UNIVERSITY OF BATH

Natural Sciences Degrees

Choices and Options

From 2023-24 start

Subject Choices for the Natural Sciences

The Natural Sciences degrees are built around a set of **subject streams** for both the BSc and MSci courses. The subject streams are built from a string of **subject blocks** that progress through the years of the course. Each subject block is composed of a number of **units** taught at the University. The details of the units and blocks are given in the BSc and MSci flowcharts https://www.bath.ac.uk/publications/natural-sciences-course-selection-guide/.

The BSc and MSci degrees are built as collations of subject streams. In the first two years you will undertake two streams of equal weightings, your **core streams**. From the third year (onwards) one of these will be chosen to be the **major science subject** which is the primary focus of study, while the other becomes the **minor science stream**. Your major subject is the subject in which you ultimately perform your final year research project and that final year choice is enabled by double blocks of units in earlier years.

All permitted collations for year one enable two or three possible major subjects for later years. Your course can adapt to your developing interest and abilities in the Natural Sciences subjects. The units and the collations are on the University catalogue: https://www.bath.ac.uk/catalogues/2023-2024/s/s-proglist-ug.html .

The MSci and BSc subject streams and collations are identical for years one and two but diverge after that. There is no advantage in starting on either MSci or BSc, and with suitable examination results you can switch between them, **except for BSc only** collations, which cannot be taken to the masters level.

Note these collations are not prescribed named degrees like *Physics with Astrophysics* that enforce a single path through the course. Your two core sciences are of equal weighting until you decide going in to year 3 which will be your major and minor subjects. The core science blocks that you choose in year 1 are the foundation of your course, with the exception of the Environmental Science stream, which starts in year 2 and can be moved to and taken up in year 2.

Your selection of blocks in Year 1 and Year 2 will lead to one of these named collations.

MASTER'S OR BSc COLLATIONS:

Biochemistry major with Chemistry	MSci	BSc
Biochemistry major with Pharmacology	MSci	BSc
Biology major with Chemistry	MSci	BSc
Biology major with Pharmacology	MSci	BSc
Biology major with Physics	MSci	BSc
Chemistry major with Biochemistry	MSci	BSc
Chemistry major with Biology	MSci	BSc
Chemistry major with Pharmacology	MSci	BSc
Chemistry major with Physics	MSci	BSc
Physics major with Biology	MSci	BSc
Physics major with Chemistry	MSci	BSc

BSc ONLY COLLATIONS:

Biochemistry major with Environmental Science	BSc
Biology major with Environmental Science	BSc
Chemistry major with Environmental Science	BSc
Environmental Science major with Biochemistry	BSc
Environmental Science major with Biology	BSc
Environmental Science major with Chemistry	BSc
Environmental Science major with Physics	BSc
Pharmacology major with Biochemistry	BSc
Pharmacology major with Biology	BSc
Pharmacology major with Chemistry	BSc
Physics major with Environmental Science	BSc

THE ACADEMIC YEAR

Each academic year consists of two 15 week semesters each of which will normally have 11 weeks of teaching and then revision and exams on that semester. In each year you have to take 60 credits of material, which is usually made up of 6 units, such as the 10-credit biology units, but some may be double-sized (20 credits) such as the chemistry units in years 1 & 2. (final year projects are 15 or 30 credits as they are significant pieces of work). Each science subject selection is composed of units from the contributing department, where there may be choice, so for example Year 2 Biochemistry takes *Proteins: Structure and Analysis* with a choice of *Molecular Biochemistry, Gene Regulation and Vertebrate Development, or Neuroscience.*

PRE-REQUISITES

One of the keys to understanding the Bath Natural Sciences course is the idea of **pre-requisites**. In order to progress in most subjects, you have to show you have some required prior knowledge. That could be taking particular A Levels, or for example passing a year two biology course to get onto a 3rd year project. The pre-requisites ensure that you will get **depth** to match the **breadth** of the course. Some non-science courses have no pre-requisites – this can be useful for trying new subjects and interests later in the course.

MAKEUP OF COLLATIONS

Each core science stream consists of 20 credits in years 1&2 (with the exception of Environmental Sciences). A Major stream is chosen in the 3rd year that will contain a final year project or dissertation. Interdisciplinary science units make up 10 credits of years 1&2 and 5 credits in year 3. The remaining 10 credits of each year are taken up by choices of minor science strands or non-science units. Once blocks are chosen in year one, they set up ***requisites*** for further study that may constrain which blocks can be chosen in subsequent years.

Core science first year subjects		
Core Science	**Forbidden with**	**A Level requirements**
Biochemistry	Physics, Biology	Chemistry; (Biology preferred)
Biology	Biochemistry	Biology
Chemistry		Chemistry
Pharmacology	Physics, Environmental Science	Chemistry, (Biology preferred)
Physics	Biochemistry, Pharmacology	Physics, Maths
Environmental Science Begins Yr 2	Pharmacology	Maths(or 1st year maths skills)

Once core science streams have been chosen, there will *usually* be space for optional blocks (see details in collations). There are also some forbidden combinations that have been introduced to aid with the academic coherence of the permitted collations and with timetabling.

FLEXIBILITY

ALL final year blocks of the MSci have to be taken at master's level and within science, which reduces flexibility, but there is *usually* room for manoeuvre within the streams later in the course. Many streams have choices between units within them. In addition one of the minor science streams in the BSc final year can usually be replaced by an optional slot, for example to continue the third year of a non-science option.

Where available within a collation, Director of Studies Approved Units, may allow the selection of units from other departments or the mixing of units between blocks.

See the examples at the end of the document.

Help with the detailed options

In Year 1 there are seven possible combinations of the core sciences, these are listed on the following pages, with an illustration of where these might take you in the rest of your degree studies. Please note that a number of final year selections can branch from one first year combination of core sciences.

The pages following these are arranged by the final degree collation, showing the detailed makeup of each collation, along with the options available in each year. The first section in each collation shows the mandatory units in each collation, the second the optional units (where available) each year).

They are colour coded by subject as follows:

Biochemistry	Biology	Chemistry	Environment	Pharmacology	Physics

In the collation pages, the number of credits acquired by passing a module is indicated to the right of its name. The majority of the core sciences offer 20 credits in years 1 and 2. This could either be:

- in one 20-credit unit, shown as a double-width single box, e.g.

