

## Programme Specification

**BSc Pharmaceutical Chemistry with Foundation**

**For students entering Foundation year in September 2021**

**UCAS Code: F110**

**UFPHARMCHBFY**

**This document sets out key information about your Programme and forms part of your Terms and Conditions with the University of Reading.**

Awarding Institution	University of Reading
Teaching Institution	University of Reading
Length of Programme	4 years
Accreditation	The Royal Society of Chemistry

### **Programme information and content**

The programme aims to provide you with a tailored coverage of the core chemistry that underpins the Chemist's role within the Pharmaceutical industry. You will study Organic Analytical, Physical and Inorganic Chemistry as part of this four-year BSc programme. There will also be a strong focus on biology as this knowledge underpins much of the chemist's activity in this field. Throughout the course there will be opportunities to work individually or as part of a team; this may take the form of a practical experiment or an oral presentation or a group exercise. The Foundation Year forms Part 0 of this course, which provides you with the basic knowledge and essential foundations to succeed on our Pharmaceutical Chemistry programme. Furthermore, the course is designed as a progression with Parts 1 and 2 being core knowledge that is fundamentally important to enable you to progress to more challenging topics in your final year. The course requires every student to remember, understand and apply details and information provided in lecture courses across terms and years, in order that more advanced courses can be fully understood and that the student becomes adept at problem solving.

Foundation year:	The Foundation Year provides you with the scientific background required to succeed on the subsequent years of the course. You will acquire a broad foundation in Chemistry, scientific calculations, plus another subject (to be selected from a list of optional modules). Additionally, our Academic Skills module gives you all the skills necessary to excel at University. The goal of Part 0 is to provide each student with basic core knowledge suitable for your chosen pathway and the confidence of transitioning to Higher Education.
Part 1:	Introduces you to the basic underpinnings of Organic Chemistry and Biology, with aspects of Physical and Inorganic Chemistry taught to broaden understanding. Through material that will begin as a revision of A-level topics, it will progress rapidly and will present this familiar material in a new light. The goal of year 1 is to give each student the tools necessary to help them become an independent learner, provide the necessary background to enable rationalisation and predictions for unseen processes and reactions.
Part 2:	Provides you with more in-depth study of Inorganic, Organic and Physical Chemistry. The second year sees the introduction of a dedicated stream of Analytical chemistry that is also reflected in the content of the practical class. The material covered in the second year is challenging, it builds on the content

	of year 1 and extends the complexity and depth of study to allow study and analysis of real world problems. Much of the material introduced in year 2 is still regarded as fundamental and a thorough understanding of the content is required for study in year 3.
Part 3:	Gives you the opportunity to begin to see the application of Chemistry at the forefront its applications. The content is deliberately broad, covering all 4 streams of the discipline. The material is now beginning to become more specialised and you will experience this through study of a series of smaller self-contained units within your core modules. The final year relies heavily on accumulated knowledge built up in Parts 1 and 2. The main component of the final year is the research project. Whether in a team or as an individual researcher, you will be given a choice in the area in which you wish to undertake your project work, and will have a chance to undertake a piece of research work that is your own. You will work with an assigned academic supervisor who will advise and encourage you to develop the work to its fullest extent that the time limits permit. More details of this can be found in the project handbook.

### Module information

Each part comprises 120 credits, allocated across a range of compulsory and optional modules as shown below. Compulsory modules are listed.

#### Foundation modules:

Module	Name	Credits	Level
BI0MF1	Mathematics Foundation	20	0
CH0CHE	Chemistry	40	0
IF0RAS	Foundation in Academic Skills	20	0

Students must complete CH0CHE, IF0RAS and BI0MF1 in Part 0 of the programme. Students must select a further 40 credits of optional modules at Part 0 from a list provided by the School of Chemistry, Food & Pharmacy.

International Students take IF0ACA (Academic Skills), in place of IF0RAS (Foundation in Academic Skills), as IF0ACA is specifically targeted to the needs of international students.

Students with adequate prior learning in subject areas that are compulsory in Part 0 may be eligible to apply for a Recognition of Prior Learning (RPL) exemption from a limited number of modules. Students with an approved RPL exemption will be permitted to take alternative optional modules to the same number of credits overall. Students will need to consult the Programme Director with regards to optional modules available and choice may be restricted by timetable constraints.

