

School of Life and Medical Sciences

Title of Programme: Pharmaceutical Science

Programme Code: LMPSC

Programme Specification

This programme specification is relevant to students entering:
21 September 2020

Associate Dean of School (Academic Quality Assurance):
Philomena Shaughnessy

Signature 

A programme specification is a collection of key information about a programme of study (or course). It identifies the aims and learning outcomes of the programme, lists the modules that make up each stage (or year) of the programme, and the teaching, learning and assessment methods used by teaching staff. It also describes the structure of the programme, its progression requirements and any programme-specific regulations. This information is therefore useful to potential students to help them choose the right programme of study, to current students on the programme, and to staff teaching and administering the programme.

Summary of amendments to the programme

| Date | Section | Amendment |
|------|---------|-----------|
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| | | |

If you have any queries regarding the changes please email AQO@herts.ac.uk

Programme Specification **Pharmaceutical Science**

This programme specification (PS) is designed for prospective students, enrolled students, academic staff and potential employers. It provides a concise summary of the main features of the programme and the intended learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. More detailed information on the teaching, learning and assessment methods, learning outcomes and content for each module can be found in Definitive Module Documents (DMDs) and Module Guides.

Section 1

| | |
|------------------------------------|--|
| Awarding Institution/Body | University of Hertfordshire |
| Teaching Institution | University of Hertfordshire |
| University/partner campuses | College Lane |
| Programme accredited by | Not applicable |
| Final Qualification | BSc Hons |
| All Final Award titles | Pharmaceutical Science/ Pharmaceutical Science with a year |
| (Qualification and Subject) | abroad/ Pharmaceutical Science (Sandwich) |
| FHEQ level of award | 6 |
| UCAS code(s) | B202 |
| Language of Delivery | English |

A. Programme Rationale

- This programme was designed with extensive input from external stakeholders from pharmaceutical and biotechnology companies to meet the needs of the ever evolving pharma industry in the UK and worldwide.
- This programme will produce graduates who are able to contribute to research, discovery, development and production in the pharmaceutical industry and related areas. The emphasis on transferable, as well as specialist skills, will equip graduates with these qualities to enter a range of other professions.
- The programme enables students to lay a strong foundation in biology, chemistry and pharmacology and build on this to apply these subjects to the various stages in medicine discovery development and production. Particular attention is paid to the practical laboratory skills with the number of laboratory based practical hours greatly enhanced compared to our previous programmes at the direct request of the prospective employers engaged in the programme redevelopment. The principles of GxP and documentation to equip the graduates for entry level positions in the pharmaceutical industry have also been extensively included at the employers' request.
- The optional industrial placement sandwich year or study abroad year give students the opportunity to supplement their formal education with invaluable research experience and form links with potential employers.
- This programme also equips students with the foundation skills required for taught postgraduate study or postgraduate research programmes in this field.
- Following successful completion of this programme and a further period of relevant experience whilst working in a suitable field, graduates may be eligible to apply to become a Pharmaceutical Scientist member of the Royal Pharmaceutical Society or an Associate member of the Royal Society of Chemistry.

B. Educational Aims of the Programme

The programme has been devised in accordance with the University's graduate attributes of programmes of study as set out in [UPR TL03](#).

Additionally this programme aims to:

- enable students to develop the high level knowledge, practical and analytical skills appropriate to the discovery, design, development, formulation, and manufacture of pharmaceutical products.

C. Intended Learning Outcomes

The programme provides opportunities for students to develop and demonstrate knowledge and understanding, skills and other attributes in the following areas. The programme outcomes are referenced to the Frameworks for Higher Education Qualifications of UK Degree-Awarding Bodies (2014) and relate to the typical student. Additionally, the SEEC Credit Level Descriptors for Further and Higher Education (2016) have been used as a guiding framework for curriculum design.

