



Course Information Form

This Course Information Form provides the definitive record of the designated course

Section A: General Course Information

Course Title	MSc Pharmacology with Data Analytics
Final Award	MSc
Route Code	MSPDAAAF
Intermediate Qualification(s)	
FHEQ Level	7
Location of Delivery	University Square Campus, Luton
Mode(s) and length of study	Full time over 24 months
Standard intake points (months)	October, February
External Reference Points as applicable including Subject Benchmark	<p>FHEQ (2014)</p> <p>QAA 2020 Masters Degree Characteristics</p> <p>SEEC Credit Level Descriptors (2016)</p> <p>Aspects of QAA subject benchmarking for Pharmacy Masters (2002) and Medicine Masters (2002).</p>

Professional, Statutory or Regulatory Body (PSRB) accreditation or endorsement	
HECoS code(s)	100250, 100755
UCAS Course Code	N/A

Course Aims	<p>The aim of the course is to provide you with a fundamental understanding of drug research and development and treatment of relevant human diseases, and practical experience of new technologies including Data Analytics applied to relevant areas of pharmacology at an advanced level, and to provide opportunities for specialisation through a choice of project in one of the four following main themes – (i) cell and molecular biology, (ii) molecular pharmacology, (iii) drug discovery and development, (iv) clinical pharmacology and therapeutics. These will provide graduates with the expertise for subsequent employment in organisations undertaking these techniques and/or research.</p> <p>The Data Analytics Units are designed for non-computing graduates who are looking to apply information technology to their current career, or who are looking to change their career direction. These Units covers a wide range of topics including programming, databases, security, project management and computer networking. During the course you will learn the underpinning theory of these topics, and you will apply this theory in practical scenarios.</p>												
	<p>Upon successful completion of your course you should meet the appropriate learning outcomes for your award shown in the table below</p> <table border="1"> <thead> <tr> <th></th> <th>Outcome</th> <th>Award</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Demonstrate a systematic understanding and a critical awareness of new technologies in cell and molecular biology;</td> <td>MSc Pharmacology with Data Analytics</td> </tr> <tr> <td>2</td> <td>Show in-depth knowledge and understanding of the pharmacology of receptors especially with respect to emerging drug targets and putative mechanism of drug action;</td> <td>MSc Pharmacology with Data Analytics</td> </tr> <tr> <td>3</td> <td>Demonstrate significant knowledge and understanding of the principles of drug design, pre-clinical evaluation, clinical trials, regulatory affairs and application of new technologies in the drug discovery and development process;</td> <td>MSc Pharmacology with Data Analytics</td> </tr> </tbody> </table>			Outcome	Award	1	Demonstrate a systematic understanding and a critical awareness of new technologies in cell and molecular biology;	MSc Pharmacology with Data Analytics	2	Show in-depth knowledge and understanding of the pharmacology of receptors especially with respect to emerging drug targets and putative mechanism of drug action;	MSc Pharmacology with Data Analytics	3	Demonstrate significant knowledge and understanding of the principles of drug design, pre-clinical evaluation, clinical trials, regulatory affairs and application of new technologies in the drug discovery and development process;
	Outcome	Award											
1	Demonstrate a systematic understanding and a critical awareness of new technologies in cell and molecular biology;	MSc Pharmacology with Data Analytics											
2	Show in-depth knowledge and understanding of the pharmacology of receptors especially with respect to emerging drug targets and putative mechanism of drug action;	MSc Pharmacology with Data Analytics											
3	Demonstrate significant knowledge and understanding of the principles of drug design, pre-clinical evaluation, clinical trials, regulatory affairs and application of new technologies in the drug discovery and development process;	MSc Pharmacology with Data Analytics											

Course Learning Outcomes	4	Show in-depth knowledge and understanding of the therapeutic concepts and general principles relating to, causes, aetiology, epidemiology, and diagnosis of human diseases in current clinical practice, as well as drug adverse effects;	MSc Pharmacology with Data Analytics
	5	Use confident and accurate language to present work both orally and in written form including use of graphs and images to clearly illustrate complex points;	MSc Pharmacology with Data Analytics
	6	Synthesise and effectively use information from a variety of relevant sources and to independently and critically evaluate current research and advanced scholarship in the relevant subject areas;	MSc Pharmacology with Data Analytics
	7	Demonstrate originality in the application of knowledge, the development of practical skills and the ability to devise an experimental plan as an independent investigator. Students must demonstrate how established techniques and approaches can be applied to a new problem or a new method devised.	MSc Pharmacology with Data Analytics
	8	Apply transferable skills (initiative, personal responsibility, effective communications, critical thinking and decision-making) that include a clear demonstration of independent learning commensurate with that expected from postgraduate students. This includes a detailed understanding of the social, moral and ethical considerations associated with any proposed research activity.	MSc Pharmacology with Data Analytics
	9	Demonstrate a deep and systematic knowledge of the key principles, tools and techniques used in the field of Applied Computing and Information Technology including current and emerging theoretical and methodological approaches.	MSc Pharmacology with Data Analytics
	10	Use an appropriate form of advanced problem solving along with creativity and innovation in order to develop an appropriate solution to complex real-world problems in unfamiliar contexts that require the application of computing and information technology.	MSc Pharmacology with Data Analytics
	11	Acquire strong technical expertise and a critical awareness of security implications, methodologies and frameworks applied to modern information security management systems to safeguard organisations and their assets.	MSc Pharmacology with Data Analytics