Chemistry 1	20

- or made up of multiple units, often two 10-credit units, which may be all-year or single semester units. In this case the 20-credit block is shown divided into smaller sections, denoting that units on different topics are covered, e.g.

Biochemistry 1	10
	10

See details of the teaching units making up the stream blocks on flowcharts at:

nat-sci-flowchart-2023-24.pdf

There may be rare occasions where due to unforeseen or unavoidable circumstances it becomes necessary to make significant changes to a course or to withdraw it or part of it (e.g. a particular unit/module).

For more details on the University terms and conditions please click on the link below:

http://go.bath.ac.uk/ugp-important-terms

FIRST YEAR CHOICES

and possible progression pathways from each pairing of core sciences

These are in alphabetical order throughout

BIOCHEMISTRY AND CHEMISTRY

YEAR 3 and 4

YEAR 2

YEAR 1

Mandatory	Biochemistry 1	10
		10
	Chemistry 1	20
	Nat Sci Portfolio 1	10
Options	Pharmacology 1	
	Mathematics 1	
	Non-science options	

Biochemistry and Chemistry

Biochemistry 2	10
Choose 1-2 further units	10 or 20
Chemistry 2	20
Nat Sci Portfolio 2	10
Options	
Pharmacology 2	10
Mathematics 2	10
Environment 2	10
Non-science options	

[BSc Natural Sciences (Biochemistry with Chemistry)]

[BSc Natural Sciences (Chemistry with Biochemistry)]

[MSci Natural Sciences (Biochemistry with Chemistry)]

[MSci Natural Sciences (Chemistry with Biochemistry)]

Biochemistry and Environment

Biochemistry 2	10
Biochemistry units	10 or 20
Environment 2	10
Nat Sci Portfolio 2	10
Options	
Mathematics 2	
Chemistry 2	20
Non-science options	

[BSc Natural Sciences (Biochemistry with Environmental Science)]

[BSc Natural Sciences (Environmental Science with Biochemistry)]

Chemistry and Environment

Chemistry 2	20
Biochemistry 2	10 or 20
Environment 2	10
Nat Sci Portfolio 2	10
Options	
Mathematics 2	10
Non-science options	10

[BSc Natural Sciences (Chemistry with Environmental Science)]

[BSc Natural Sciences (Environmental Science with Chemistry)]

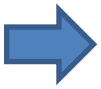
BIOCHEMISTRY AND PHARMACOLOGY

YEAR 3 AND 4

YEAR 2

Biochemistry and Pharmacology

Biochemistry 2	10
Biochemistry units	10 or 20
Pharmacology 2	20
Nat Sci Portfolio 2	10
Non-science options	0-10



[BSc Natural Sciences (Biochemistry with Pharmacology)]

[BSc Natural Sciences (Pharmacology with Biochemistry)]

[MSci Natural Sciences (Biochemistry with Pharmacology)]

YEAR 1

Mandatory	Biochemistry 1	10
		10
	Pharmacology 1	20
	Nat Sci Portfolio 1	10
Options	Biological Chemistry	10
	Non-science options	10

Biochemistry and Environment

Biochemistry 2	30
Environment 2	10
Nat Sci Portfolio 2	10
Non-science options	10

[BSc Natural Sciences (Biochemistry with Environmental Science)]

[BSc Natural Sciences (Environmental Science with Biochemistry)]

BIOLOGY AND CHEMISTRY

YEARS 3 and 4

YEAR 2

YEAR 1

Mandatory	Biology 1	10
		10
	Chemistry 1	20
	Nat Sci Portfolio 1	10
Options	Pharmacology 1	10
	Mathematics 1	10
	Non-science options	10

Biology and Chemistry

Biology 2	20-30
Chemistry 2	20
Nat Sci Portfolio 2	10
Options	
Pharmacology 2	0-10
Mathematics 2	0-10
Environment 2	0-10
Non-science options	0-10

[BSc Natural Sciences (Biology with Chemistry)]

[BSc Natural Sciences (Chemistry with Biology)]

[MSci Natural Sciences (Biology with Chemistry)]

[MSci Natural Sciences (Chemistry with Biology)]

Biology and Environment

Biology 2	20-30
Chemistry 2	0 or 20
Environment 2	10
Nat Sci Portfolio 2	10
Options	
Mathematics 2	0 or 10
Non-science options	0 or 10

[BSc Natural Sciences (Biology with Environmental Science)]

[BSc Natural Sciences (Environmental Science with Biology)]

Chemistry and Environment

Chemistry 2	20
Biology 2	10 or 20
Environment 2	10
Nat Sci Portfolio 2	10
Options	
Mathematics 2	10
Non-science options	10

[BSc Natural Sciences (Chemistry with Environmental Science)]

[BSc Natural Sciences (Environmental Science with Chemistry)]

BIOLOGY AND PHARMACOLOGY

YEARS 3 and 4

YEAR 2

Biology and Pharmacology

Biology 2	20-30
Pharmacology 2	20
Nat Sci Portfolio 2	10
Management units	0-10

BSc Natural Sciences (Biology with Pharmacology)

BSc Natural Sciences (Pharmacology with Biology)

MSci Natural Sciences (Biology with Pharmacology)

YEAR 1

Mandatory	Biology 1	10
		10
	Pharmacology 1	20
	Biological Chemistry	10
	Nat Sci Portfolio 1	10
	no optional units in Year 1	

Biology and Environment

Biology 2	30
Environment 2	10
Nat Sci Portfolio 2	10
Management units	10

BSc Natural Sciences (Biology with Environmental Science)

BSc Natural Sciences (Environmental Science with Biology)

BIOLOGY AND PHYSICS

YEARS 3 and 4

YEAR 2

Biology and Physics

Biology 2	10
Choice of Biology units	10
Physics 2	20
Mathematics for Physics 2	10
Nat Sci Portfolio 2	10
no optional units in Year 2	

[BSc Natural Sciences (Biology with Physics)](#)

[BSc Natural Sciences (Physics with Biology)](#)

[MSci Natural Sciences (Biology with Physics)](#)

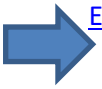
[MSci Natural Sciences (Physics with Biology)](#)

YEAR 1

Mandatory	Biology 1	10
		10
	Physics 1	20
	Mathematics for Physics 1	10
	Nat Sci Portfolio 1	10
Options	no optional units in Year 1	