| Knowledge and Understanding | Teaching and learning methods | Assessment strategy |
|---|--|---|
| <p>A1-understand and apply the fundamental chemical and biological principles on which pharmaceutical sciences is based;</p> <p>A2-understand the molecular basis of the discovery, design, synthesis and mode of action of drugs;</p> <p>A3-apply an understanding of microbiology and immunology to the preparation and supply of sterile medicines and the control of sterility in pharmaceutical manufacture and storage;</p> <p>A4-apply the principles of medicinal, analytical and process chemistry to drug design, synthesis and manufacture;</p> <p>A5-understand the principles of pharmacokinetics, product formulation, and delivery route underlying the optimization of drug administration;</p> <p>A6 – understand the main analytical techniques and instrumentation used in pharmaceutical dosage form development and testing.</p> <p>A7 – be familiar with and able to apply the regulations governing pharmaceutical product development</p> <p>A8-where appropriate gain experience from a work placement (i.e. sandwich students) and/or period overseas</p> | <p>Acquisition of knowledge and understanding is through a combination of lectures, laboratory classes, workshops throughout the course, as well as the project and, for sandwich students, the industrial training experience.</p> <p>Throughout, the learner is encouraged to undertake independent study both to supplement and consolidate what is being taught/learnt and to broaden their individual knowledge and understanding of the subject.</p> <p>Acquisition of A1 is introduced through all level 4 modules, specifically the <i>Foundations of Pharmaceutical Chemistry, Biology and Biochemistry, and Human Physiology and Pharmacology</i> modules. It is further built upon throughout levels 5 and 6.</p> <p>A2 is covered in <i>Foundations of Pharmaceutical Chemistry, Human Physiology and Pharmacology, Pharmacology, Methods in Drug Design</i> and all level 6 modules.</p> <p>A3 is covered in <i>Human Physiology and Pharmacology</i> and more specifically in <i>Dosage Form Design and Manufacture</i> at level 5.</p> <p>A4 is covered in the specialist level 5 modules, <i>Methods in Drug Design</i> and <i>Dosage Form Design and Manufacture</i>.</p> | <p>Knowledge and understanding are assessed through a combination of laboratory reports, seminars, group work, problem solving, interpretive exercises, written assignments, the project and unseen examinations (A1-A7).</p> <p>Performance on the placement year (A8) is assessed by a report and the performance of the student during the year as monitored by the industrial and academic supervisors.</p> |

| | <p>A5 is achieved through the <i>Pharmacology and Dosage Form Design and Manufacture</i> modules.</p> <p>A6 is primarily achieved through the two analytical modules (<i>Fundamentals of Analytical Chemistry</i> and <i>Advanced Analytical Techniques and Quality Assurance</i>) and the <i>Project</i>.</p> <p>A7 is covered throughout the entire course where the regulations are integrated in to all modules, but specifically in the level 5 module advanced analytical techniques and quality assurance and the level 6 modules <i>Pharmaceutical Industry Practice</i> and <i>Applied and Integrated Pharmaceutical Science</i>.</p> <p>Acquisition of A8 is achieved in the optional industrial placement/ year abroad.</p> | |
|---|--|--|
| Intellectual skills | Teaching and learning methods | Assessment strategy |
| <p>B1-understand the ethical implications of their work;</p> <p>B2-execute and report a research project in order to develop the necessary skills for independent research;</p> <p>B3-apply theoretical concepts to the study of pharmaceutical science and evaluate the relationship between theory and practice;</p> <p>B4-develop and demonstrate an understanding of the existence and nature of value judgments;</p> <p>B5-demonstrate at a level appropriate to the award, a critical approach in enquiry and a readiness to test hypothesis, interpret scientific data and evaluate published literature</p> | <p>Intellectual skills are developed through various activities and exercises throughout the programme. Specifically, students are given a firm grounding in ethical practices in science (B1) throughout level 4 with issues further developed specific to pharmaceutical science in the level 5 modules.</p> <p>B2 is predominantly achieved through the <i>Project</i> module at level 6.</p> <p>The relationship of theory to practice (B3) is a fundamental basis of the programme and is achieved throughout all modules and very specifically is the basis of the optional placement year. Workshops throughout all modules form the basis for B4, which is also supplemented through the personal academic tutors and specifically applied to clinical research in the level 6 module <i>Applied and Integrated Pharmaceutical Science</i>.</p> <p>To acquire B5 statistical analysis is introduced in <i>Human Physiology and Pharmacology</i> at</p> | <p>Intellectual skills B1 and B3 are assessed through laboratory reports, written assignments and the group work in the Pharmaceutical industry practice module.</p> <p>B2 is assessed through the production of a dissertation and poster presentation in the project module at level 6.</p> <p>B4 and B5 are assessed through laboratory reports, unseen tests, examinations, interpretive exercises, seminars, vivas and the project.</p> |