	12	Flexibly and creatively apply knowledge to further improve and modify existing incident response programmes and demonstrate the ability to critique national and international standards and best practices.	MSc Pharmacology with Data Analytics
	13	Demonstrate a systematic understanding of career planning including factors of organisational and personal collaboration that impact on career trajectories, and be able to conduct a self-evaluation of oneself against relevant skills and organisational competences to establish a personal development plan that delivers personal and organisational performance impact .	MSc Pharmacology with Data Analytics
	14	Demonstrate knowledge and understanding of what goes into a research proposal, the rudiments of good research design at masters level and be able to produce work of a standard consistent with research publications in your field of study, communicating conclusions clearly to a specialist and non-specialist audience.	MSc Pharmacology with Data Analytics
	<p>In line with the aspects of QAA Benchmarking statements for Pharmacy Masters (2002) and Medicine Masters (2002), motivation and challenge of the student is through a skilled and balanced selection of teaching and learning techniques, including:</p> <ul style="list-style-type: none"> lectures; practical classes; workshops; seminars; tutorials; other forms of interactive small-group teaching; IT-based teaching and learning; independent assignment-based learning; auditable, directed private study; team-working; and project work. <p>Delivery is in line with the School's blended learning strategy with regards e-, or network-, based learning which generally makes use of the University's virtual learning environment (VLE). In line with University policy, all units in the School have a VLE site containing unit and assessment briefing documents and details; announcements/notices; lecture notes; PowerPoint presentations.</p> <p>Students will be provided with training in presentation skills throughout the course during seminars and workshops. This transferable skills training will equip them ahead of their case presentation and description of research progress.</p>		

Teaching, learning and assessment strategies

As appropriate the VLE site for a unit will also contain other support material to aid understanding of the course material. This allows it to act as a “gateway” to other web-based resources. Links are provided to websites containing information such as; similar lecture material; pictures or movie (avi, etc.); clips showing a biological principle in drug action, live or in a model; self-learning/assessment sites on the internet; journal articles or technical sites. These sorts of web-based material along with interactive websites that provide virtual-practical, where students can undertake practical or modelling on their own and view the results, are all methods of supporting independent and blended learning to improve the students’ performance.

The course supports meaningful learning through a curriculum that is intellectually challenging and of practical relevance to those seeking a future career in areas of Pharmacology and Biotechnology. The course is designed to encourage a reflective, student-centred approach to learning. The course incorporates some of the latest developments in the subject of molecular biology, clinical pharmacology and drug development with students being referred to the latest books and key references in research journals as sources of information. As such the course will be challenging in introducing new ideas and concepts.

Students will be active in their learning through interaction in lectures, seminars, tutorials, workshops, participating in laboratory practical and in preparing the assessments. Students will be encouraged to be reflective in their learning by seeking to integrate the academic content of the different units on the course and reflecting on the implications of pharmacology on society. Students are encouraged to interact with the research active teaching team. Laboratory sessions are also good environments for student communication within the cohort making the learning process a collaborative effort.

Computing and Information Technology is everywhere nowadays. Even before the course you may have been exposed to various information technologies. Our teaching uses this everyday experience as a starting point to embark on systematic analysis and interpretation of these technologies using the right tools. This is done in a variety of ways across all teaching units. Most of the teaching is based on lectures complemented by practical sessions that serve to apply and further develop the contents of the lecture within practical exercise.

Assessment

The assessment philosophy of the MSc Pharmacology with Data Analytics Award conforms to the recommendations of the aspects of relevant QAA Benchmarks and Masters level descriptors. The methods used for the assessment of students’ achievements will correspond with the knowledge, abilities and skills that are to be developed through degree programme. Both formative and summative modes of assessment will be used. Summative assessments will be undertaken in all units of the course to check that you have met (or are working towards meeting) the threshold standards expected of all students. Also, there will be a formative assessment in the beginning of semesters 1 and 2 to help you understand the academic writing and online submission process along with the assessment marking criterion.

