if a student is stressed for a few days, they are advised to rest and then resume their studies.

In general, illness during the revision period is not an acceptable excuse for not sitting an examination. Submitting a medical certificate stating that you were stressed for a short period of time will, in most cases, not be regarded as a sufficient reason for not sitting an examination.

Students who experiences a long period of physical or mental illness at any time, whether during the revision period or during normal studies, should inform the Senior Tutor. They are also advised to see one of the Health Centre Doctors to obtain advice or treatment and to have their symptoms documented. The Department is sympathetic to such cases and will make appropriate arrangements for the student to resume their studies and to sit examinations when they have recovered. Students will have to provide medical certification for both their illness and their fitness to resume their studies and attend examinations.

C) Personal and family circumstances

Students who are affected by personal and family circumstances during the period of revision are also expected to sit examinations. However, we are sympathetic to students who are affected by a particularly traumatic event, for example death of a near relative. In all cases students must contact the Senior Tutor before the examination and explore the options available to them. It may be possible to allow the student to sit the examination for full credit at a later date. While it is not possible to list our response to all circumstances, we generally do not consider the illness or death of a grandparent during the revision period as a sufficient reason to miss an examination.

Students who are resident overseas, or who travel prior to an examination must make every effort to return to College on time. Travel arrangements can be changed at the last minute by travel operators, and students must anticipate such things. The cancellation of a flight resulting in a student missing an examination will not automatically count as a valid reason for excusing the absence. We recommend students plan to arrive in the UK several days prior to any examination.

Past Examination Papers

An essential part of your studies should involve working with past examination questions. Past papers can be viewed on Blackboard (<http://learn.imperial.ac.uk/>)

Please note that content of courses and the structures of the examinations change from year to year. Whilst past examination papers can be helpful in your studies it is most important that you are fully aware of a course as taught in the year in which an examination is held. Course Convenors will inform students of the structure of examinations during the year.

Practicals

Practical work is an integral part of your training in Biochemistry/Biotechnology and you should take every opportunity, not only to become proficient in the techniques, but also to understand how experiments are designed to test theories and how the results can add to biochemical knowledge.

Attendance at practicals is compulsory and a register of attendance is kept. If you are absent from a practical without a valid excuse, you will not be able to submit a report and will receive a zero mark. If you are unable to attend you should notify the Education Office before the start of the practical and discuss the situation with the lecturer in charge of the practical as soon as possible. If you are absent for good reason, it might be possible to arrange for you to attend the same practical at a different time. This arrangement can only be made in consultation with the lecturer and the technician in charge of the practical.

Punctual arrival at practicals is extremely important. It is usual for the lecturer in charge to devote time at the beginning of a practical to introducing the work and explaining safety issues. If you miss the beginning of the practical you may not be allowed to take part in the practical and consequently receive a zero mark for the assessment. Late arrival is also very disruptive to the other students.

Assessment of practical performance is largely through marks given for written reports on practicals. Staff will observe students at work and provide suggestions for proper use of equipment, recording of results and observations in your laboratory notebook and organisation of your working area. Failure to observe safe working procedures may result in exclusion from the practical.

Laboratory Support Staff will be available to help to help during practicals. You are encouraged to ask for assistance and guidance from the postgraduate (or postdoctoral) demonstrators and the technicians. They are not present to do your work for you, but will give appropriate assistance to help you work effectively and learn appropriate skills. You must follow instructions given by the demonstrators, and ensure that you keep your work area tidy.

Laboratory Coats

Wearing of a Howie Style laboratory coat in good condition is an important safety requirement for working in a laboratory. You will not be able to attend a practical without one.

Students will be provided with a laboratory coat at the start of the academic year.

