Template C4

Programme Specification

Title of Course: *BSc (Hons) Pharmacology*

Date first produced	31/07/2014
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Version number	7
Faculty	Faculty of Health, Science, Social Care & Education
School	School of Life Sciences, Pharmacy and Chemistry
Department	Department of Chemical & Pharmaceutical Sciences
Delivery Institution	Kingston University

This Programme Specification is designed for prospective students, current students, academic staff and 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 they take full advantage of the learning opportunities that are provided. More detailed information on the learning outcomes and content of each modules can be found in the course VLE site and in individual Module Descriptors.

SECTION 1: GENERAL INFORMATION

Award(s) and Title(s): ***Up to 10 pathways***	BSc (Hons) Pharmacology
Intermediate Awards(s) and Title(s): ***There are 4 Intermediate awards for each pathway***	Cert HE Pharmacology Dip HE Pharmacology
Course Code ***For each pathway and mode of delivery***	UPPHC1PHC01 UFPHC1PHC01
UCAS code ***For each pathway***	B210/B211/B212 (full time/placement/foundation)

Award(s) and Title(s): ***Up to 10 pathways***	BSc (Hons) Pharmacology (with Professional Placement)
Intermediate Awards(s) and Title(s): ***There are 4 Intermediate awards for each pathway***	Cert HE Dip HE
Course Code ***For each pathway and mode of delivery***	
UCAS code ***For each pathway***	

Award(s) and Title(s): ***Up to 10 pathways***	BSc (Hons) Pharmacology (with Foundation Year)
Intermediate Awards(s) and Title(s): ***There are 4 Intermediate awards for each pathway***	Cert HE Dip HE
Course Code ***For each pathway and mode of delivery***	
UCAS code ***For each pathway***	

RQF Level for the Final Award:	Honours
Awarding Institution:	Kingston University
Teaching Institution:	Kingston University
Location:	Penrhyn Road
Language of Delivery:	English
Modes of Delivery:	Part-time Full-time

	With Professional Placement
Available as:	
Minimum period of registration:	Part-time - 6 Full-time - 3 With Professional Placement - 4
Maximum period of registration:	Part-time - 12 Full-time - 6 With Professional Placement - 8
Entry Requirements:	Kingston University typically uses a range of entry requirements to assess an applicant's suitability for our courses. Most course requirements are based on UCAS Tariff points, usually stipulated as a range, and are sometimes coupled with minimum grades in specific relevant subjects. We may also use interview, portfolio and performance pieces to assess an applicant's suitability for the course. We recognise that every person's journey to Higher Education is different and unique and in some cases we may take into account work experience and other non-standard pathways onto University level study. Additionally, all non-UK applicants must meet our English language requirements. Please see our course pages on the Kingston University website for the most up to date entry requirements.
Programme Accredited by:	Royal Society of Biology
QAA Subject Benchmark Statements:	*Biosciences (2023)*
Approved Variants:	The project (bioscience) module (LS6014) must be passed and cannot be compensated.
Is this Higher or Degree Apprenticeship course?	

For Higher or Degree Apprenticeship proposals only	
Higher or Degree Apprenticeship standard:	n/a
Recruitment, Selection and Admission process:	n/a

End Point Assessment Organisation(s):	n/a

SECTION 2: THE COURSE

A. Aims of the Course

- Pharmacology is the study of the effect of drugs on living systems and provides the scientific basis and principles that equip a student for understanding drug action, the use of drugs as therapeutic agents in medicine and as tools in scientific research, and the development and regulation of pharmaceuticals. This course focuses on the biological rather than chemical processes in drug action and addresses the curriculum requirements set out by the British Pharmacological Society. Students also have the option to undertake an extended period of work experience. Importance is attached to developing the skill base of each student on the course and to enable them to become independent and innovative thinkers.

  One of the key features of the programme is that year 1 is designed to give a comprehensive foundation understanding of how the human body works and provide the essential knowledge that underpins the study of pharmacology. This foundation includes a comprehensive overview of physiology, biochemistry and molecular biology, together with a scientific and laboratory skills module that is designed to train and provide confidence in practical laboratory and statistical techniques. Year 2 introduces pharmacology as a distinct subject, including comprehensive coverage of both general pharmacological principles and the parallel study of pharmacology on a body systems basis. This coverage is integrated with the continued development of research methods, using specific examples relevant to the study of pharmacology. Year 3 aims to provide further essential study of pharmacology, including pharmacological approaches to the treatment of infectious diseases and cancer and options to study either the central nervous system or bioinformatics and genetics in greater depth. An independent research project enables students to specialise within a particular area of interest and put into practice research methods and skills acquired over the course of the degree.