#### Part 1 Modules:

Module	Name	Credits	Level
BI1BEC1	Building Blocks of Life	20	4
BI1MB2	Metabolic Biochemistry	10	4

CH1CC2	Chemical Concepts and Skills 1	20	4
CH1IN4	Inorganic Chemistry for Biological Sciences	10	4
CH1OR1	Shape, Structure and Reactivity in Organic Chemistry	20	4
CH1PH2	Physical Processes for Biologists	10	4
CH1PRAX	Laboratory Skills for Chemists	20	4

The following module is compulsory for students who do not have an A-level pass in Mathematics:

Code	Module Title	Credits	Level
CH1M3	Mathematics M for Chemistry	10	4

The following module is compulsory for students who have an A-level pass at grade C-E in Mathematics and optional for those with a grade A-B:

Code	Module Title	Credits	Level
CH1M2	Mathematics for Chemistry 2	10	4

Students who exceed the requirements for the compulsory maths courses may select a 10 credit optional module from outside the Department.

### Part 2 Modules:

Module	Name	Credits	Level
BI2BE4	Pharmacology and Toxicology	10	5
BI2BL5	Protein Structure and Function	10	5
CH2AN3	Analytical Chemistry	10	5
CH2CC2	Chemical Concepts and Skills 2	10	5
CH2MC2	Medicinal Chemistry 2 for Chemists	10	5
CH2MIM	The Uses of Metals in Medicine	10	5
CH2OR1	Further Organic Chemistry	20	5
CH2PC2	Aspects of chemical biology	10	5
CH2PRAX	Extended Laboratory Skills for Chemists	30	5

### Modules during a placement year or study year (if applicable):

Module	Name	Credits	Level
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If you take a year-long placement or study abroad, Part 3 as described below may be subject to variation.

### Part 3 Modules:

Module	Name	Credits	Level
CH3AN3	Advanced Analytical Techniques for the Pharmaceutical Sciences	10	6
CH3MED	Medicinal Chemistry	10	6

CH3O1	Advanced Organic Chemistry - Synthesis of Complex Targets	10	6
CH3O2	Advanced Organic Chemistry - Contemporary Synthetic Methodology	10	6
CH3PC	Pharmaceutical Chemistry from an industrial perspective	10	6
CH3PR	BSc Chemistry Project	40	6

The remaining credits will be taken from the list of optional modules provided by the School of Chemistry, Food and Pharmacy.

### Optional modules:

The optional modules available can vary from year to year. An indicative list of the range of optional modules for your Programme is set out in the Further Programme Information. Details of optional modules for each part, including any Additional Costs associated with the optional modules, will be made available to you prior to the beginning of the Part in which they are to be taken and you will be given an opportunity to express interest in the optional modules that you would like to take. Entry to optional modules will be at the discretion of the University and subject to availability and may be subject to pre-requisites, such as completion of another module. Although the University tries to ensure you are able to take the optional modules in which you have expressed interest this cannot be guaranteed.

### Additional costs of the programme

During your programme of study you will incur some additional costs.

For textbooks and similar learning resources, we recommend that you budget between £50 to £150 a year. The core textbook(s), which most students normally purchase, cost(s) £65 new, and there may be other books/resources which you would find it convenient to buy.

The core chemistry textbook is available in e-book format from the University library. Some books may be available second-hand, which will reduce costs. A range of resources to support your curriculum, including textbooks and electronic resources, are available through the library. Reading lists and module specific costs are listed on the individual module descriptions.

Printing and photocopying facilities are available on campus at a cost of £0.05 per page. Costs will be, on average, £10 per year.

As Chemistry is a practical subject, you will be provided with the relevant personal protective equipment during your course (laboratory coat and safety glasses).

Costs are indicative and may vary according to optional modules chosen and are subject to inflation and other price fluctuations.

The estimates were calculated in 2020.