General Laboratory Safety & Good Practice

1. Always wear a lab coat, and fasten it correctly.
2. When necessary wear appropriate eye protection - safety glasses or face shields. Remember that safety glasses which protect against acid splashes may not provide protection against UV.
3. When necessary wear gloves of the appropriate type. Not all disposable gloves are suitable for all purposes. You will find instructions, in your Practical Booklet, indicating which gloves should be worn for a particular procedure. Check the integrity of the gloves before use. Always dispose of gloves before leaving the laboratory and never wear gloves in a corridor.
4. When necessary wear ear protectors. For example, when using sonicators.
5. Do not eat, drink, smoke, apply make up, or chew gum in a laboratory. All mobile phones must be switched off.
6. Do not use iPods, radios or similar devices. They may stop you from hearing warning shouts.
7. Do not pipette anything by mouth and take care when using pipette aids.
8. Know the drill for evacuation in case of fire or other emergencies. Be aware of the location of the nearest fire extinguisher and exit point.
9. Know who your nearest first-aiders are and what to do in case of a medical emergency. (Some of the Teaching technicians are qualified first-aiders)
10. Keep benches tidy and floor areas and corridors unobstructed.
11. In case of spillages, notify staff (teaching technicians, demonstrators) immediately.
12. In case of accidents, notify staff immediately. All accidents and dangerous occurrences have to be reported (usually done by the staff on duty), on the appropriate form.
13. If a particular hazard has been identified for an experimental procedure, guidance will be given. This will generally include a description of the nature of the hazard, how to minimise it, and how to deal with waste and accidental exposure. Carefully read written instructions and listen to verbal instructions. If in doubt ask staff for advice.

Laboratory Notebooks

Students will be provided with a bound laboratory notebook, which will be used for all practicals through the first year. This book should be used for recording everything that goes on in the laboratory, including notes from lecturers introductions, all the data derived from the experiments and hints and suggestions given to you by demonstrators. Data must not be written on loose pieces of paper and later copied into the notebook. The notebook may also be used for doing preliminary analysis of data, such as graphing data to see if the results make sense. Keeping a tidy and well-organized laboratory notebook is an essential skill. Students should develop their own method of organising their notes, but use of clear subject headings and an index of contents may help you to find things and it can also be helpful to note down references to useful passages in text books.

Handouts and lecture notes

Handouts containing copies of PowerPoint slides or other material will normally be available on Blackboard at least 24 hours before each lectures. Students are given sufficient printing credit to allow printing of these, which should be done in advance of the lecture.

Students commonly use an A4 size loose-leaf system for their lecture notes, although taking notes on computers is also allowed. Loose leaf pages give flexibility in organisation and allow insertion of handouts issued during lectures and tutorial classes. Suitable notepaper and ring binders are on sale in the Imperial College Union Shop.

Notes taken during lectures will inevitably require further investigation so that an understanding of the subject matter is achieved. This revision needs to be done as soon as possible after the lecture and it is good practice to incorporate extra written explanations and diagrams with the original notes. Work needs to be done at the time a subject is covered in lectures and practicals. Just before an examination there is only time for revision and almost no time for seeking explanations or achieving an understanding.

Recording of lectures

Some lecturers may not object to your taking an audio recording of their lecture; however, you must explicitly ask their permission if you do so.

Lecture recordings are for the personal use of students for educational purposes only. Recordings and parts of recordings may not be redistributed, shared, edited or re-used, and this would be in violation of both copyright and performance rights legislation. For clarification, redistribution, which is prohibited, includes sending a copy to another person by email and adding it to a website / social media website (e.g. YouTube, Facebook, and Twitter). Misuse of lecture recordings will be treated as misconduct and will be handled as a disciplinary matter under the Code of Student Discipline. <http://www3.imperial.ac.uk/secretariat/collegegovernance/provisions/ordinances/e2>

Photography in lectures

Photography is not permitted in lectures except by explicit permission of the lecturer.

Calculators

The calculator that will be used in examinations is the CASIO fx-85ES. You should ensure that you are familiar with the use of this particular model. The Imperial College Union Shop has equivalent models available for sale (currently CASIO FX85WA-s and CASIO FX-115WA-s). The Department has a stock of calculators for use in examinations and you will be given an opportunity to use one of these during a practical session. Also, you can come to the Education Office to familiarise yourself with the functions of this calculator and compare it to your own model.

Degree Registration and Optional Pathways

Degree Registration: Biochemistry and Biotechnology

Students registered for Biochemistry degrees will usually be able to re-register for Biotechnology degrees, and vice versa after consultation with their personal tutor.

