Programme Specification: Biological and Medicinal Chemistry: 3 Year Degree (2008 intake)

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<th>Awarding Institution: University of Exeter</th>
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<td>School(s)/Teaching Institution: School of Biosciences</td>
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<td>UCAS Code (if relevant): CF71</td>
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Programmes of Study

Students study a 360-credit degree programme, which is University-based. Normally, all full-time students are required to study 120 credits during each of three one-year stages (1, 2 and 3), although part-time study over a longer period may be possible by negotiation with the School. Part-time students negotiate the pattern of modules over the agreed time scale of their programme of study.

Each stage of the degree is made up of modules, and each module studied successfully contributes credits towards the degree. The credit rating of a module is proportional to its overall workload and one credit is nominally equivalent to 10 hours of work. The level of a module is indicated by the first number in its code (e.g. BIO1310 is a level 1 module). A module's level indicates its position in the progressive development of academic skills and abilities across the programme.

Each stage includes 30 weeks of term time, which comprises two 12-week semesters in which teaching activities take place. All modules in Biosciences are taught within a single semester except for the industrial placement modules and the Level 3 project.

University regulations allow students to progress to the next stage (or in the final year, to proceed to the award of an honours degree) once at least 90 credits have been passed and provided that an average of at least 40% has been achieved over the 120 credits of assessment for a stage, including the marks for any failed and condoned modules. However, the modules marked below with an asterisk are ‘non-condonable’, that is, if failed the failed assessment(s) must be retaken, for a maximum of 40%. The consequences of failing more than 30 credits in a stage, or of failing a module at a second attempt, are set out in the School's Examination Conventions.

Assessment marks obtained in Stage 1 do not contribute towards the overall mark on which the final award is based, but students must achieve an average of 40% for the stage for eligibility for progression to Stage 2. The overall mark for the classification of the final award is calculated from the marks for Stages 2 and 3 weighted in the ratio 1:2 respectively.

Single Honours in Biological and Medicinal Chemistry

The programme comprises the following modules (credit values in brackets).

**Stage 1**: BIO1411 Genetics (15); BIO1321 Essential Elements of Life (15); BIO1322 Structure and reactivity of Organic Compounds 1 (15); BIO1323 Physical Chemistry for the Life Sciences (15); BIO1324 Fundamental Skills for the Biosciences (15); BIO1325 Introduction to Biotechnology (15); BIO1329 Biochemistry (15); BIO1330 Microbiology & Cell Biology (15);

**Stage 2**: BIO2071 Research Skills and Bioethics (15); BIO2073 High-Throughput Biotechnology (15); BIO2075 Elements of Chemistry in Biological Systems (15); BIO2078 Medical & General Microbiology (15); BIO2084 Methods for Analysis of Biological Macromolecules (15); BIO2085 Structure and reactivity of Organic Compounds 2 (15); BIO2086 Metabolism (15); and 15 credits from: BIO2066 Forensic Science (15); BIO2072 Human Molecular Biology (15); BIO2079 Molecular Biology of the Cell (15);

**Stage 3**: either BIO3064* Biosciences Independent Research Project (45) or BIO3063* Biosciences Dissertations (45); BIO3040 Organic Synthesis (15); BIO3041 Pharmacology and Medicinal Chemistry (15); BIO3042 Secondary Metabolism and Metabolites (15); and at least 15 credits from the following
options: BIO3039 Medical Microbiology (15); BIO3043 Plant-microbe Interactions (15); BIO3044 Cell Cycle and Cancer (15); BIO3045 Cell Biology (15); BIO3069 Immunology (15); BIO3072 Medical Biotechnology (15); BIO3073 Special Topics in Current Research (15); and up to 15 credits from either the School of Biosciences or other Schools in the University.

A module may be taken only if the necessary pre-requisites have been satisfied, and if the module or an equivalent module has not been taken previously. Modules are not all available every year; options are offered each year at the discretion of the School.
### Educational Aims of the Programme

**In accord with those of the University as a whole, the general aims of this programme are:**

To provide education for students intended to give them competence in their chosen discipline, and to encourage them to develop their intellectual capabilities within an institution that is committed to advancing research, scholarship and learning, and to disseminating knowledge.

**More specifically, this programme aims:**

1. To provide students with knowledge and understanding of an interdisciplinary area at the interface between chemistry and biological sciences, of particular relevance to the pharmaceutical and biotechnological industries, from the fundamentals to the frontiers of the subject.

2. To provide students with the basic scientific, intellectual, and practical training that will prepare them for lifelong learning, and, if they wish, for a research career in biological and medicinal chemistry.

3. To enable students to experience a supportive learning environment that fosters their academic and personal development.

### Programme Outcomes

**In accord with those of the University as a whole, the intended general outcomes of this programme are:**

Successful students will have demonstrated a systematic understanding of key aspects of Biological and Medicinal Chemistry, including acquisition of coherent and detailed knowledge that is informed by the forefront of the discipline.

The intended specific learning outcomes for the Programme are that a student will be able to:

**Subject knowledge and core academic skills**

1. Demonstrate knowledge and understanding in all areas of Biological and Medicinal Chemistry (organic, inorganic and physical chemistry, molecular and cellular biology, microbiology, and biochemistry)

2. Demonstrate comprehensive/detailed knowledge and understanding in biological chemistry, pharmacology and medicinal chemistry, and aspects of molecular and cellular biology and biotechnology

3. Describe and evaluate aspects of current research in Biological and Medicinal Chemistry with use of reviews and research articles

4. Deploy established techniques of analysis and enquiry within Biological and Medicinal Chemistry

**Personal and key skills**

5. Communicate ideas effectively and professionally by written, oral and visual means

6. Study autonomously and undertake projects with minimum guidance

7. Select and properly manage information drawn from books, journals, and the internet

8. Interact effectively in a group.

The programme broadly conforms with the QAA Benchmark Statements for Biosciences and Chemistry.
Teaching, Learning and Assessment Methods

Within the programme, teaching and learning activities are designed to encourage a progressive acquisition of subject knowledge and skills by moving from study methods that have a greater degree of support and assistance towards more independent learning. The programme uses a diversity of teaching, learning and assessment methods.