  In addition to the acquisition of subject specific skills, this course also allows for the development of a number of key transferable skills in order to improve employability subsequent to graduation. Graduate destinations are many and varied and include post graduate study, entry to post graduate medicine and dentistry, careers within large pharmaceutical companies and contract research organisations and within the field of medical writing.

  The programme is accredited by the Royal Society of Biology and entitles graduates to one year's membership as an Associate Member of the Royal Society of Biology (AMRSB).
  to provide students with an in-depth knowledge and understanding of the core elements of Pharmacology;
- to enable students to identify, locate and critically appraise primary and secondary sources as a basis for independent study and a major research project in the final year;
- to develop subject related practical skills;
- to provide students with the opportunities to develop their written and oral communication skills;
- to develop student creativity and innovation relevant to the workplace; and
- to prepare students for graduate employment, research, further study and lifelong learning by developing their intellectual, problem solving, practical and key (transferable) skills;

Additionally, for students following the sandwich programme:

- to enable students to complete a period of work experience within a relevant institution, building upon their previous academic knowledge and experience.
- to provide students with an insight into the nature of employment opportunities for pharmacologists by gaining first-hand experience.

B. 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 QAA subject benchmarks for Biosciences (2023) and the Frameworks for HE Qualifications of UK Degree-Awarding Bodies (2014), and relate to the typical student.

The programme learning outcomes are the high-level learning outcomes that will have been achieved by all students receiving this award. They must align to the levels set out in the 'Sector Recognised Standards in England' (OFS 2022).

Programme Learning Outcomes					
	Knowledge and Understanding On completion of the course students will be able to:		**Intellectual Skills** On completion of the course students will be able to		**Subject Practical Skills** On completion of the course students will be able to
A4	Demonstrate awareness of the career opportunities within pharmacology, or related subject areas	B7	Work effectively in a team and play a full part in achieving its success	C4	Use a range of complex instruments and understand their technological basis
A3	Demonstrate an understanding of underpinning bioscience subjects, including:Human physiologyCell and molecular biologyBiochemistry ImmunologyMicrobiology	B6	Develop original ideas and communicate them well to others (in written, oral and digital form)	C3	Select and perform key pharmacological techniques
A1	Demonstrate an understanding of pharmacological principles, includingbasic pharmacokinetics; the concept and nature of drug targets; the mechanisms of action and effects of a range of drugs on the physiological and biochemical systems of the body; the process of drug discovery and preclinical/clinical testing of drugs; and the latest research approaches and literature in the field	B5	Demonstrate the ability to be an independent, autonomous learner	C2	Design controlled experiments to investigate Pharmacological phenomena
A2	Demonstrate extensive knowledge and understanding of research methods and skills; along with the ethical implications of pharmacological research	B2	Apply subject knowledge and understanding to the solving of problems by using innovative methods	C1	Carry out subject-related practical work safely and understand and comply with ethical and safety regulations.
		B3	Plan, conduct and report on an individual research project		
		B1	Demonstrate the ability to critically evaluate and appraise both primary and secondary sources, and where		

			necessary integrate information from multiple sources		
		B4	Assemble and interpret data from a variety of sources (including academic literature) to discern and establish connections		

In addition to the programme learning outcomes, the programme of study defined in this programme specification will allow students to develop the following range of Graduate Attributes:

1. Creative Problem Solving
2. Digital Competency
3. Enterprise
4. Questioning Mindset
5. Adaptability
6. Empathy
7. Collaboration
8. Resilience
9. Self-Awareness

C. Outline Programme Structure

This programme is offered in full-time/part-time mode and leads to the award of BSc (Hons) Pharmacology (with an optional sandwich year between levels 5 and 6). Entry is normally at level 4 with A-level or equivalent qualifications (See section D). Transfer from a similar programme is possible at level 5 with passes in comparable level 4 modules – but is at the discretion of the course team. Intake is normally in September. Students have the opportunity to go abroad after their 1st year of studies through bilateral agreements signed with several institutions around the world. A sandwich programme option also enables students to complete a period of work experience within a relevant place on employment between the 2nd and 3rd years.