Biology and Environment

Biology 2	20-30
Environment 2	10
Mathematics for Physics 2	10
Nat Sci Portfolio 2	10
Options	
Non-science options	0-10



[BSc Natural Sciences (Biology with Environmental Science)](#)

[BSc Natural Sciences (Environmental Science with Biology)](#)

Physics and Environment

Physics 2	20
Mathematics for Physics 2	10
Nat Sci Portfolio 2	10
Environment 1	10
Options	
Biology units:	10
Non-science options	10

[BSc Natural Sciences (Physics with Environmental Science)](#)

[BSc Natural Sciences (Environmental Science with Physics)](#)

CHEMISTRY AND PHARMACOLOGY

YEAR 1

Mandatory	Chemistry 1	20
	Pharmacology 1	20
	Nat Sci Portfolio 1	10
Options	Mathematics 1	10
	Biochemistry 1	10
	non-science options	10

YEAR 2

Chemistry and Pharmacology

Chemistry 2	20
Pharmacology 2	20
Nat Sci Portfolio 2	10
Options	
Mathematics 2	10
Biochemistry 2	10
non-science options	10

Chemistry and Environment

Chemistry 2	20
Environment 2	10
Nat Sci Portfolio 2	10
Options	
Mathematics 2	10
Biochemistry 2	10
non-science options	10

YEARS 3 and 4

BSc Natural Sciences (Chemistry with Pharmacology)

BSc Natural Sciences (Pharmacology with Chemistry)

MSci Natural Sciences (Chemistry with Pharmacology)

BSc Natural Sciences (Chemistry with Environmental Science)

BSc Natural Sciences (Environmental Science with Chemistry)

CHEMISTRY AND PHYSICS

YEAR 3 and 4

YEAR 2

YEAR 1

Mandatory	Chemistry 1	20
	Physics 1	20
	Mathematics for Physics 1	10
	Nat Sci Portfolio 1	10
Options	no optional units in Year 1	

Chemistry and Physics

Chemistry 2	20
Physics 2	20
Mathematics for Physics 2	10
Nat Sci Portfolio 2	10
no optional units in Year 2	

[BSc Natural Sciences (Physics with Chemistry)]

[BSc Natural Sciences (Chemistry with Physics)]

[MSci Natural Sciences (Physics with Chemistry)]

[MSci Natural Sciences (Chemistry with Physics)]

Chemistry and Environment

Chemistry 2	20
Environment 2	10
Mathematics for Physics 2	10
Nat Sci Portfolio 2	10
Management units	
no optional units in Year 2	

[BSc Natural Sciences (Chemistry with Environmental Science)]

[BSc Natural Sciences (Environmental Science with Chemistry)]

Physics and Environment

Environment 2	10
Physics 2	20
Mathematics for Physics 2	10
Nat Sci Portfolio 2	10
Management units	10
No optional units in year 2	

[BSc Natural Sciences (Physics with Environmental Science)]

[BSc Natural Sciences (Environmental Science with Physics)]

Possible BSc and MSci degree collations

BIOCHEMISTRY

BIOCHEMISTRY MAJOR WITH CHEMISTRY BSc

	Year 1		Year 2		Year 3	
Mandatory	Biochemistry 1	10	Biochemistry 2	10	Biochemistry 3	10
		10		10 or 20	Capstone project	15
	Chemistry 1	20	Chemistry 2	20	Biochemistry units	10 or 20
					Chemistry 3	10
	Nat Sci Portfolio 1	10	Nat Sci Portfolio 2	10	Nat Sci Portfolio 3	5
Options	Pharmacology 1		Pharmacology 2		Pharmacology 3:	
	Mathematics 1		Mathematics 2		Mathematics 3	
	Non-science options		Environment 2		Environment 3	
			Non-science options		Non-science options	
					DoS Approved Units	0-10

BIOCHEMISTRY MAJOR WITH CHEMISTRY MSci

Year one and two of MSci Biochemistry and Chemistry Core are the same as those taken by BSc students

	Year 3		Year 4	
Mandatory	Biochemistry 3	10	Biochemistry 4	10
	Biochemistry units	10 or 20	Chemistry 4	20
	Chemistry 3	20		
			Advanced Project	30
	Nat Sci Portfolio 3	5		
Options*	Pharmacology 3		no optional units in Y4	
	Mathematics 3			
	Environment 3			
	Non-science options			
	DoS Approved Units			

OPTIONS

Optional units are 5 or 10 credits and are chosen to complete 60 credits per year

BIOCHEMISTRY MAJOR WITH ENVIRONMENTAL SCIENCE BSc

a) From Biochemistry and Chemistry

	Year 1		Year 2		Year 3	
Mandatory	Biochemistry 1	10	Biochemistry 2	10	Biochemistry 3	10
		10	Biochemistry units	10 or 20	Capstone project	15
	Chemistry 1	20	Environment 2	10	Biochemistry units:	10 or 20
			Nat Sci Portfolio 2	10	Environment 3:	10 or 20
	Nat Sci Portfolio 1	10			Nat Sci Portfolio 3	5
Options*	Pharmacology 1 @		Mathematics 2		Mathematics 3	0-10
	Mathematics 1		Chemistry 2	20	Chemistry 3	0-10
	Non-science options		Non-science options		Non-science options	0-10
					DoS Approved Units	0-10

b) From Biochemistry and Pharmacology

	Year 1		Year 2		Year 3	
Mandatory	Biochemistry 1	10	Biochemistry 2	30	Biochemistry 3	10
		10			Biochemistry project	15
	Biological Chemistry	10			Biochemistry units	10 or 20
	Pharmacology 1 @	20	Environment 2	10	Environment 3:	10 or 20
			Nat Sci Portfolio 2	10	Nat Sci Portfolio 3	5
	Nat Sci Portfolio 1	10	Management units	10		
Options	no optional units in Year 1		No optional units in year 2		Non-science options	0-10
					DoS Approved Units	0-10

OPTIONS

Optional units are 5 or 10 credits and are chosen to complete 60 credits per year

[@] You may take single pharmacology in year 2 by transferring to a collation without Environmental Science as a major or minor. Pharmacology is a forbidden combination with Environmental Science.