Evidence on which assessment of students’ achievement is based will include:

formal written examinations;
summative practical assessments;
laboratory and other written Academics;

problem-solving exercises;
oral presentations;
individual planning, conduct and Academicing of project work; and
essay assignments.

Evidence on which assessment of students' achievement is based may include:

literature surveys and evaluations;
collaborative practicals;
individual research project
preparation and displays of 'posters' Academicing project work;
personal portfolios of learning achieved;
computer-based assessments; and
self and peer assessment.

The course assessment strategy is compliant with the University of Bedfordshire's Quality Assurance Regulations.

The commitment to practical skills and the ability to communicate and interpret data through scientific Developing Independent Research is emphasised at all units of the programme. As such, practical (laboratory) activities form a significant proportion of students assessment. Practical work will be assessed through written practical activities, poster oral presentations and reflective laboratory diaries.

Assessment throughout the units, most notably in the research project, will call upon abstract writing and journal review skills to promote critical thinking and integration of knowledge across the course units. The importance of oral communication skills is also acknowledged, as some of the units require students' to undertake oral presentations as part of the unit assessments.

Throughout the course, formative feedback will be provided in support of various tasks that include practical work in all four units, mini-projects, literature reviews, case studies and presentation prior to final summative assessments.

Students' capability in carrying out research will be assessed through a research proposal, research project activities and presentations.

Group work, including laboratory practical sessions, will help students to develop transferable skills such as taking initiative, communication, team working and decision making. Ability in oral communication will be assessed through presentations, including a poster presentation.

<p>Learning support</p>	<p>Students are actively supported through their assessments both directly in subject specific areas by tutors, and by working with the Study Hub to provide targeted workshops to support academic skills development. The focal areas include an introduction to academic integrity, developing good academic practice, scientific writing, use of statistics, and communication of science to diverse audiences including presentation skills also aligned to assessment requirements.</p> <p>Throughout course delivery workshops and tutorials are used to support the development of academic skills, alongside the learning and the assessment process. All in-course assessments are supported by timetabled, interactive tutorial sessions with formative assessment tasks, as appropriate. In addition, assessments that are based around practical work will involve a briefing before, and a session after the laboratory work to explain further the expectations of the assessment and support specific tasks such as data analysis. Examinations are supported by timetabled revision sessions and by workshop sessions covering examples of past examinations and the expectations of examination questions at each level.</p> <p>To assist our learners, assignment briefs a uniform set of information and a consistent set of assessment criteria across the course. At the start of each level, students are given introductory session(s) that set out the expectations for each year. For entry points, several sessions are used to provide guidance and support to students joining the University. These provide details of support for the development of academic skills and learning from the School, the Study Hub and initiatives such as peer-assisted learning (PASS scheme). For students progressing between levels, introductory sessions are also provided to ensure the students are aware of the change in expectations of learning and assessment. This will flag areas such as expectations for increased self-directed learning, critical thinking and analysis that are expected as students go through the learning process.</p> <p>A key aim for the school is the integration of transferable skills within learning and assessment to enhance employability. Our courses build awareness of business applications of knowledge with assessments that develop practical ideas and employability. This is supported by the University's Careers and Employability service throughout the course.</p> <p>Students who commit academic offences due to a lack of clear understanding of academic integrity are further supported by being invited to attend academic practice guidance (APG) meetings with course staff to discuss the issues, and to refer them to the university academic integrity resource (AIR) to encourage them to develop good academic skills.</p> <p>As highlighted, alongside the direct support by the School, the University provides a comprehensive student support service includes: Student Information Desk, a one-stop shop for any initial enquiries; Student Support team advising and supporting those with physical or learning needs or more general student well-being; Study Hub team providing academic skills guidance; Personal Academic Tutoring system; a student managed peer-assisted learning scheme; and the University's Careers and Employability providing support on the transition to the workplace.</p>
	<p>https://www.beds.ac.uk/entryrequirements</p>

Admissions Criteria	Approved Variations and Additions to Standard Admission N/A
Assessment Regulations	https://www.beds.ac.uk/about-us/our-university/academic-information Note: Be aware that our regulations change every year Approved Variations and Additions to Standard Assessment Regulations' N/A

Section B: Course Structure

The Units which make up the course are listed below. Each unit contributes to the achievement of the course learning outcomes either through teaching (T), general development of skills and knowledge (D) or in your assessments (A).