In the first year of study, students registered for degrees in Biotechnology take the same courses as students registered for degrees in Biochemistry. In the second year, Biotechnology students must take Topics in Biotechnology in the summer term. In their final year, students are expected to take course options that involve strong elements of studies of Biotechnology if they are to be awarded a degree entitled "Biotechnology". A total of 8 Biotechnology points are needed for a Biotechnology award.

Please consult your Personal Tutor or the Education Office if you have any questions concerning this requirement.

Degree Registration: Year in Industry/Research

Dr Dave Hartley is the Biochemistry/Biotechnology Placements Co-ordinator and he can be consulted about the arrangements for the Year in Industry/Research degree. During the first year there will be opportunities to discuss what is involved in the year away from College and other issues related to this degree. It might be possible to arrange changes in degree registration subject to satisfactory academic progress.

Please note that to be allowed to undertake a placement the Department will expect a student to achieve good examination and coursework results (normally 2:1 average, or better) for their academic work at College.

Applications for placements with many industrial companies (Year in Industry/Research degrees) have to be made at the beginning of the second year and the companies use a student's performance in first-year courses in judging their suitability for a placement. Student cannot be guaranteed a particular placement and they will be expected to participate actively in arrangement of placements. However, the final decisions to allow students to participate are made by the Biochemistry/Biotechnology Board of Examiners.

Degree Registration: Research Abroad

Dr Dave Hartley is the ERASMUS / Exchange Co-ordinator and he can be consulted about arrangements for the Biochemistry/Biotechnology with Research Abroad degrees. Students taking a Research Abroad degree spend their third year (usually 34 weeks) abroad. These placements are arranged with partner Universities and Institutions in countries of the European Union as part of ERASMUS Exchange agreements (or equivalent) so that students qualify for ERASMUS financial support. Language courses appropriate to the placement are taken in the second year of study.

To be qualified for a placement, the Department will expect a student to achieve good examination and coursework results (normally 2:1 average, or better) for their academic work at College. The second-year language course you take will normally restrict where you can do your placement. We nominate students for placement with our partners and have to identify a research laboratory where they will be well-supported and be able to undertake a full-time research project relevant to their degree course. Most deadlines for nominations/applications for placements are around April-May but arranging the host lab may take some time, so we normally initiate the process as soon as the January examination results are known. It must be noted that, while students will be expected to have an input into the choice and arrangement of placements, the final decisions to allow students to participate are made by the Biochemistry/Biotechnology Board of Examiners.

Degree Registration: Joint Honours with Management

The Biochemistry/Biotechnology with Management degrees involve either the first two years or all three years of study on the Biochemistry/Biotechnology degree followed by the final year in the Management School. This final year gives students the opportunity to gain experience and insight into the management and operating environment of business organisations. Changes in degree registration involving the Management degree are possible and are usually made by the end of the Spring Term of the student's second year

Degree Registration: Biochemistry/Biotechnology with a Language for Science

These six four-year degrees (Biochemistry or Biotechnology with either French, German or Spanish for Science) have the same curriculum as the three-year Biochemistry and Biotechnology degrees, but the third year is spent undertaking a research project in a university abroad. In addition to the science studied in the three-year degrees, these degrees also include a language component comprising a study of the relevant language, the history and politics, and the science and technology of the country concerned, and a technical translation course in the first, second and final years. The entry requirements for these degrees are slightly different from the three-year degrees, requiring either an A level or AS level (minimum grade B) in the relevant language, so transfer onto these degrees is possible only at the very start of your first year, providing you have the appropriate qualifications. Transfer from the degrees is possible.

Passing a Course

To pass a course (please refer to the Scheme for the Award of Honours which can be found in the 'Life Sci Central' Portal and see section on 'ECTS requirement for Degree'), students must achieve at least 35% overall for the coursework and at least 35% overall for the written examination, and 40% overall. To calculate the overall mark for a course, the overall coursework mark and the overall exam mark is normally weighted 25%:75%, respectively.