BIOCHEMISTRY MAJOR WITH PHARMACOLOGY BSc

	Year 1		Year 2		Year 3	
Mandatory	Biochemistry 1	10	Biochemistry 2	10	Biochemistry 3	10
		10	Biochemistry units	10 or 20	Biochemistry project	15
	Pharmacology 1	20	Pharmacology 2	20	Biochemistry units	10 or 20
					Pharmacology 3	10
	Nat Sci Portfolio 1	10	Nat Sci Portfolio 2	10	Pharmacology units	5-15
					Nat Sci Portfolio 3	5
Options	Biological Chemistry	10	Non-science options	0-10	Non-science options	0-10
	Non-science options	10			DoS Approved Units	0-10

BIOCHEMISTRY MAJOR WITH PHARMACOLOGY MSci

Year one and two of Biochemistry and Pharmacology Core are the same in the MSci as BSc

	Year 3		Year 4	
Mandatory	Biochemistry 3	10	Biochemistry 4	10
	Biochemistry units	10 or 20	Advanced Capstone project	30
	Pharmacology 3	10		
	Pharmacology units	5 to 15	Pharmacology 4	10
	Nat Sci Portfolio 3	5	Pharmacology units	10
Options	Non-science options	0 to 10	no optional units in Year 4	
	DoS Approved Units	0 to 10		

OPTIONS

Optional units are 5 or 10 credits and are chosen to complete 60 credits per year. Biological Chemistry is the recommended unit in year 1, but psychology also has synergy with biochemistry.

BIOLOGY

BIOLOGY MAJOR WITH CHEMISTRY BSc

	Year 1		Year 2		Year 3	
Mandatory	Biology 1	10	Biology 2	20-30	Biology 3	20
		10				
	Chemistry 1	20	Chemistry 2	20	Biology Capstone project	15
					Chemistry 3	10-20
	Nat Sci Portfolio 1	10	Nat Sci Portfolio 2	10	Nat Sci Portfolio 3	5
Options	Pharmacology 1	10	Pharmacology 2	0-10	Pharmacology 3	0-10
	Mathematics 1	10	Mathematics 2	0-10	Mathematics 3	0-10
	Non-science options	10	Environment 2	0-10	Environment 3	0-10
			Non-science options	0-10	Non-science options	0-10
					DoS Approved Units	0-10

BIOLOGY MAJOR WITH CHEMISTRY MSci

Year one and two of Biology and Chemistry Core are the same in the MSci as BSc

	Year 3		Year 4	
Mandatory	Biology 3	10	Biology 4	10
		10	Advanced Capstone project	30
	Chemistry 3	10		
		10	Chemistry 4	10
	Nat Sci Portfolio 3	5		10
Options	Pharmacology 2	0-15	no optional units in Year 4	
	Mathematics 2	0-10		
	Environment 2	0-10		
	Non-science options	0-10		
	DoS Approved Units	0-10		

OPTIONS

Optional units are 5 or 10 credits and are chosen to complete 60 credits per year

BIOLOGY MAJOR WITH ENVIRONMENTAL SCIENCE BSc

a) From Chemistry

	Year 1		Year 2		Year 3	
Mandatory	Biology 1	10	Biology 2	20-30	Biology 3	20
		10	Chemistry 2	0 or 20		
	Chemistry 1	20			Biology project	15
			Environment 2	10	Environment 3	10-20
	Nat Sci Portfolio 1	10	Nat Sci Portfolio 2	10	Nat Sci Portfolio 3	5
Options	Pharmacology 1[@]	10	Mathematics 2	0 or 10	Chemistry 3	0-10
	Mathematics 1	10	Non-science options	0 or 10	Mathematics 3	0-10
	Non-science options	10			Non-science options	0-10
					DoS Approved Units	0-10

b) From Physics

	Year 1		Year 2		Year 3	
Mandatory	Biology 1	10	Biology 2	20-30	Biology 3	20
		10				
	Physics 1	20	Environment 2	10	Biology project	15
	Mathematics for Physics 1	10	Mathematics for Physics 2	10	Environment 3	10-20
	Nat Sci Portfolio 1	10	Nat Sci Portfolio 2	10	Nat Sci Portfolio 3	5
Options	no optional units in Year 1		Non-science options	0-10	Non-science options	0-10
					DoS Approved Units	0-10

c) From Pharmacology

	Year 1		Year 2		Year 3	
Mandatory	Biology 1	10	Biology 2	30	Biology 3	10
		10				10
	Pharmacology 1 [@]	20			Biology project	15
	Biological Chemistry	10	Environment 2	10	Environment 3	10-20
	Nat Sci Portfolio 1	10	Nat Sci Portfolio 2	10	Nat Sci Portfolio 3	5
			Management units	10		
Options	no optional units in Year 1				non-science options	0-10
					DoS Approved Units	0-10

OPTIONS

Optional units are 5 or 10 credits and are chosen to complete 60 credits per year

[@] You may take single or double pharmacology in year 2 by transferring to a collation with pharmacology as a major or minor. Pharmacology is a forbidden combination with Environmental Studies.

BIOLOGY MAJOR WITH PHARMACOLOGY BSc

	Year 1		Year 2		Year 3	
Mandatory	Biology 1	10	Biology 2	20-30	Biology 3	10
		10				10
	Pharmacology 1	20	Pharmacology 2	20	Biology project	15
					Pharmacology 3	10-20
	Biological Chemistry	10	Nat Sci Portfolio 2	10	Nat Sci Portfolio 3	5
	Nat Sci Portfolio 1	10				
Options	no optional units in Year 1		Management units	0-10	non-science options	0-10
					DoS Approved Units	0-10

BIOLOGY MAJOR WITH PHARMACOLOGY MSci

Year one and two of Biology and Pharmacology Core are the same in the MSci as BSc

	Year 3		Year 4	
Mandatory	Biology 3	10	Advanced Capstone project	30
		10		
	Pharmacology 3	5 to 25	Biology 4	10
			Pharmacology 4	10
	Nat Sci Portfolio 3	5		10
Options	non-science options	0-10	no optional units in Year 4	
	DoS Approved Units	0-10		

OPTIONS

Optional units are 5 or 10 credits and are chosen to complete 60 credits per year

BIOLOGY MAJOR WITH PHYSICS BSc

	Year 1		Year 2		Year 3	
Mandatory	Biology 1	10	Biology 2	10	Biology 3	20
		10		10		
	Physics 1	20	Physics 2	20	Biology project	15
					Physics 3	10-20
	Mathematics for Physics 1	10	Mathematics for Physics 2	10	Nat Sci Portfolio 3	5
	Nat Sci Portfolio 1	10	Nat Sci Portfolio 2	10		
Options	no optional units in Year 1		no optional units in Year 2		Non-science options	0-10
					DoS Approved Units	0-10