Each level is made up of four modules each worth 30 credit points (optional sandwich year between levels 5 and 6). Typically, a student must complete 120 credits at each level. All students will be provided with the University regulations and specific additions that are sometimes required for accreditation by outside bodies (e.g. professional or statutory bodies that confer professional accreditation). Full details of each module will be provided in module descriptors and student module guides.
See appendix for course block diagram

BSc (Hons) Pharmacology

Level 4							
BSc (Hons) Pharmacology							
Core modules	**Module code**	**Credit Value**	**Level**	**Teaching Block**	**Pre-requisites**	**Full Time**	**Part Time**
Genes, Cells and Tissues	LS4001	30	4	1 & 2			
Human Physiology	LS4004	30	4	1 & 2			
Scientific and Laboratory Skills	LS4003	30	4	1 & 2			
The Biochemical Foundations of Life	LS4002	30	4	1 & 2			
Optional Modules							

Progression to Level 5

This course permits progression from level 4 to level 5 with 90 credits at level 4 or above, unless specific module prerequisites prevent trailing of credit. The outstanding 30 credits from level 4 can be trailed into level 5 and must be passed before progression to level 6.

Students exiting the programme at this point who have successfully completed 120 credits are eligible for the award of Certificate of Higher Education.

Level 5							
BSc (Hons) Pharmacology							
Core modules	**Module code**	**Credit Value**	**Level**	**Teaching Block**	**Pre-requisites**	**Full Time**	**Part Time**
Microbiology	LS5021	15	5	1 and 2		2	2
Molecular Biology of the Cell	LS5001	30	5	1 & 2	None	1	2
Principles of Pharmacology	LS5027	30	5	1 and 2	None	1	2
Research Methods and Skills	LS5022	15	5	1 and 2		2	2
Sandwich Year Placement	LS5000	120	5	Minimum of 36 weeks throughout the year			
Systems Pharmacology	LS5010	30	5	1 & 2			
Optional Modules							

Progression to Level 6

This course permits progression from level 5 to level 6 with 90 credits at level 5 or above, unless specific module prerequisites prevent trailing of credit.
The outstanding 30 credits from level 5 can be trailed into level 6 and must be passed before consideration for an award or progression to level 7 (if appropriate).
Students exiting the programme at this point who have successfully completed 120 credits are eligible for the award of Diploma of Higher Education.

Level 6							
BSc (Hons) Pharmacology							
Core modules	**Module code**	**Credit Value**	**Level**	**Teaching Block**	**Pre-requisites**	**Full Time**	**Part Time**
Chemotherapy of Infectious & Neoplastic Disease	LS6003	30	6	1&2			
Current Concepts in Biomolecular Science	LS6002	30	6	1&2			
Project (Bioscience)	LS6014	30	6	1&2			

Optional Modules							
Brain and Behaviour	LS6004	30	6	1 & 2	Successful completion of Level 5		
Molecular Genetics and Bioinformatics	LS6001	30	6	1 & 2	LS5001		

Level 6 requires the completion of

Level 6 requires the completion of the compulsory modules and 1 option module

BSc (Hons) Pharmacology (with Professional Placement)

BSc (Hons) Pharmacology (with Foundation Year)

D. Principles of Teaching, Learning and Assessment

In Level 4 students will be equipped with the knowledge and skills to study more advanced topics in Pharmacology and related subjects at higher levels. The programme is designed for students who have studied Advanced Level Biology and/or Chemistry (or equivalents).

A wide range of learning and teaching strategies are used in the programme. These include:

- formal lectures
- e-learning
- group projects
- seminars
- problem solving classes
- small group tutorials
- case based learning
- practical investigations
- independent learning from guided texts and work books;
- research projects
- expert guest lecturers

Additionally, the assessment regime for each module has been designed to provide formative opportunities that allow students to practice and to receive feed forward on their performance in preparation for the summative assessment

Teaching and Learning will be supported by the Canvas learning management system, this has been successfully introduced by the University and is currently used by all LS modules. This web-based learning tool has been well received by students and will be used to supplement but not replace traditional methods of course delivery.