ECTS Requirement for Degree

Degree courses at Imperial College use the European Credit Transfer and Accumulation System (ECTS). To obtain a BSc degree a student must complete a minimum of 180 credits in the ECTS. Each year has a value of 60 ECTS credits, within each year, ECTS credits are distributed between the courses, representing the weighting for each course. In the first year, each course is worth 15 ECTS credits and students must pass all courses in order to proceed to the second year. The exception to this is the placement year (for those students registered for the Year in Industry/ Research or the Research Abroad degrees), which has a value of 60 ECTS for the year but has a zero weighting towards the degree, and the Biochemistry/Biotechnology with a Language for Science degrees, which has a value of 66 ECTS for the year but also has a zero weighting towards the degree. All students who successfully complete their undergraduate studies are awarded a degree within a specific division of Honours.

Assessment of Overall Marks for the Award of the Division of Honours

The type of degree awarded (Division of Honours) to each student depends on an overall mark calculated from the results achieved and the consideration of the student's abilities at the Final Examiners Meetings.

The marks boundaries are normally as follows:

Division of Honours for Degree	% Mark
First Class (1)	70 - 100
Upper Second Class (2A)	60 - 69
Lower Second Class (2B)	50 - 59
Third Class Honours (3)	40 - 49

The overall mark for each student is calculated as follows:

A mark is calculated for each course using the results for the written examination and the overall mark for coursework assignments. For all first-year courses these are weighted 3 to 1 respectively, (i.e. 75% of total for the written examination and 25% for coursework). To pass a course students must achieve at least 35% for the written examination, 35% for the coursework and 40% overall.

A mark is calculated for each year completed using a weighted average of courses taken. The weighting is according to ECTS value and in the first year all courses have equal value at 15 ECTS credits.

The overall mark for the degree is calculated using a weighted average of the marks for individual years.

The weighting for the 3-year "Biochemistry/Biotechnology" BSc degrees is normally according to the following:

First year	1 (11.1%)
Second year	3 (33.3%)
Third year	5 (55.6%)

For the 3-year "Biochemistry with Management" BSc degree:

First year	1 (14.2%)
Second year	3 (42.9%)
Third year	3 (42.9%)

For the 4-year "Biochemistry with Management" BSc degree:

First year	1 (7.1%)
Second year	3 (21.4%)
Third year	5 (35.7%)
Final year	5 (35.7%)

For the 4-year "Biochemistry with Management and a Year in Industry/Research" BSc degree:

First year	1 (14.2%)
Second year	3 (42.9%)
Placement year	0 (0%)
Final year	3 (42.9%)

For the 4-year "Biochemistry/Biotechnology with a Year in Industry/Research", "Biochemistry/Biotechnology with Research Abroad" and "Biochemistry/Biotechnology with a Language for Science" BSc degrees:

First year	1 (11.1%)
Second year	3 (33.3%)
Placement year	0%
Final year	5 (55.6%)

For the 5-year "Biochemistry/Biotechnology with Management and a Year in Industry/Research" BSc degrees:

First year	1 (7.1%)
Second year	3 (21.4%)
Placement year	0%
Third year	5 (35.7%)
Final year	5 (35.7%)

Please note that the Education Office and academic staff are permitted only to give you a grade for each course. Percentage marks are released to you by Registry.

Support in your Department

Your Department has a system of academic and pastoral care in place to make sure you have access to the appropriate support throughout your time here. This includes:

Personal Tutor

Your Personal Tutor is your first point of contact for pastoral support and advice. You can arrange to have a meeting with them at any time during your studies (although most Personal Tutors will have set office hours or may require you to make an appointment) – what you discuss will be completely confidential. If necessary they will direct you to an appropriate source of support.

Your first meeting with your tutor will be in your first week at College. First Year Students will then be given the opportunity to meet with him/her on another six occasions which will normally be on a Wednesday morning twice in each term. Please note that your tutor will confirm the day and time for you to meet them. These tutorials will address your training and in particular your study and communication skills, therefore your attendance will be recorded. Please remember that your Tutor will take a special interest in your progress and if you have a problem of any kind (either academic or personal) they will always be pleased to advise you, or suggest an appropriate person for you to consult.