| | | |
|---|---|--|
| | <p>level 4, and reinforced and strengthened through the workshops in the <i>Project</i> module at level 6. Critique and evaluation of scientific data is introduced in level 5 and developed throughout level 6 modules most noticeably the <i>Project</i>.</p> <p>Throughout, the learner is encouraged to develop intellectual skills further by independent study</p> | |
| Practical skills | Teaching and learning methods | Assessment strategy |
| <p>C1-acquire appropriate laboratory skills, including safe working practices where relevant;</p> <p>C2-acquire appropriate analytical instrumentation skills;</p> <p>C3-acquire appropriate documentation and record keeping skills</p> <p>C4 – design experiments and analyse and interpret data.</p> | <p>Practical skills are developed through all modules in the programme, most of which contain a heavy practical component. Laboratory skills (C1) are built up during level 4 and 5 and consolidated in the level 6 <i>Project</i>.</p> <p>Analytical skills (C2) are specifically introduced in the <i>Fundamentals of Analytical Chemistry</i> module at level 4, developed through the <i>Advanced Analytical Techniques and Quality Assurance</i> module at level 5 and reinforced in the <i>Project</i> at level 6. C3 and C4 are developed throughout all practical components of the course, with C4 particularly a key component of the level 6 <i>Project</i> module. Data analysis is introduced through assignments at level 4 in the <i>Human Physiology and Pharmacology</i> module and further developed in the level 5 module <i>Pharmacology</i>.</p> | <p>Practical skills are assessed through both formative and summative assessment in laboratory classes and assessed practicals; laboratory reports, interpretative exercises, group work and the project.</p> |
| Transferable skills | Teaching and learning methods | Assessment strategy |
| <p>D1-communicate effectively both orally and in written form</p> <p>D2-use effectively a range of information sources</p> <p>D3-organise and present intellectual argument commensurate with the level of award</p> <p>D4-work effectively both alone, and as part of a team</p> <p>D5-Demonstrate numeracy and manipulate, analyse and present data</p> | <p>Transferable skills are developed throughout all modules on the programme, specifically acquisition of D1 is introduced through exercises in level 4 such as laboratory reports and assignments; seminars, presentations and group work, developed throughout level 5 and further enhanced through the group working scenarios in <i>Pharmaceutical Industry Practice</i>, the viva in <i>Applied and Integrated Pharmaceutical Science</i> and the <i>Project</i> poster at level 6. Acquisition of D2 is through</p> | <p>Transferable skills D1, D2 and D3 are assessed through a combination of essays, abstracts, laboratory reports, posters, seminars, group reports, the <i>Project</i> report and written examinations throughout the course. Performance in these skills are monitored by personal academic tutors. D4 is assessed formatively by feedback in the laboratory, workshops and personal tutor groups and summatively in individual</p> |

D6-develop the skills required for continued self-managed professional development

induction classes at all three levels and in lectures, workshops and problem solving exercises in levels 4 and 5. Higher level skills are obtained and demonstrated through the planning and conduct of the *Project* and the group project work in the *Pharmaceutical Industry Practice* module at level 6. In both these level 6 modules, information seeking will be facilitated by the project tutor or group mentor respectively. The teaching of D3 is initiated in *Biology and Biochemistry* with exercises on report writing; during year 1, personal academic tutors give feedback on written assignments and practical reports from a number of modules to facilitate the development of skills; seminars at level 6 in the *Project* module and the *Project* itself make a significant contribution to the development of this skill. The acquisition of D4 is throughout all the practical components of the programme where students are required to work alone or as part of a team and in some modules, to carry out group assignments. This will be particularly developed and demonstrated in the group work of the level 6 module *Pharmaceutical Industry Practice*. The acquisition of D5 (numeracy) is initiated in lectures, workshops and class exercises in all modules at level 4 and is developed and reinforced throughout the programme in laboratory classes, workshops, personal academic tutor meetings and the project. Students have access to mathematics drop in sessions. The development of self-management skills (D6) is facilitated and monitored by personal academic tutors involving discussion of skills relevant to successful performance on the degree and future employability. The placement year (if taken) makes significant contributions to

and group reports, poster presentations and the project. Testing of this skill is a major component of the assessment of the sandwich year (if taken). D5 (numeracy) is assessed through many of the laboratory assessments, particularly in modules such as *Biology and Biochemistry*, *Fundamentals of Analytical Chemistry* and *Advanced Analytical Techniques* and *Quality Assurance*, and the *Project*. D6 is assessed through the placement report (if a sandwich year is taken) and through the project.

the attainment of this skill.