BIOLOGY MAJOR WITH PHYSICS MSci

Year one and two of Biology and Physics Core are the same in the MSci as BSc

	Year 3		Year 4	
Mandatory	Biology 3	20-30	Advanced Capstone project	30
	Physics 3	20	Biology 4	20
			Physics 4	10
Options	Environment 3	10-20	no optional units in Year 4	
	Non-science options	10-20		
	DoS Approved Units:	0-10		

OPTIONS

Optional units are 5 or 10 credits and are chosen to complete 60 credits per year

CHEMISTRY

CHEMISTRY MAJOR WITH BIOCHEMISTRY BSc

	Year 1		Year 2		Year 3	
Mandatory	Chemistry 1	20	Chemistry 2	20	Chemistry 3	10
						10
	Biochemistry 1	10	Biochemistry 2	10	Chemistry project	15
	Cell Biology	10	Choose 1-2 further units	10 or 20	Biochemistry 3	10
	Nat Sci Portfolio 1	10	Nat Sci Portfolio 2	10	Nat Sci Portfolio 3	5
Options	Pharmacology 1	10	Pharmacology 2	10	Biochemistry: further units	0-10
	Mathematics 1	10	Mathematics 2	10	Pharmacology 3	0-10
	Non-science options	10	Environment 2	10	Mathematics 3	0-10
			Non-science options	10	Environment 3	0-10
					Non-science options	0-10
					DoS Approved Units	0-10

CHEMISTRY MAJOR WITH BIOCHEMISTRY MSci

Year one and two of Chemistry and Biochemistry Core are the same in the MSci as BSc

	Year 3		Year 4	
Mandatory	Chemistry 3	10	Chemistry 4	20
		10		
	MSci labs	10	Chemistry project	30
	Biochemistry 3	10		
	Nat Sci Portfolio 3	5		
			Biochemistry 4	10
Options	Biochemistry: further units	0-15		
	Pharmacology 3	0-15		
	Mathematics 3	0-10		
	Environment 3	0-15		
	Non-science options	0-15		
	DoS Approved Units	0-10		

no optional units in Year 4

OPTIONS

Optional units are 5 or 10 credits and are chosen to complete 60 credits per year

CHEMISTRY MAJOR WITH BIOLOGY BSc

	Year 1		Year 2		Year 3	
Mandatory	Chemistry 1	20	Chemistry 2	20	Chemistry 3	10
						10
	Biology 1	10	Biology 2	10	Chemistry project	15
		10		10	Biology 3	10-20
	Nat Sci Portfolio 1	10	Nat Sci Portfolio 2	10	Nat Sci Portfolio 3	5
Options	Pharmacology 1	10	Pharmacology 2	10	Pharmacology 3	0-10
	Mathematics 1	10	Mathematics 2	10	Mathematics 3	0-10
	Non-science options	10	Environment 2	10	Environment 3	0-10
			Non-science options	10	Non-science options	0-10
					DoS Approved Units	0-10

CHEMISTRY MAJOR WITH BIOLOGY MSci

Year one and two of Chemistry and Biochemistry Core are the same in the MSci as BSc

	Year 3		Year 4	
Mandatory	Chemistry 3	10	Chemistry 4	10
		10		10
	Chemistry MSci labs	10	Chemistry project	30
	Biology 3: choose 20 credits	20		
	Nat Sci Portfolio 3	5	Biology 4	10
Options	Pharmacology 3	5	no optional units in Year 4	
	Mathematics 3	5		
	Environment 3	5		
	Non-science options	5		
	DoS Approved Unit	5		

OPTIONS

Optional units are 5 or 10 credits and are chosen to complete 60 credits per year

CHEMISTRY MAJOR WITH ENVIRONMENTAL SCIENCE BSc

a) From Chemistry with Biochemistry

	Year 1		Year 2		Year 3	
Mandatory	Chemistry 1	20	Chemistry 2	20	Chemistry 3	10
						10
	Biochemistry 1	10	Biochemistry 2	10 or 20	Chemistry project	15
	Cell Biology	10	Environment 2	10	Environment 3	10-20
	Nat Sci Portfolio 1	10	Nat Sci Portfolio 2	10	Nat Sci Portfolio 3	5
Options	Pharmacology 1	10	Mathematics 2	10	Biochemistry 3	0-10
	Mathematics 1	10	Non-science options	10	Mathematics 3	0-10
	Non-science options	10			Non-science options	0-10
					DoS Approved Units	0-10

b) From Chemistry with Biology

	Year 1		Year 2		Year 3	
Mandatory	Chemistry 1	20	Chemistry 2	20	Chemistry 3	10
						10
	Biology 1	10	Biology 2	10 or 20	Chemistry project	15
		10	Environment 2	10	Environment 3	10-20
	Nat Sci Portfolio 1	10	Nat Sci Portfolio 2	10	Nat Sci Portfolio 3	5
Options	Pharmacology 1	10	Mathematics 2	10	Biology 3	0-10
	Mathematics 1	10	Non-science options	10	Mathematics 3	0-10
	Non-science options	10			Non-science options	0-10
					DoS Approved Units	0-10

c) From Chemistry with Pharmacology (Pharmacology is a forbidden combination with Environmental Science)

	Year 1		Year 2		Year 3	
Mandatory	Chemistry 1	20	Chemistry 2	20	Chemistry 3	10
						10
	Pharmacology 1	20	Environment 2	10	Chemistry project	15
	Nat Sci Portfolio 1	10	Nat Sci Portfolio 2	10	Environment 3	10-20
					Nat Sci Portfolio 3	5
Options	Mathematics 1	10	Mathematics 2	10	Mathematics 3	0-10
	Biochemistry 1	10	Biochemistry 2	10	Biochemistry 3	10
	non-science options	10	non-science options	10	non-science options	0-10
					DoS Approved Units	0-10

d) From Chemistry with Physics

	Year 1		Year 2		Year 3	
Mandatory	Chemistry 1	20	Chemistry 2	20	Chemistry 3	10
						10
	Physics 1	20	Environment 2	10	Chemistry project	15
	Mathematics for Physics	10	Mathematics for Physics	10	Environment 3	10-20
	Nat Sci Portfolio 1	10	Nat Sci Portfolio 2	10	Nat Sci Portfolio 3	5
			Management units			
Options	no optional units in Year 1		no optional units in Year 2		non-science options	0-10
					DoS Approved Units	0-10