You do not have to wait to be invited to see your Tutor; call at their office and make yourself known or contact them by email. If they are busy, ask when they are likely to be available and/or leave a message. Some Tutors set aside a particular time each week when they expect to be available for discussions with their tutees (or other students). Your Tutors will let you know how best to contact them.

Normally you are assigned a Personal Tutor for the duration of your academic studies. If at any time you think it might be appropriate to change your Personal Tutor, you should discuss this with the Senior Tutor. You should let the senior tutor or education office know if you are having difficulty getting in contact with your personal tutor.

The Senior Tutor will usually be available to help solve serious problems. Appointments can be arranged at short notice by e-mail or by telephone. If the Senior Tutor or your Personal tutor is unable to help you the Senior Tutor will refer you to the College Health and Welfare support systems (see below). If any members of staff are busy when you approach them, please do not hesitate to make an appointment and return at a more convenient time.

References from Personal Tutors and other Members of Staff

Personal Tutors and other members of staff will usually be happy to provide references on your behalf. Before giving the name of a member of staff as a referee you should first:

- (1) Ask them for permission to do so
- (2) Provide them with information about the type of application you are making.

When requesting references, you should also be sure that you give sufficient notice. Your Tutor may indicate how much time they need, but in general it is poor practice to give less than two week's notice of an impending deadline for submission of a reference.

Senior Tutor



Dr Stuart Haslam

Senior Tutor:
Biochemistry/Biotechnology



Sir Ernst Chain Building, 101A



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Mental Health/Wellbeing resources

Everyone has mental health and it can fluctuate over time so it needs taking care of in the same way that we monitor and take care of our physical health. Early intervention if mental health declines can prevent crises and helps recovery. This is summed up by two quotes from your peers who sought help when their mental health declined, 'Having a chat with someone who really understands was amazing'. 'Mental health really is vital'.

If you are worried about your own mental health or that of someone you care about, there are many people who can help. These are listed [on Blackboard in the Life Sciences, General information section](#) and they include the Department's mental Health First Aiders (MHFAs) who are trained to listen non-judgementally and guide you to sources of help and support. Life sciences' MHFAs include Anita Hall, Magda Charalambous, Steve Connolly, John Pinney, Moira Sarsfield and Julia Schroeder (at the Silwood campus). Anita Hall is also an MHFA trainer and she is always happy to chat about mental health.

You can also find help by contacting or visiting the following:

Student Counselling Service, Room 446, Sherfield Building Reception, extension 49637
counselling@imperial.ac.uk

Imperial College Health Centre, Princes Gardens, London, SW7 1LY, 020 7584 6301, healthcare@imperial.ac.uk

Disabilities Officer, Dr Linda Giorgi, Education Office, Sir Ernst Chain Building

Nightline (020 7631 0101) is a telephone helpline offering confidential listening, support and information to students in London. It is open every night of term from 6pm to 8am. It is run by students of affiliated higher education institutions in the London area.

It is also possible to contact Nightline via e-mail: listening@nightline.org.uk

Mums and Dads scheme

Imperial College Union's 'Mums and Dads' scheme matches first years with returning students in the Department to help you tap into the experience and peer support available from existing students.



www.imperialcollegeunion.org/mumsanddads/

Support in your hall of residence

If you're staying in College accommodation you will have access to a range of support within your hall.

Well-being support

All halls have their own Residential Support team who are on call 24/7 to look after your wellbeing and maintain a friendly living environment so that all residents can study, sleep, relax and enjoy themselves. They also play an important part in the social life of the hall, organising a rolling programme of events to bring everyone together. This is supported by the Hall Activities Fund, which all residents contribute to at a rate of £2/week (in 2017/18). The team includes a number of returning students, known as Hall Seniors, who can offer first hand advice on making the most of life at Imperial.

Administrative support

Each hall has a Hall Supervisor or a Reception team who oversee the day-to-day running of the residence. So if you have any enquiries or want to report a maintenance issue there are people on hand to help you.