Throughout, the learner is encouraged to develop transferable skills by maintaining a record of evidence and completing a personal development plan.

D. Programme Structures, Features, Levels, Modules, and Credits

The programme is offered in full time (3 years), sandwich (4 years) and year abroad (4 years) modes, and leads to the award of a BSc with Honours in Pharmaceutical Science. Entry is normally at level 4 with A-level or equivalent qualifications but is possible at level 5 or 6 with suitable qualifications (HND or successful completion of level 4/5 of comparable degrees elsewhere). The intake is normally semester A (September).

Professional and Statutory Regulatory Bodies

Not applicable

Work-Based Learning, including Sandwich Programmes

Sandwich Year/Year Abroad (Optional)

A designated sandwich programme leads to a University award in the sandwich mode and the word "Sandwich" appears on the award certificate. In order for the BSc to lead to an award in the sandwich mode, the student must undertake a period of approved work experience (industrial/research placement) of not less than 48 weeks excluding holidays, normally between the end of Year 2 and the beginning of Year 4. To achieve this, students must start their placement before 1st October. The placement will normally be completed within the United Kingdom, but there is also an option to study abroad at approved partner institutions. A year abroad is deemed to be not less than two semesters in the host institution. Progress of the student's training is monitored by visits from the University's academic staff. Students will be required to document this period of work in accordance with the guidelines produced by the Department of Pharmacy. Students on sandwich placement will be registered on the Sandwich Year Placement module (6LMS0023) and those that study abroad on the Year Abroad module (6LMS0022). Subject to the requirements of the employer, an enhanced Disclosure and Barring Service check may be required before a student can be offered a placement.

Year Abroad (Optional)

A designated year abroad programme leads to a University award with the words 'Year Abroad' on the award certificate. The additional year comprises an agreed programme of study in the third year at a partner institution (other than the UK), with whom the University of Hertfordshire has an institutional agreement. The programme of study will support, supplement and extend the more usual three-year programme. Success in the third year abroad will be recognised in the title of award, but does not carry additional credit towards the Honours programme.

Prior to the commencement of the Year Abroad, the student and Programme Officers from UH and the host institution will agree a learning contract and mode of assessment. The programme, provided by the host institution, may consist of taught modules, a research project or a mixture of these components. The student will normally elect for this mode of study on initial enrolment at UH. The student must confirm his or her intention to study abroad during the first term of study at Level 5. This will enable a place to be negotiated at a host institution and the study programme to be arranged and agreed. Only a limited number of places exist and they will be made available on a competitive basis. Selection will take into account the student's academic performance on the programme.

Erasmus Exchange programme

N/A

Programme Structure

The programme structure and progression information below (Table 1a and 1b) is provided for the Honours award. Any interim awards are identified in Table 1b. The Programme Learning Outcomes detailed above are developed and assessed through the constituent modules. Table 2 identifies where each learning outcome is assessed.

Table 1a Outline Programme Structure

Mode of study Full time, Sandwich

Entry point Semester A

Level 4 BSc (Hons) Pharmaceutical Science

| Compulsory Modules Module Title | Module Code | Credit Points | Language of Delivery | % Examination | % Coursework | % Practical | Semesters |
|---|-------------|---------------|----------------------|---------------|--------------|-------------|-----------|
| Foundations of Pharmaceutical Chemistry | 4LMS0111 | 30 | English | 50 | 50 | 0 | AB |
| Fundamentals of Analytical Chemistry | 4LMS0110 | 30 | English | 50 | 50 | 0 | AB |
| Human Physiology and Pharmacology | 4LMS0002 | 30 | English | 0 | 100 | 0 | AB |
| Biology and Biochemistry | 4LMS0112 | 30 | English | 50 | 50 | 0 | AB |