OPTIONS

Optional units are 5 or 10 credits and are chosen to complete 60 credits per year

CHEMISTRY MAJOR WITH PHARMACOLOGY BSc

	Year 1		Year 2		Year 3	
Mandatory	Chemistry 1	20	Chemistry 2	20	Chemistry 3	10
						10
	Pharmacology 1	20	Pharmacology 2	20	Chemistry project	15
					Pharmacology 3	10-20
	Nat Sci Portfolio 1	10	Nat Sci Portfolio 2	10	Nat Sci Portfolio 3	5
Options	Mathematics 1	10	Mathematics 2	10	Mathematics 3	0-10
	Biochemistry 1	10	Biochemistry 2	10	Biochemistry 3	0-10
	non-science options	10	non-science options	10	non-science options	0-10
					DoS Approved Units	0-10

CHEMISTRY MAJOR WITH PHARMACOLOGY MSci

Year one and two of MSci Chemistry and Pharmacology Core are the same as those taken by BSc students

	Year 3		Year 4	
Mandatory	Chemistry 3	10	Chemistry 4	10-20
		10	Chemistry project	30
	Chemistry MSci labs	10		
	Pharmacology 3	10	Pharmacology 4	10
	Choose further units	5-15		
	Nat Sci Portfolio 3	5		
Options	Mathematics 3	0-10	Further Pharmacology units	0-10
	Biochemistry 3	0-10		
	non-science options	0-10		
	DoS Approved Units	0-10		

OPTIONS

Optional units are 5 or 10 credits and are chosen to complete 60 credits per year

CHEMISTRY MAJOR WITH PHYSICS BSc

	Year 1		Year 2		Year 3	
Mandatory	Chemistry 1	20	Chemistry 2	20	Chemistry 3	10
						10
	Physics 1	20	Physics 2	20	Chemistry project	15
					Physics 3	10-20
	Mathematics for Physics	10	Mathematics for Physics	10	Nat Sci Portfolio 3	5
	Nat Sci Portfolio 1	10	Nat Sci Portfolio 2	10		
Options	no optional units in Year 1		no optional units in Year 2		non-science options	0-10
					DoS Approved Units	0-10

CHEMISTRY MAJOR WITH PHYSICS MSci

Year one and two of MSci Chemistry and Physics Core are the same as those taken by BSc students

	Year 3		Year 4	
Mandatory	Chemistry 3	10	Chemistry 4	10
		10		10
	Chemistry MSci labs	10	Chemistry project	30
	Physics 3: choose 4-6 units	20-30		
			Physics 4: choose 2 units	10
Options	Nat Sci Portfolio 3	5	no optional units in Year 4	
	non-science options	0-10		
	DoS Approved Units	0-10		

OPTIONS

Optional units are 5 or 10 credits and are chosen to complete 60 credits per year

ENVIRONMENTAL SCIENCE

ENVIRONMENTAL SCIENCE MAJOR WITH BIOCHEMISTRY BSc

a) From Biochemistry and Chemistry cores in year 1

	Year 1		Year 2		Year 3	
Mandatory	Biochemistry 1	10	Environment 2	10	Environment 3	10
	Cell Biology	10	Biochemistry 2	10		10
	Chemistry 1	20	Choose 1-2 further units	10-20	Environment dissertation	15
			Nat Sci Portfolio 2	10	Biochemistry 3	10
	Nat Sci Portfolio 1	10			Nat Sci Portfolio 3	5
Options	Pharmacology 1	10	Chemistry 2	20	Further Biochemistry units	10
	Mathematics 1	10			Chemistry 3	10
	non-science options	10	Mathematics 2	10	Mathematics 3	10
			non-science options	10-20	non-science options	10
					DoS Approved Units	10

b) From Biochemistry and Pharmacology cores in year 1

	Year 1		Year 2		Year 3	
Mandatory	Biochemistry 1	10	Environment 2	10	Environment 3	10
	Cell Biology	10	Biochemistry 2	10		10
	Pharmacology 1	20	Choose 1-2 further units	10-20	Environment dissertation	15
			Nat Sci Portfolio 2	10	Biochemistry 3	10
	Biological Chemistry	10			Nat Sci Portfolio 3	5
	Nat Sci Portfolio 1	10				
Options	no optional units in Year 1		non-science options	10-20	Further Biochemistry units	0-10
					non-science options	0-10
					DoS Approved Units	0-10

Options

In both these routes you may choose at the end of year one to move to a collation with the two sciences you have chosen as core for year 1. Environmental Science can still be taken in year two as an option in these collations, except when one of the core sciences is Pharmacology, with which Environmental Science is a forbidden combination. Optional units are 5 or 10 credits and are chosen to complete 60 credits per year.

ENVIRONMENTAL SCIENCE MAJOR WITH BIOLOGY BSc

a) From Biology and Chemistry cores

	Year 1		Year 2		Year 3	
Mandatory	Biology 1	10	Environment 2	10	Environment 3	10
		10	Biology 2	10-20		10
	Chemistry 1	20	Chemistry 2	20	Environment dissertation	15
					Biology 3	10-20
	Nat Sci Portfolio 1	10	Nat Sci Portfolio 2	10	Nat Sci Portfolio 3	5
Options	Pharmacology 1	10	Mathematics 2	0-10	Chemistry 3	0-10
	Mathematics 1	10	non-science options	0-10	Mathematics 3	0-10
	non-science options	10			non-science options	0-10
					DoS Approved Units	0-10

b) From Biology and Pharmacology cores

	Year 1		Year 2		Year 3	
Mandatory	Biology 1	10	Environment 2	10	Environment 3	10
		10	Biology 2	30		10
	Pharmacology 1	20			Environment dissertation	15
					Biology 3	10-20
	Biological Chemistry	10	Nat Sci Portfolio 2	10	Nat Sci Portfolio 3	5
	Nat Sci Portfolio 1	10	non-science options	10		
Options	no optional units in Year 1				non-science options	0-10
					DoS Approved Units	0-10

c) From Biology and Physics cores

	Year 1		Year 2		Year 3	
Mandatory	Biology 1	10	Environment 2	10	Environment 3	10
		10	Biology 2	10		10
	Physics 1	20		10	Environment dissertation	15
				10	Biology 3	10-20
	Mathematics for Physics 1	10	Nat Sci Portfolio 2	10	Nat Sci Portfolio 3	5
	Nat Sci Portfolio 1	10				
Optio	no optional units in Year 1		Mathematics for Physics 2	10	non-science options	0-10
			non-science options	10	DoS Approved Units	0-10

OPTIONS

As Environmental Science is not a named route in year 1, you may choose at the end of year 1 to stay in a collation with the two sciences you have chosen as core for year 1. Environmental Science can still be taken in year two as an option in these collations, except when one of the core sciences is Pharmacology, with which Environmental Science is a forbidden combination. Optional units are 5 or 10 credits and are chosen to complete 60 credits per year.