Teaching and learning activities include: lectures; laboratory classes; research project or dissertation; group work.

Assessment takes place through examinations; short answer and multiple choice tests; practical work and reports; quantitative problems; project report or dissertation; oral presentations. Students are made aware of the marking criteria for all major pieces of work.

Each term, students have the opportunity to receive feedback on their performance from their Personal Tutor and they are encouraged to employ the University's provision for planning their own educational and personal development.

Support for Students and Students’ Learning

At Exeter, the University Library maintains its principal collections in the main library buildings on the Streatham and St Luke's campuses, together with a number of specialist collections in certain Schools. The total Library collection comprises over a million volumes and 3000 current periodical subscriptions. Information Technology (IT) Services provide a wide range of services throughout the Exeter campuses including open access computer rooms, some of which are available 24 hours, 7 days a week. Additionally, some Schools have their own dedicated facilities. Helpdesks are maintained on the Streatham and St Luke’s campuses, while most study bedrooms in halls and flats are linked to the University’s campus network.

On the Tremough campus in Cornwall, the Learning Resource Centre contains a library of 70,000 volumes and some specialist collections. IT Services provide a range of central services, including open and training clusters of PCs (available on a 24/7 basis) within the Centre, while some Schools have additional dedicated facilities. Network access is available from all rooms in the hall of residence on site.

It is University policy that all schools should have in place a system of academic and personal tutors for their students. A University-wide statement on such provision is included in the University’s TQA Manual.

Additionally, the following units at Exeter between them provide a wide range of student support services:

- Student Counselling Service
- Study Skills Service
- Student Advice Centre (Guild of Students)
- International Office
- Study Abroad Office
- Student Health Centre
- Family Centre (Streatham campus)
- Chaplaincy
- English and Foreign Language Centres
- Disability Resource Centre

The University Careers Advisory service provides expert advice to all students to enable them to plan their futures, through guidance interviews, psychometric testing, employer presentations, skills events, practice job interviews and CV preparation.

On the Tremough campus, student services are provided by the Combined Services for the University and for Falmouth College of Arts (with which the University shares the campus).

All Schools are required to possess Student/Staff Liaison Committees, which allow students to contribute directly to the enhancement of educational and other provision at discipline level.

The School of Biosciences offers every student meetings each term with a personal tutor who provides guidance and feedback on assessment performance. The School's fileserver/website includes the student handbook and learning materials. Every student has access to computers and printers within the School. Each student can expect reasonable access to all teaching staff through appointments. The School's Student/Staff Liaison Committee enables students and staff to jointly participate in the management and review of the teaching and learning provision.
15 Admission Criteria

Candidates must satisfy the general admissions requirements of the University and of the School of Biosciences. Offers are made on the basis of the UCAS form; interviews are usually only for mature and non-AL applicants. The School offers an Open Day for interested applicants.

The entrance requirements are agreed by the School of Biosciences Learning and Teaching Committee. Briefly, all Biological and Medicinal Chemistry programmes require GCE AL Biology and GCE AL Chemistry, or Biology and Chemistry at Higher Level in the IB. Complete and up-to-date information on entry requirements for Biosciences is found on the University of Exeter Undergraduate Study website [www.exeter.ac.uk/undergraduate/degrees/biosciences/entrydata.php]. For further information about the "typical offer" please refer to the University of Exeter Undergraduate Applications website [www.exeter.ac.uk/undergraduate/applications/offer.php].

The School will consider sensitively and sympathetically any application from disabled or widening participation applicants. All teaching and examination materials (including webCT) will be prepared according current university guidelines to facilitate accessibility.

16 Regulation of Assessment and Academic Standards

Each academic programme in the University is subject to an agreed School assessment marking strategy, underpinned by institution-wide assessment procedures. The security of assessment and academic standards is further supported through the external examiners appointed for each programme. Their responsibilities are described in the University's code for external examiners and include access to draft papers, course work and examination scripts. Attendance at the Board of Examiners and the provision of an annual report are both required. Clear procedures are also in place for the monitoring of these annual reports at both School and University level. See the University's TQA Manual for details of these processes (http://www.ex.ac.uk/admin/academic/tls/tqa/).

The School of Biosciences undertakes annual review of all its programmes and modules. Assessment procedures and marking criteria are available for all students on the School's fileserver/website: students are referred to these resources in the student handbook.

17 Indicators of Quality and Standards

The University and its constituent Schools draw on a range of data in their regular review of the quality of provision. The annual produced Performance Indicator Dataset details admission, progression, completion and first career destination data, including comparisons over a five-year time-span.

The Biological and Medicinal Chemistry programme is recognised by the Royal Society of Chemistry.

The Biological and Medicinal Chemistry degree has been subject to a QAA Subject Review within the School of Biological Sciences in 2000, when the provision was rated as excellent (22 out of 24 points).

18 Methods for Evaluating and Improving Quality and Standards

The University has procedures in place for the regular review of its educational provision, including the annual review of both modules and programmes which draw on feedback from such sources as external examiners' reports, student evaluation, student achievement and progression data. In addition, subject areas are reviewed every three years through a Periodic Subject Review. These procedures are recorded in codes of practice contained in the TQA Manual.

The School's Education Committee meets at least once per term. The Student/Staff Liaison committee meets termly and reports to the School Meeting. Student evaluation of modules is collected and considered by these committees.

14.05.2007