Level 5 BSc (Hons) Pharmaceutical Science

| Compulsory Modules Module Title | Module Code | Credit Points | Language of Delivery | % Examination | % Coursework | % Practical | Semesters |
|--|-------------|---------------|----------------------|---------------|--------------|-------------|-----------|
| Dosage Form Design and Manufacture | 5LMS0024 | 30 | English | 50 | 50 | 0 | AB |
| Advanced Analytical Techniques and Quality Assurance | 5LMS0058 | 30 | English | 50 | 50 | 0 | AB |
| Methods in Drug Design | 5LMS0059 | 30 | English | 50 | 50 | 0 | AB |
| Pharmacology | 5LMS0025 | 30 | English | 50 | 50 | 0 | AB |

Placement year (optional)

| Optional modules Module Titles | Module Code | Credit Points | % examination | % coursework |
|-----------------------------------|-------------|---------------|---------------|--------------|
| Sandwich Year: Bioscience | 6LMS0023 | 0 | 0 | 100 |
| Year Abroad: Bioscience | 6LMS0022 | 0 | 0 | 100 |

Level 6 BSc (Hons) Pharmaceutical Science

Compulsory Modules

| Module Title | Module Code | Credit Points | Language of Delivery | % Examination | % Coursework | % Practical | Semesters |
|---|-------------|---------------|----------------------|---------------|--------------|-------------|-----------|
| Project | 6LMS0076 | 60 | English | 0 | 100 | 0 | A |
| Pharmaceutical Industry Practice | 6LMS0077 | 15 | English | 0 | 100 | 0 | B |
| Applied and Integrated Pharmaceutical Science | 6LMS0027 | 15 | English | 0 | 100 | 0 | B |

Optional Modules

| Module Titles | Module Code | Credit Points | Language of Delivery | % examination | % coursework | % Practical | Semesters |
|--|-------------|---------------|----------------------|---------------|--------------|-------------|-----------|
| Topics in Medicine Design | 6LMS0078 | 30 | English | 50 | 50 | 0 | B |
| Advances in Pharmaceutical Formulation and Drug Delivery | 6LMS0079 | 30 | English | 50 | 50 | 0 | B |

Progression to level 5 requires a minimum of 120 credits

Progression to level 6 requires 240 credits with a minimum of 120 credits at level 5

The award of an Honours degree requires 360 credit points with a minimum of 120 at level 6 including the Project (LMS0076).

Honours classification

The University has approved structure and assessment regulations common to all programmes. Full details are provided in [UPR AS14](#), Section D.

Table 1b Final and interim awards available

The programme provides the following final and interim awards:

| Final Award | Award Title | Minimum requirements | Available at end of Level | Programme Learning Outcomes developed (see above) |
|---|-----------------------------------|--|---------------------------|---|
| BSc (Hons) in Pharmaceutical Science | BSc (Hons) Pharmaceutical Science | 360 credit points including 240 at level 6/5 of which 120 must be at level 6 | 6 | All programme learning outcomes (see Table 2) |
| BSc (Hons) in Pharmaceutical Science with year abroad | BSc (Hons) Pharmaceutical Science | 360 credit points including 240 at level 6/5 of which 120 must be at level 6 | 6 | All programme learning outcomes (see Table 2) |
| BSc (Hons) in Pharmaceutical Science (Sandwich) | BSc (Hons) Pharmaceutical Science | 360 credit points including 240 at level 6/5 of which 120 must be at level 6 | 6 | All programme learning outcomes (see Table 2) |
| Interim Award | Award Title | Minimum requirements | Available at end of Level | Programme Learning Outcomes developed (see above) |
| University Certificate | | 45 credit points at level | 4 | See UPR AS11, section 13: http://sitem.herts.ac.uk/secreg/upr/AS11.htm |

| | | | | |
|---------------------------------|----------------------------|---|------|--|
| | | 4 | | |
| Certificate of Higher Education | | 120 credit points at level 4 | 4, 5 | See UPR AS11, section 13: http://sitem.herts.ac.uk/secreg/upr/AS11.htm |
| Diploma of Higher Education | | 240 credit points including at least 120 at level 5 | 5, 6 | See UPR AS11, section 13: http://sitem.herts.ac.uk/secreg/upr/AS11.htm |
| BSc in Pharmaceutical Science | BSc Pharmaceutical Science | 300 credit points including 180 at level 6/5 of which 60 must be at level 6 | 6 | A1, A2, A3, A4, A5, A6, A7, B1, B2, B3, B5, C1, C2, C3, C4, D1, D2, D3, D4, D5 |

Programme-specific assessment regulations

The programme complies with the University's academic regulations (in particular, [UPR AS11](#), [UPR AS12/UPR AS13](#) (delete as applicable) and [UPR AS14](#)).