Knowledge and understanding of Pharmacology will be developed from level to level. Level 4 provides core underpinning knowledge necessary for the study of the mechanisms of drug action in Level 5. It also provides a foundation for the cell and molecular biology subjects studied at level 5 which in turn prepare the students for the detailed molecular aspects of drug discovery and action covered in level 6. In Level 5 students also study research methods as

a preparation for the Level 6 independent research project. Level 6 focuses on an understanding of various aspects of molecular pharmacology, antimicrobial therapy and toxicology. Final year students may also study bioinformatics, which is becoming an important tool for identifying drug targets and predicting drug response/toxicity.

From level to level, students progressively make use of more primary, research-based sources of information. They will develop skills to analyse and appraise original sources, assemble data from various sources, solve complex problems and in Level 6, be able to carry out an individual research investigation from the planning stage through to submission of a final report. Students are expected to become more independent in their learning from level to level. This culminates in the research project in Level 6.

Throughout all levels of study emphasis is placed on developing group work skills, written and oral communication and presentation skills, data handling and analysis skills, a range of ICT skills and independent learning skills. This provides the basis for students to enhance their personal objectives after graduation whether these relate to further research and/or training, careers, lifelong learning or personal development goals. The use of personal development planning is encouraged as a self reflection tool for this purpose, support for this being provided by the personal tutor system.

A wide range of assessment strategies are used, designed to demonstrate that students have achieved the learning outcomes detailed in section C and include:

- unseen examinations;
- open book examinations;
- multiple choice tests;
- short answer tests;
- practical reports;
- problem exercises;
- data interpretation exercises;
- group and individual presentations;
- essays;
- reports
- literature surveys;
- experimental designs;
- major project reports.

Students are encouraged to compile a personal development portfolio over their course of study, this being one of the key points of discussion with their personal tutor.

Many of the skills developed will be assessed within these various types of assessment (for example, the use of ICT is a normal expectation in the preparation of written work, reports etc; data handling is inherent in many of the activities, assessments will be carried out by groups and individuals and greater self-reliance will be needed from level to level).

The assessments are a mixture of course work and end of module “summative” assessments. Each module carries a final grade which is made up of the marks for course work and end of module assessments. The contribution of the individual assessments to the module total and the requirements to pass each module will be detailed in the programme handbook/module guide on Canvas.

At level 6 the synoptic nature of the Current Concepts in Biomolecular Sciences serves to provide the basis for the drawing together of themes from a number of relevant areas of the life sciences that have been considered over the duration of the course. Furthermore,

completion of the final year project serves as the capstone to a number of modules that have acted to integrate the essential elements necessary to conduct a research project.

E. Support for Students and their Learning

Students are supported by:
A Module Leader for each module
A Course Leader to help students understand the programme structure
Personal Tutors to provide academic and personal support (each student will be assigned a personal tutor at level 4 who will remain as their tutor over the time period taken to complete the degree – there is a minimum contact expectation over each academic year as detailed in the personal tutor scheme specification): students will meet with personal tutors periodically to discuss their personal and academic development, with particular emphasis on planning for careers within the Pharmacology field.

The aims of the personal tutor scheme are:

- To build rapport between staff and students and contribute to personalising students' experience at Kingston
- To provide appropriate academic advice and guidance to students throughout their time at Kingston by monitoring their progress and helping to identify individual needs
- To foster a close and engaged academic relationship with students and advise and refer students to other University services as appropriate
- To help to develop students' ability to be self-reliant and self-reflective and their ability to use feedback to best advantage

A placement tutor to give general advice on placements
Technical support to advise students on IT and the use of software
A designated programme administrator
An induction week at the beginning of each new academic session
Staff Student Consultative Committee
Canvas – a versatile on-line interactive intranet and learning environment
A substantial Study Skills Centre that provides academic skills support
Student support facilities and staff, including student support officers, that provide advice on issues such as finance, regulations, legal matters, accommodation, international student support.
Disabled student support
Union of Kingston Students
Careers and Employability Service

F. Ensuring and Enhancing the Quality of the Course

The University has several methods for evaluating and improving the quality and standards of its provision. These include:

- External examiners
- Boards of study with student representation
- Annual review and development
- Periodic review undertaken at the subject level
- Student evaluation
- Moderation policies

G. Employability and work-based learning

This course has been designed to address the core curriculum requirements of the British Pharmacological Society (BPS) and the accreditation criteria of the Royal Society of Biology (RSB), of which students can become student members, and prepares graduates for employment in a number of settings. These include a variety of roles within the pharmaceutical industry, including drug discovery and development, clinical trials, toxicity and safety testing, pharmacovigilance, regulatory affairs and medical sales and marketing. These opportunities exist within both large pharmaceutical companies and small contract research organisations. Suitably qualified graduates can use their degree to enter medicine, dentistry or veterinary science. Many graduates decide to undertake a higher degree, leading to a research career either in academia or industry. Graduates also use their degree to find employment in teaching and medical writing positions. Students can also become student members of the BPS.