### **Placement opportunities**

The programme has an equivalent programme which features a placement year or year abroad component. All students are included in all of the sessions that run to encourage and prepare students to seek placements and/or study abroad opportunities. These begin in part one and are run by the Department and the Careers and Placements services. If you decide that you wish to undertake a placement or study abroad opportunity, we encourage this option for all students, and are successful in finding a placement or study abroad opportunity, you should discuss programme transfer with your personal tutor. Programmes at BSc and MChem level are available for study abroad or placement students. Please note, some restrictions apply on transfer from BSc to MChem programmes (see the handbook for more information).

### **Teaching and learning delivery:**

You will be taught through lectures, tutorials, workshops and laboratory classes.

Assessment takes a variety of formats; tutorials are assessed by submission of written work prior to the date of the tutorial meeting, Laboratory classes are primarily assessed via a write-up of the laboratory work and results, lecture material for most modules is assessed via an end of year examination. You will also be assessed carrying out oral presentations, group work and team work exercises.

The contact hours for your Programme will be approximately 15 hours per week and will depend upon your module combination; however information about module contact hours can be located in the relevant module description.

### **Accreditation details**

The Royal Society of Chemistry

### **Assessment**

The programme will be assessed through a combination of written examinations, coursework, oral examinations, practical examinations.

### **Progression**

The University-wide rules relating to 'threshold performance' as follows

#### **Part 0**

- (i) an overall average of at least 40% over all modules taken in Part 0; with
- (ii) no more than 40 credits of these modules with a mark below 35%; and
- (iii) at least 40% in the Academic Skills module

In order to progress from Part 0 to Part 1, a student must achieve a threshold performance;  
and

(iv) at least 55% in each of two 40 credit modules (including CH0CHE); and

(v) an average of at least 40% in the remaining two compulsory modules (BIOMF1 and IFORAS or IF0ACA)

(vi) no module mark below 35%.

The achievement of a threshold performance at Part 0 qualifies a student for a Certificate of Completion if he or she leaves the University before completing the subsequent Part.

### **Part 1**

To gain a threshold performance at Part 1 a student shall normally be required to achieve:

- i. an overall average of 40% over 120 credits taken in Part 1, and
- ii. a mark of at least 30% in individual modules amounting to not less than 100 credits.

In order to progress from Part 1 to Part 2, a student shall normally be required to achieve a threshold performance at Part 1 and

- i. achieve a minimum of 40% in CHIPRAX.

The achievement of a threshold performance at Part 1 qualifies a student for a Certificate of Higher Education if they leave the University before completing the subsequent Part.

### **Part 2**

To gain a threshold performance at Part 2, a student shall normally be required to:

(i) obtain a weighted average of 40% over 120 credits taken at Part 2;

and

(ii) obtain marks of at least 40% in individual modules amounting to at least 80 credits;

and

(iii) obtain marks of at least 30% in individual modules amounting to at least 120 credits, except that a mark below 30% may be condoned in no more than 20 credits of modules owned by the Department of Mathematics and Statistics.

In order to progress from Part 2 to Part 3 in the **3 year programme**, a student must achieve a threshold performance and a mark of not less than 40% in the practical module CH2PRAX.

The achievement of a threshold performance at Part 2 qualifies a student for a Diploma of Higher Education if he or she leaves the University before completing the subsequent Part.

### **Classification**

Bachelors' degrees

The University's honours classification scheme is based on the following:

Mark	Interpretation
70% - 100%	First class
60% - 69%	Upper Second class
50% - 59%	Lower Second class
40% - 49%	Third class
35% - 39%	Below Honours Standard
0% - 34%	Fail

The weighting of the Parts/Years in the calculation of the degree classification is:

*Three year programmes:*

Part 2: one-third

Part 3: two-thirds

*Four year programmes, including professional/workplacement or study abroad:*

Part 2: one-third

Part 3: two-thirds

Placement/Study Abroad Year abroad not included in the classification

**For further information about your Programme please refer to the Programme Handbook and the relevant module descriptions, which are available at <http://www.reading.ac.uk/module/>. The Programme Handbook and the relevant module descriptions do not form part of your Terms and Conditions with the University of Reading.**

BSc Pharmaceutical Chemistry with Foundation for students entering Foundation year in session 2021/22

3 August 2020

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