ENVIRONMENTAL SCIENCE MAJOR WITH CHEMISTRY BSc

a) From Chemistry with Biochemistry

	Year 1		Year 2		Year 3	
Mandatory	Chemistry 1	20	Environment 2	10	Environment 3	10
			Chemistry 2	20		10
	Biochemistry 1	10			Environment dissertation	15
	Cell Biology	10	Biochemistry 2	10 or 20	Chemistry	10-20
	Nat Sci Portfolio 1	10	Nat Sci Portfolio 2	10	Nat Sci Portfolio 3	5
Options	Pharmacology 1	10	Mathematics 2	10	Biochemistry	0-10
	Mathematics 1	10	Non-science options	10	Mathematics 3	0-10
	Non-science options	10			Non-science options	0-10
					DoS Approved Units	0-10

b) From Chemistry with Biology

	Year 1		Year 2		Year 3	
Mandatory	Chemistry 1	20	Environment 2	10	Environment 3	20
			Chemistry 2	20		
	Biology 1	10			Environment dissertation	15
		10	Biology 2	10-20	Chemistry 3	10-20
	Nat Sci Portfolio 1	10	Nat Sci Portfolio 2	10	Nat Sci Portfolio 3	5
Options	Pharmacology 1	10	Mathematics 2	0-10	Biology 3	0-10
	Mathematics 1	10	non-science options	0-10	Mathematics	0-10
	non-science options	10			non-science options	0-10
					DoS Approved Units	0-10

c) From Chemistry with Pharmacology (forbidden combination with Environmental Science)

	Year 1		Year 2		Year 3	
Mandatory	Chemistry 1	20	Environment 2	10	Environment 3	20
			Chemistry 2	20		
	Pharmacology 1	20			Environment dissertation	15
			Nat Sci Portfolio 2	10	Chemistry 3	10-20
	Nat Sci Portfolio 1	10			Nat Sci Portfolio 3	5
Options	Biochemistry 1	10	Biochemistry 2	0-10	Biochemistry 3	0-10
	Mathematics 1	10	Mathematics 2	0-10	Mathematics 3	0-10
	non-science options	10	non-science options	0-10	non-science options	0-10
					DoS Approved Units	0-10

d) From Chemistry with Physics

	Year 1		Year 2		Year 3	
Mandatory	Chemistry 1	20	Environment 2	10	Environment 3	20
			Chemistry 2	20		
	Physics 1	20			Environment dissertation	15
			Mathematics for Physics 2	10	Chemistry 3	10-20
	Mathematics for Physics 1	10	Nat Sci Portfolio 2	10	Nat Sci Portfolio 3	5
	Nat Sci Portfolio 1	10				
Optio	no optional units in Year 1		non-science options	10	non-science options	0-10
					DoS Approved Units	0-10

OPTIONS – AS FOR OTHER ENVIRONMENT COLLATIONS

ENVIRONMENTAL SCIENCE MAJOR WITH PHYSICS BSc

a) From Physics with Biology

	Year 1		Year 2		Year 3	
Mandatory	Physics 1	20	Environment 2	10	Environment 3	20
	Mathematics for Physics 1	10	Physics 2	20	Environment dissertation	15
	Biology 1	10	Mathematics for Physics 2	10	Physics 3	10-20
		10	Biology 2	10	Nat Sci Portfolio 3	5
	Nat Sci Portfolio 1	10	Nat Sci Portfolio 2	10		
Options	no optional units in Year 1		no optional units in Year 2		Biology 3	0-10
					non-science options	0-10
					DoS Approved Units	0-10

b) From Physics with Chemistry

	Year 1		Year 2		Year 3	
Mandatory	Physics 1	20	Environment 2	10	Environment 3	20
	Mathematics for Physics 1	10	Physics 2	20	Environment dissertation	15
	Chemistry 1	20	Mathematics for Physics 2	10	Physics 3	10-20
	Nat Sci Portfolio 1	10	Nat Sci Portfolio 2	10	Nat Sci Portfolio 3	5
Options	no optional units in Year 1		non-science options	10	non-science options	0-10
					DoS Approved Units	0-10

OPTIONS

In both these routes you may choose at the end of year one to remain on a collation with the two sciences you have chosen as core for year 1. Optional units are 5 or 10 credits and are chosen to complete 60 credits per year.

PHARMACOLOGY

PHARMACOLOGY MAJOR WITH BIOCHEMISTRY BSc

	Year 1		Year 2		Year 3	
Mandatory	Pharmacology 1	20	Pharmacology 2	20	Pharmacology 3	10
						10
	Biochemistry 1	10	Biochemistry 2	10	Pharmacology dissertation	15
	Cell Biology	10	Choose 1-2 further units	10-20	Biochemistry 3	10
	Nat Sci Portfolio 1	10	Nat Sci Portfolio 2	10	Choose further units	0-10
					Nat Sci Portfolio 3	5
Options	Biological Chemistry	10	non-science options	0-10	non-science options	0-10
	Non-science options	10			DoS Approved Units	0-10

OPTIONS

Optional units are 5 or 10 credits and are chosen to complete 60 credits per year. Biological Chemistry is the recommended option in year 1

PHARMACOLOGY MAJOR WITH BIOLOGY BSc

	Year 1		Year 2		Year 3	
Mandatory	Pharmacology 1	20	Pharmacology 2	20	Pharmacology 3	10
					Choose 2 further units	10
	Biology 1	10	Biology 2	10	Pharmacology dissertation	15
		10	Choose further units	10-20	Biology 3 choice	10-20
	Biological Chemistry	10	Nat Sci Portfolio 2	10	Nat Sci Portfolio 3	5
	Nat Sci Portfolio 1	10				
Optio	no optional units in Year 1		non-science options	0-10	non-science options	0-10
					DoS Approved Units	0-10