This course prepares graduates for employment through the provision of both subject specific material and embedded employability skills in a number of modules. These employability skills are developed throughout the course, both through activities that are embedded within the syllabus and from services offered by the University's Careers and Employability Service. From the first year, students are encouraged to reflect on and identify what they have learned, whether academically or in terms of transferable skills, and how these may be relevant to employment. They are also encouraged to explore the job market and possible career paths, and to consider attributes that employers look for in graduates above and beyond essential academic skills, such as initiative, the ability to work in teams, manage time and to prioritise, the desire to learn and the motivation to improve performance, and appropriate communication and presentation skills in all their forms. In this context, students are also encouraged to take advantage of opportunities within and outside of the university to develop such skills through volunteering, work placements and study abroad. These skills are developed and enhanced during the second and third years; in particular, the importance of creative thinking and problem-solving, networking, negotiating, inquisitiveness and giving and receiving feedback. Students are also encouraged to develop clearer ideas about career options and are offered assistance and guidance in the preparation of CVs and for job applications and interviews. The final year also develops an understanding of leadership skills as well as an appreciation of commercial and business awareness, among other essential employment skills.

In respect of studying abroad, this provides a unique opportunity for students to broaden their experience and develop valuable transferable skills. Most importantly, they will gain a global perspective, which is highly valued by employers in today's increasingly international job market.
Spending a period abroad allows students to:

- Enhance their employability through development of transferable skills
- Gain a deeper understanding of their academic subject
- Develop their language skills
- Boost their confidence
- Raise their cultural awareness
- Begin to build global networks

In respect of sandwich placements, students can also enhance their employability by gaining a deeper understanding of the application of pharmacology within the workplace and by the development of a number of key transferable skills.

Work-based learning, including sandwich courses and higher or degree apprenticeships

Work placements are actively encouraged – although it is the responsibility of individual students to source and secure such placements. This allows students to reflect upon their own personal experience of working in an applied setting, to focus on aspects of this experience that they can clearly relate to theoretical concepts and to evaluate the relationship between theory and practice. Support is provided by a dedicated sandwich placement tutor, advisor and careers office employability advisors.

H. Other sources of information that you may wish to consult

The British Pharmacological Society
http://www.bps.ac.uk

Royal Society of Biology
https://www.rsb.org.uk/education/accreditation/allprogrammes

Association of the British Pharmaceutical Industry
http://www.abpi.org.uk/

QAA Biosciences Benchmarks
https://www.qaa.ac.uk/docs/qaa/subject-benchmark-statements/subject-benchmark-statement-biosciences.pdf

Kingston University website
https://www.kingston.ac.uk/undergraduate-course/pharmacology/

I. Development of Course Learning Outcomes in Modules

This table maps where course learning outcomes are **summatively** assessed across the modules for this course. It provides an aid to academic staff in understanding how individual modules contribute to the course aims, a means to help students monitor their own learning, personal and professional development as the course progresses and a checklist for quality assurance purposes.

Module Code		Level 4				Level 5						Level 6				
		LS4004	LS4003	LS4002	LS4001	LS5022	LS5010	LS5021	LS5027	LS5001	LS5000	LS6014	LS6003	LS6002	LS6004	LS6001
Knowledge & Understanding	A4															
	A3	S	S	S						S		S	S	S		S
	A1						S		S			S	S	S		

	A2		S						S			S		S		S
Intellectual Skills	B7											S		S		
	B6											S				
	B5	S	S				S		S	S		S	S			S
	B2		S				S			S		S		S		S
	B3											S				S
	B1		S	S			S		S	S		S	S	S		S
	B4			S			S		S	S		S	S			S
Practical Skills	C4		S				S		S	S		S		S		
	C3						S		S			S				
	C2											S				
	C1		S	S			S		S			S				

Students will be provided with formative assessment opportunities throughout the course to practise and develop their proficiency in the range of assessment methods utilised.