Imperial College Union support

All Imperial students automatically become members of Imperial College Union when they register at the College. The Union provides a range of support:

Imperial College Union (ICU) Advice Centre

Imperial College Union runs the Advice Centre independently of the College with advisers on hand to provide free, confidential, independent advice on a wide range of welfare issues including housing, money and debt, employment and consumer rights, and personal safety.

 www.imperialcollegeunion.org/advice

Student representatives

The Union have many different opportunities for student representatives to get involved with issues they care about, including Liberation Officers ensuring views of under-represented and interest groups are heard, Academic Reps and Wellbeing Reps.

If you have any feedback about issues in your department relating to academic or wellbeing issues you can speak to one of your student representatives.

 <https://www.imperialcollegeunion.org/your-union/your-representatives/a-to-z>

Officer Trustees

The Union is led by a team of Officer Trustees who are elected every year by the students of Imperial College. They take a year out of their studies and work full-time at the Union, representing the voices of students in the Union, the College and the wider community.

The Officer Trustees represent students in a variety of roles, including Education, Welfare, Finance & Service and Clubs & Societies. These elected students are here to represent your views as a student body do make sure you get in touch with them if there's something you would like to discuss or change.

Support for disabled students

At Imperial College we recognise that studying at university can be a challenge, especially if you have a disability. We are keen that you have every opportunity to fulfil your potential and graduate with the degree you deserve. It is therefore important that you let us know about any disability, specific learning difficulty or health problem as soon as possible so that we can give expert advice and support to enable you to do this. Some people never think of themselves as having a disability, but students who have experienced any of the issues listed below have found that a little extra help and support has made all the difference to their study experience.

Specific learning difficulties (such as dyslexia, dyspraxia, AD[H]D)

- Autistic spectrum disorder (such as Asperger's)
- Deafness or hearing difficulties
- Long term mental health difficulties (such as chronic anxiety, bipolar disorder, depression)
- Medical conditions (such as epilepsy, arthritis, diabetes, Crohn's disease)
- Physical disabilities or mobility impairments
- Visual difficulties

Disability Advisory Service

The Disability Advisory Service provides confidential advice and support for all disabled students and students with specific learning difficulties.

If you think you may have dyslexia or another specific learning difficulty but have never been formally assessed, the Disability Advisory Service offers initial screening appointments.

 Room 566, Level 5, Sherfield Building, South Kensington Campus

 020 7594 9755

 disabilities@imperial.ac.uk

 www.imperial.ac.uk/disability-advisory-service

The Disability Advisory Service works with individual students no matter what their disability to ensure that they have the support they need. They can also help if you think that you may have an unrecognised study problem such as dyslexia. The service is both confidential (information about you is only passed on to other people in the university with your agreement) and individual in that any support is tailored to what you need.

Some of the sorts of things they can help with are:

- Being an advocate on your behalf with others in the College such as your departmental disability liaison officer senior tutor or exams officer, the accommodation office or estates department
- Checking that your evidence of disability is appropriate and up-to-date
- Arranging a diagnostic assessment for specific learning difficulties
- Help with applying to the College for the cost of an assessment
- Help with your application for the Disabled Students Allowance (DSA) see below
- Helping students not eligible for the Disabled Students Allowance in obtaining support from other sources
- Help with arranging extra Library support
- Supporting applications for continuing accommodation for your second or later years

Departmental Disability Officers

Departmental Disability Officers are the first point of contact within your department. They can apply for additional exam arrangements on your behalf, and will facilitate support within your Department.

Your Disability Liaison Officer (Dr Linda Giorgi, Life Sciences Education Office)

Dr Giorgi is your first point of contact within the department and is there to help you with arranging any support within the department that you need. Dr Giorgi is also the person who will apply for Special Examination arrangements on your behalf. You need to contact her without delay if you think that you may need extra time or other adjustments for your examinations. <http://www3.imperial.ac.uk/registry/exams/specialexamarrangements>

More information on Departmental Disability Officers is available at:

 www.imperial.ac.uk/disability-advisory-service/support/ddos

More information on procedures for the consideration of additional exam arrangements in respect of disability is available at:

 www.imperial.ac.uk/media/imperial-college/administration-and-support-services/registry/academic-governance/public/academic-policy/exam-arrangements-and-re-sits/Exam-arrangements-in-respect-of-disability.pdf