Further programme-specific regulations (requiring School-level approval) are given below:

- Progression from level 4 to level 5 requires a minimum of 120cp at level 4
- Progression from level 5 to level 6 requires 240cp a minimum of 120 cp from level 5 and 120 cp from level 4
- For a student to be eligible to proceed to a Sandwich Placement or Year Abroad, they must, by the time of the Semester B Programme Board of Examiners, have achieved at least 240 credits overall including 120 at Level 5.
- Students who have not achieved the minimum progression requirements at the end of Level 5 may be prevented from undertaking a sandwich placement. Additionally, students on placement, but who have Level 5 modules to repeat, will not normally be allowed to re-enroll on these modules until they return from placement. This is to avoid a conflict between UH attendance requirements and the student's commitment to their placement provider. Students who do not take the sandwich option, progressing directly to Level 6, will continue on the full-time mode.
- A pass grade for the Sandwich Year Placement module is mandatory for the receipt of the named Sandwich degree award.
- For the Year Abroad, where study will be undertaken in a foreign language, students must meet the partner University language requirements.
- A pass grade for the Year Abroad module is mandatory for that named award.

E. Management of Programme & Support for student learning.

Management

The programme is managed and administered through:

- Dean of School of Life and Medical Sciences
- Associate Dean of School (AQA)
- Head of Department of Pharmacy
- A Programme Leader who is responsible for the day to day management of the programme
- An Admissions Tutor with specific responsibility for open days and selection
- A designated administrator to deal with day to day administration associated with the programme
- Module co-ordinators who are responsible for individual modules

- A Placement Tutor to assist with the procurement of placements
- A programme committee, the membership of which includes:
 - The Programme Leader (Chair)
 - Programme Administrator (Clerk)
 - Associate Dean (AQA) (Ex-officio)
 - Head of Department
 - Head of Division Pharmaceutics
 - Head of Division Pharmaceutical Chemistry
 - Head of Division Pharmacology
 - Head of Division Biosciences
 - Module co-ordinators
 - Admissions tutor
 - Placements tutor
 - IH representative
 - Representative of the technical staff
 - Teaching staff with a substantial input to the programme
 - Student representatives

Support

Students are supported by:

- A Programme Leader to help students understand the course structure
- Personal academic tutors to provide academic and pastoral support
- A project tutor at level 6
- A placement office to co-ordinate industrial training applications and support students during their placement year
- A University supervisor during the placement year
- An industrial supervisor during the placement year
- Student representatives on programme committees
- A designated programme administrator
- An induction week at the beginning of each academic session
- Overseas orientation
- StudyNet, a versatile on-line inter-active intranet and learning environment
- Access to extensive digital and print collections of information resources
- Attractive modern study environments in 2 learning resource centres
- A substantial student centre that provides advice on issues such as finance, University regulations, legal matters, accommodation, international student support, etc
- Office of the Dean of students, incorporating Chaplaincy, Counselling and nursery
- Medical centre
- A mathematics drop in centre
- University disability advisors
- An equal opportunities officer
- The Students' Union
- Guided student-centred learning on StudyNet module sites
- A careers service for all current students and graduates

F. Other sources of information

In addition to this Programme Specification, the University publishes guidance to registered students on the programme and its constituent modules:

- A Programme (or Student) Handbook;
- A Definitive Module Document (DMD) for each constituent module;
- A Module Guide for each constituent module.

- School of Life and Medical Sciences Policies (including: Disclosure and Barring Service Policy and Rules of Procedure and Proceedings with respect to a Student's Complaint regarding the Quality of the Learning Experience on Practice and Work Placements)
- QAA subject benchmark statements for Biomedical science, Bioscience and Chemistry

The [Ask Herts](#) website provides information on a wide range of resources and services available at the University of Hertfordshire including academic support, accommodation, fees, funding, visas, wellbeing services and student societies.

