

## Programme Specification

### BSc Pharmaceutical Chemistry

For students entering Part 1 in September 2020

UCAS Code: F108

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**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                            | 3 years   |
| Length of Programme with placement/year abroad | BSc Pharmaceutical Chemistry with a Year in Industry / Research - 4 years (UCAS Code: F109) |
| 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 three-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 course is designed as a progression with years 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 retain and remember 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.

|         |  |
|---------|--|
| 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. |

|                              |  |
|------------------------------|--|
| Placement/Study abroad year: | <p>The programme has an equivalent programme which features a placement year or year abroad component.</p> <p>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).</p>  |
| Part 3:                      | <p>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 years 1 and 2.</p> <p>The main component of the final year will comprise the research project. Whether in a team or as an individual researcher, you 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. You will be given a choice of the area in which you undertake your project work, more details of this can be found in the project handbook.</p> |

### Module information

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

#### 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 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 |
|--------|--------------------------|---------|-------|
| CH3PIN | BSc Industrial Placement | 120     | 6     |

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 at the outset of your course (laboratory coat and safety glasses). If you need to replace these items, they can be purchased from the Chemistry laboratory technical staff: £10 for a laboratory coat and £2 for 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 2019.

### **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.

### **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 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

In order to progress from Part 2 to Part 3 in the **4 year programme**, a student must achieve a threshold performance and obtain a pass in the professional/work placement or study abroad year. Students who fail the professional/placement year transfer to the nonplacement year version of the programme.

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 for students entering Part 1 in session 2020/21  
25 June 2019  
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