OPTIONS

Optional units are 5 or 10 credits and are chosen to complete 60 credits per year

PHARMACOLOGY MAJOR WITH CHEMISTRY BSc

	Year 1		Year 2		Year 3	
Mandatory	Pharmacology 1	20	Pharmacology 2	20	Pharmacology 3	10
					Choose 2 further units	10
	Chemistry 1	20	Chemistry 2	20	Pharmacology dissertation	15
					Chemistry 3: choose 1 or 2 units	10-20
	Nat Sci Portfolio 1	10	Nat Sci Portfolio 2	10	Nat Sci Portfolio 3	5
Options	Biochemistry 1	10	Biochemistry 2	10	Biochemistry 3	0-10
	Mathematics 1	10	Mathematics 2	10	Mathematics 3	0-10
	non-science options	10	non-science options	10	non-science options	0-10
					DoS Approved Units	0-10

OPTIONS

Optional units are 5 or 10 credits and are chosen to complete 60 credits per year

PHYSICS

PHYSICS MAJOR WITH BIOLOGY BSc

	Year 1		Year 2		Year 3	
Mandatory	Physics 1	20	Physics 2	20	Nat Sci Portfolio 3	5
	Biology 1	10	Mathematics for Physics 2	10	Physics project or VIP	15
		10	Nat Sci Portfolio 2	10		
	Mathematics for Physics 1	10				
	Nat Sci Portfolio 1	10				
Options	no optional units in Year 1		Biology units	20	Physics units	10-20
					Biology units	10-20
					Non-science options	0-10
					DoS Approved Units	0-10

PHYSICS MAJOR WITH BIOLOGY MSci

Year one and two of MSci Physics and Biology Core are the same as those taken by BSc students

	Year 3		Year 4	
Mandatory	Physics MSci 3	15	MPhys/MSci research project	30
	MSci project preparation	15	Physics 4	10
				10
			Biology 4	10
Options	Other Physics units	0-10	no optional units in Year 4	
	Biology unit choice	20		
	Non-science options	0-10		
	DoS Approved Units	0-10		

Options:

Optional units are 5 or 10 credits and are chosen to complete 60 credits per year

PHYSICS MAJOR WITH CHEMISTRY BSc

	Year 1		Year 2		Year 3	
Mandatory	Physics 1	20	Physics 2	20	Nat Sci Portfolio 3	5
	Chemistry 1	20	Chemistry 2	20	Physics project or VIP	15
	Mathematics for Physics 1	10	Mathematics for Physics 2	10	Physics units	10-20
	Nat Sci Portfolio 1	10	Nat Sci Portfolio 2	10	Chemistry units	10-20
Options	no optional units in Year 1		no optional units in Year 2		Non-science options	0-10
					DoS Approved Unit	0-10

PHYSICS MAJOR WITH CHEMISTRY MSci

Year one and two of MSci Physics and Chemistry Core are the same as those taken by BSc students

	Year 3		Year 4	
Mandatory	Chemistry 3	10	MSci research project	30
		10	Chemistry 4	10
	Physics MSci 3	15	Physics MSci year 4	20
	MSci project preparation	15		
Options	Other Physics units	0-10	no optional units in Year 4	
	Non-science options	0-10		
	DoS Approved Units	0-10		

OPTIONS

Optional units are 5 or 10 credits and are chosen to complete 60 credits per year

PHYSICS MAJOR WITH ENVIRONMENTAL SCIENCE BSc

a) This collation can be transferred to after the first year in the collations of Chemistry and Physics.

	Year 1		Year 2		Year 3	
Mandatory	Physics 1	20	Physics 2	20	Nat Sci Portfolio 3	5
	Chemistry 1	20	Environment 1	10	Physics project or VIP	15
	Mathematics for Physics 1	10	Mathematics for Physics 2	10	Physics unit choice	20-30
	Nat Sci Portfolio 1	10	Nat Sci Portfolio 2	10	Environment unit choice	10-20
			Management units	10		
Options	no optional units in Year 1				Non-science options	0-10
					DoS Approved Units	0-10

b) This collation can be transferred to after the first year in the collations of Biology and Physics.

	Year 1		Year 2		Year 3	
Mandatory	Physics 1	20	Physics 2	20	Nat Sci Portfolio 3	5
				20	Physics project or VIP	15
	Biology 1	10	Mathematics for Physics 2	10	Physics units	20-30
		10	Nat Sci Portfolio 2	10	Environment units	10-20
	Mathematics for Physics 1	10	Environment 1	10		
	Nat Sci Portfolio 1	10				
Options	no optional units in Year 1		Biology units:	10	Biology units	0-10
					Non-science options	0-10
					DoS Approved Units	0-10

Examples of easy modifications

As shown above, in the final year of a BSc degree, a block of the minor science can be replaced with a block from the non-science options. Management (Education from year 2) can always be selected for this block. Psychology can only be selected if it has already been studied in years 1 and 2.

(i) Drop BSc Final Year Minor: "*I have decided I want to be a teacher*"

Education can replace one science unit in the final year– only in the BSc. e.g. on Biochemistry with Chemistry

Year 1	
Biochemistry 1	10
	10
Chemistry 1	20
Nat Sci Portfolio 1	10
Pharmacology 1	

Year 2	
Biochemistry 2	10
	10
Chemistry 2	20
Nat Sci Portfolio 2	10
Pharmacology 2	

Year 3	
Biochemistry 3	10
Capstone project	15
Biochemistry units	10
Chemistry 3	10
Nat Sci Portfolio 3	5
Education	10

(ii) Director of Studies Approved Units

Not shown fully in these collations are the Director of Studies Approved Units blocks that are normally available in year 3 of the BSc degrees, and year 4 of the MSci degrees. In some MSci collations there is also a year 3 Director of Studies Approved Units block.

These can be taken in place of the blocks named in the collations above, subject to timetabling, and can be built from other units from the Natural Sciences selection, units mixed between the usual block structures or units taken from other courses. These must follow certain technical requirements to preserve the overall validity of the degree to be awarded, you need the pre-requsite knowledge to study them, and selecting them needs approval from the Natural Sciences and the delivering department: hence – Director of Studies Approved Units.

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