As a condition of registration, all students of the University of Hertfordshire are required to comply with the University's rules, regulations and procedures. These are published in a series of documents called 'University Policies and Regulations' (UPRs). The University requires that all students consult these documents which are available on-line, on the UPR web site, at: <http://www.herts.ac.uk/secreg/upr/>. In particular, [UPR SA07](#) 'Regulations and Advice for Students' Particular Attention - Index' provides information on the UPRs that contain the academic regulations of particular relevance for undergraduate and taught postgraduate students.

In accordance with section 4(5) of the Higher Education and Research Act 2017 (HERA), the UK Office for Students (OfS) has registered the University of Hertfordshire in the register of English higher education providers. The Register can be viewed at: <https://www.officeforstudents.org.uk/advice-and-guidance/the-register/the-ofs-register/>. Furthermore, the OfS has judged that the University of Hertfordshire delivers consistently outstanding teaching, learning and outcomes for its students. It is of the highest quality found in the UK. Consequently, the University received a Gold award in the 2018 Teaching Excellence and Student Outcomes (TEF) exercise. This award was made in June 2018 and is valid for up to 3 years. The TEF panel's report and conclusions can be accessed at: <https://www.officeforstudents.org.uk/advice-and-guidance/teaching/tef-outcomes/#/provider/10007147>

G. Entry requirements

The normal entry requirements for the programme are:

112 UCAS points with a minimum of a grade C in GCE A Level Chemistry plus at least one other Science subject at GCE A level or equivalent. Plus GCSE English language, mathematics and double science (or Biology and Chemistry) at grade C or above.

Equivalent qualifications will be considered on an individual basis, such as the Access to HE Certificate or approved equivalent.

All students from non-majority English speaking countries require proof of English language proficiency. The following qualifications and grades will be considered: GCSE English language grade A-C, or IELTS 6.5 (with no less than 6.0 in any band).

Some placement providers may require a Disclosure and Barring Service check prior to students being accepted onto a placement.

The programme is subject to the University's Principles, Policies and Regulations for the Admission of Students to Undergraduate and Taught Postgraduate Programmes (in [UPR SA03](#)), along with associated procedures. These will take account of University policy and guidelines for assessing accredited prior certificated learning (APCL) and accredited prior experiential learning (APEL).

If you would like this information in an alternative format, please contact: Mrs Allison Riley, Programme administrator.

If you wish to receive a copy of the latest Programme Annual Monitoring and Evaluation Report (AMER) and/or the External Examiner's Report for the programme, please email a request to aqo@herts.ac.uk

Pharmaceutical Sciences

Table 2: Development of Intended Programme Learning Outcomes in the Constituent Modules

This map identifies where the programme learning outcomes are assessed in the constituent modules. It provides (i) an aid to academic staff in understanding how individual modules contribute to the programme aims (ii) a checklist for quality control purposes and (iii) a means to help students monitor their own learning, personal and professional development as the programme progresses.