Unit	Unit Name	Level	Credits	Core or Option	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
BHS001-6	Cell and Molecular Biology	7	30	Core	TA 12				TA2	TA 2	TA 2	TA 2							
BHS005-6	Drug Discovery and Development	7	30	Core			T1A 12		TA2	TA 2									
BHS006-6	Molecular Pharmacology	7	30	Core		T1A 12			TA2	TA 2									
BHS007-6	Clinical Pharmacology and Therapeutics	7	30	Core				TA1 2	TA2	TA 2									
BHS010-6	Pharmacology Research Project	7	60	Core					DA2	DA 2	DA 1	DA 2							
BSS074-6	Personal Professional Development (10 credits)	7		Core													TA1		
CIS108-6	Data Modelling, Management and Governance	7	30	Core									TA 2	TA1					
CIS109-6	Computer Networks and Security	7	30	Core															
CIS132-6	Developing Independent Research (10 credits)	7		Core														TA1	

Unit	Unit Name	Level	Credits	Core or Option	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
BHS001-6	Cell and Molecular Biology	7	30	Core	TA 12				TA2	TA 2	TA 2	TA 2							
BHS005-6	Drug Discovery and Development	7	30	Core			T1A 12		TA2	TA 2									
BHS006-6	Molecular Pharmacology	7	30	Core		TA1 2			TA2	TA 2									
BHS007-6	Clinical Pharmacology and Therapeutics	7	30	Core				TA1 2	TA2	TA 2									

BHS010-6	Pharmacology Research Project	7	60	Core					DA2	DA 2	DA 1	DA 2						
BSS074-6	Personal Professional Development (10 credits)	7		Core													TA1	
CIS108-6	Data Modelling, Management and Governance	7	30	Core									TA 2	TA1				
CIS109-6	Computer Networks and Security	7	30	Core														
CIS132-6	Developing Independent Research (10 credits)	7		Core													TA1	

Section C: Assessment Plan

The course is assessed as follows :

MSPDAAAF- Pharmacology with Data Analytics-February

Unit Code	Level	Period	Core/Option	Ass 1 Type code	Ass 1 Submit wk	Ass 2 Type code	Ass 2 Submit wk	Ass 3 Type code	Ass 3 Submit wk	Ass 4 Type code	Ass 4 Submit wk
BHS005-6	7	AY1-SEM2	Core	CW-PO	9	EX	15				
BHS007-6	7	AY1-SEM2	Core	WR-PO	6	EX	15				
CIS132-6	7	AY2-BLK3	Core	CW-RW	7						
CIS109-6	7	AY2-BLK4	Core	CW-PO	6						
BSS074-6	7	AY2-BLK5	Core	CW-EPO	8						
BHS001-6	7	AY2-SEM1	Core	WR-LAB	6	WR-I	12				
BHS006-6	7	AY2-SEM1	Core	WR-LAB	9	EX	15				
CIS108-6	7	AY3-BLK6	Core	PJ-ART	5	EX	7				
BHS010-6	7	AY3-SEM1	Core	PJ-PRO	14	CW-JO	15	PR-OR	15		

MSPDAAAF- Pharmacology with Data Analytics-October

Unit Code	Level	Period	Core/Option	Ass 1 Type code	Ass 1 Submit wk	Ass 2 Type code	Ass 2 Submit wk	Ass 3 Type code	Ass 3 Submit wk	Ass 4 Type code	Ass 4 Submit wk
BHS001-6	7	AY1-SEM1	Core	WR-LAB	6	WR-I	12				

BHS006-6	7	AY1-SEM1	Core	WR-LAB	9	EX	15				
BHS005-6	7	AY1-SEM2	Core	CW-PO	9	EX	15				
BHS007-6	7	AY1-SEM2	Core	WR-PO	6	EX	15				
BSS074-6	7	AY2-BLK1	Core	CW-EPO	8						
CIS108-6	7	AY2-BLK2	Core	PJ-ART	5	EX	7				
CIS132-6	7	AY2-BLK3	Core	CW-RW	7						
CIS109-6	7	AY2-BLK4	Core	CW-PO	6						
BHS010-6	7	AY2-SEM3	Core	PJ-PRO	14	CW-JO	15	PR-ORAL	15		

Glossary of Terms for Assessment Type Codes

CW-EPO	Coursework - e-Portfolio
CW-JO	Coursework - Journal
CW-PO	Coursework - Portfolio
CW-RW	Coursework - Reflective Writing
EX	Exam (Invigilated)
PJ-ART	Coursework - Artefact
PJ-PRO	Coursework - Project Report
PR-OR	Practical - Oral Presentation
WR-I	Coursework - Individual Report
WR-LAB	Coursework - Laboratory Report
WR-PO	Coursework - Poster

Administrative Information	
Faculty	Creative Arts Technologies and Science
School	School of Life Sciences
Head of School/Department	Prof Prasad S. Sreenivasaprasad
Course Coordinator	Prashanth Bajpe