| | | | Programme Learning Outcomes (as identified in section 1 and the following page) | | | | | | | | | | | | | | | | | | | | | | | |
|--------------|--|-------------|---|----|----|----|----|----|----|----|---------------------|----|----|----|----|------------------|----|----|----|---|---------------------|----|----|----|----|----|
| | | | Knowledge & Understanding | | | | | | | | Intellectual Skills | | | | | Practical Skills | | | | | Transferable Skills | | | | | |
| Module Title | | Module Code | A1 | A2 | A3 | A4 | A5 | A6 | A7 | A8 | B1 | B2 | B3 | B4 | B5 | C1 | C2 | C3 | C4 | | D1 | D2 | D3 | D4 | D5 | D6 |
| Level 4 | Foundations of pharmaceutical chemistry | 4LMS0111 | x | x | | x | | | | | x | | | | x | x | | x | x | | x | x | | x | x | |
| | Fundamentals of analytical chemistry | 4LMS0110 | x | | | x | | x | | | x | | | | | x | x | x | x | | | x | | x | x | |
| | Human physiology and pharmacology | 4LMS0002 | x | | | | | | | | | | | | | x | x | | x | x | | x | x | x | x | x |
| | Biology and biochemistry | 4LMS0112 | x | x | x | | | | | | | x | | | | | x | | | x | | | | | | x |
| Level 5 | Dosage form design and manufacture | 5LMS0024 | x | x | x | | x | x | x | | x | | x | | x | x | x | x | x | | x | x | x | x | x | x |
| | Advanced analytical techniques and quality assurance | 5LMS0058 | x | | | x | | x | x | | x | | x | | x | x | x | x | x | | x | x | x | x | x | |
| | Methods in drug design | 5LMS0059 | x | x | | x | x | x | | | x | x | x | | x | x | | x | x | | x | x | x | x | | x |
| | Pharmacology | 5LMS0025 | x | x | | | x | | | | x | | x | | x | x | | x | x | | x | | x | | x | |
| Level 6 | Placement Year | | x | x | | | | x | | x | x | x | x | x | x | x | x | x | x | | x | x | x | x | | x |
| | Project | 6LMS0076 | x | x | | | | x | | | x | x | x | x | x | x | x | x | x | | x | x | x | x | x | x |
| | Pharmaceutical industry practice | 6LMS0077 | x | | | | | | x | | x | | | x | x | | | | x | | x | x | x | x | | x |
| | Applied and integrated pharmacological science | 6LMS0027 | | x | | | x | | x | | x | x | x | x | x | | | | | | x | | x | | x | |
| | Topics in medicine design (Option) | 6LMS0078 | | x | | x | | | x | | x | | x | | x | | | | | | x | x | x | x | | |
| | Advances in pharmaceutical formulation development and delivery (Option) | 6LMS0079 | | x | | | x | | x | | x | | x | | x | x | | x | x | | x | x | x | | x | |

KEY TO PROGRAMME LEARNING OUTCOMES

Knowledge and Understanding

- A1. understand and apply the fundamental chemical and biological principles on which pharmaceutical sciences is based;
- A2. understand the molecular basis of the discovery, design, synthesis and mode of action of drugs;
- A3. apply an understanding of microbiology and immunology to the preparation and supply of sterile medicines and the control of sterility in pharmaceutical manufacture and storage;
- A4. apply the principles of medicinal, analytical and process chemistry to drug design, synthesis and manufacture
- A5. understand the principles of pharmacokinetics, product formulation, and delivery route underlying the optimization of drug administration;
- A6. understand the main analytical techniques and instrumentation used in pharmaceutical dosage form development and testing.
- A7. be familiar with and able to apply the regulations governing pharmaceutical product development
- A8. where appropriate gain experience from a work placement (i.e. sandwich students) and/or period overseas

Intellectual Skills

- B1. understand the ethical implications of their work
- B2. execute and report a research project in order to develop the necessary skills for independent research
- B3. apply theoretical concepts to the study of pharmaceutical science and evaluate the relationship between theory and practice
- B4. display an awareness of the existence and nature of value judgments
- B5. demonstrate at a level appropriate to the award, a critical approach in enquiry and a readiness to test hypothesis, interpret scientific data and evaluate published literature

Practical Skills

- C1. acquire appropriate laboratory skills, including safe working practices where relevant
- C2. acquire appropriate analytical instrumentation skills
- C3. acquire appropriate documentation and record keeping skills
- C4. design experiments and analyse and interpret data.

Transferable Skills

- D1. communicate effectively using a variety of formats
- D2. use effectively a range of information sources
- D3. organise and present intellectual argument commensurate with the level of award
- D4. work effectively both alone, and as part of a team
- D5. be numerate at a level appropriate to the course
- D6. develop the skills required for continued self-managed professional development

Section 2

Programme management

| | |
|---|--------------------------------------|
| Relevant QAA subject benchmarking statements | None |
| Type of programme | Undergraduate |
| Date of validation/last periodic review | September 14 |
| Date of production/ last revision of PS | March 2018 |
| Relevant to level/cohort | All students entering September 2020 |
| Administrative School | School of Life and Medical Sciences |

Table 3 Course structure

| Course details | | |
|----------------|-----------------------------------|--------|
| Course code | Course description | HECOS |
| LMPSC | BSc (Hons) Pharmaceutical Science | 100251 |