

Module Specification

Module Title	Research Skills for Pharmacologists			Module Code	BMD175	
Credit Value	15	Level	4	Mode of Delivery	On Campus	Semester A
Module Organiser	Dr James Whiteford					

Pre-requisite modules	Co-requisite modules	Overlapping modules

1) Content Description

Provide a description of the module, as it will appear in the Module Directory and on the Student Information

System (approx. 70-80 words).

This module will cover some basic laboratory skills including experimental design and hands-on experience of a range of laboratory practical (such as quantification of drugs in biological fluids) techniques enabling them to develop skills of working safely and accurately in the laboratory. This module will also provide a basic knowledge of the appropriate statistical ideas and methods to use in the collection, presentation and analysis of pharmacological data, and the use of statistical software. Students will also learn about informatics (finding the correct information online), bioinformatics (how computers can be used to analyse genomes, genes and gene products), general scientific reading and writing skills (including how to avoid plagiarism), ethics and drug trial design as well as presentation skills in a scientific context.

2) Module Aims

Specify the aims of the module, i.e. the broad educational purposes for offering this module.

This module will provide students with a wide range of laboratory practical skills, computer skills and general scientific reading, writing and presentation skills.

Students will also be trained and have practice in solving numerical problems relevant to pharmacology, thereby enhancing students' general problem solving skills.

To provide an intuitive understanding of basic concepts in Pharmacology so that students would have some meaning as to what is being calculated and for what purpose when using statistical software packages.

3) Learning Outcomes

Identify the learning outcomes for this module, i.e. knowledge, skills and attributes to be developed through completion of this module. Outcomes should be referenced to the relevant [QAA benchmark statements](#) and the [Framework for Higher Education Qualifications in England, Wales and Northern Ireland \(2008\)](#). The [SEEC Credit Level Descriptors for Further and Higher Education 2003](#) and [Queen Mary Statement of Graduate Attributes](#) should also be used as a guiding framework for curriculum design.

Academic Content:	
A1	Acquire a range of library skills: finding information through online databases
A2	Acquire knowledge in experimental design and the application of a range of statistical methods

A3	Gain knowledge in basic numerical computations, scales and conversion factors, exponents and graph drawing
A4	Explain the underlying principles of a number of essential practical techniques used to investigate pharmacology
A5	Acquire a range of practical skills essential for studying pharmacology including some molecular, cell biological and biochemical techniques
A6	Acquire effective presentation and scientific writing skills including essay writing, peer review and how to cite references

Disciplinary skills - able to:	
B1	Conduct laboratory experiments safely with care and precision
B2	Write scientific reports and present scientific data in an accurate and clear manner
B3	Appreciate the importance of experimental work and carry out a number of essential practical experiments in pharmacology together with techniques drawn from other related disciplines
B4	be able to interpret and explain scientific findings to a lay audience
B5	Demonstrate the skills of logical and critical evaluation of scientific data, including the methods by which the data were obtained, the statistical analysis used and the inferences and conclusions drawn

Attributes:	
C1	Have the intellectual curiosity to learn continuously from diverse sources of information

C2	Acquire and apply knowledge in a rigorous way
C3	Make judgements based on evidence
C4	Effective time management and independent learning
C5	Acquire new learning in a range of ways, both individually and collaboratively
C6	Critically evaluate the reliability of different sources of information

QMUL Model Learning Outcomes – Level 4

D1	Identify and discuss what their own role in their programme and/or subject discipline might mean to them for future educational endeavors
D2	Identify and demonstrate the perspectives or problems solving techniques of different disciplines

4) Reading List

Provide an indicative reading list for the module. This should include key texts and/or journals but **should not** be an exhaustive list of materials.

Weyers et al (2012), 5th Edition, Practical skills in Biology, Pearson
Jones et al (2012), Practical skills in Biology

Teaching and Learning Profile

Provide details of the method of delivery (lectures, seminars, fieldwork, practical classes, etc.) used to enable the achievement of learning outcomes and an indicative number of hours for each activity to give an overall picture of the workload a student taking the module would be expected to undertake. This information will form the Key Information Set for each undergraduate programme and will be used to populate the KIS widget found on the QMUL programme information pages. More information can be found [online](#) about KIS. You may also wish to refer to the [QAA guidance on contact hours](#) when completing this section.

Activity Type	KIS Category	Time Spent (in hours)
Lecture	Scheduled	11
Tutorial	Scheduled	8
Seminar	Scheduled	8
Practical Classes and workshops	Scheduled	6
Guided independent study	Independent	117
Total		150

Specify the total module notional study hours. This should be a total of the hours given for each activity. The notional study hours for each academic credit point is 10. A 15 credit point module therefore represents 150 notional study hours.

Activity Type	Total Time Spent (in hours)	Percentage of Time Spent
Scheduled learning and teaching	33	22
Placement		
Independent Study	117	78
Total	150	100

Use the information provided in the box above to specify the total time spent and the percentage time spent in each category of teaching and learning activity.

Assessment Profile

Provide details of the assessment methods used to assess the achievement of learning outcomes.

Description of Assessment	Assessment Type	KIS Category	Duration / Length	Percentage Weighting	Final element of assessment?	Qualifying Mark
Examination	Written Exam	Written	1.5 h	50%	Yes	
Coursework	Report	Coursework	1000 words	25%	No	
Oral presentation	Oral assessment and presentation	Practical	15 min	25%	No	

Qualifying mark: A specified minimum mark that must be obtained in one or more elements of assessment in order to pass a module. **This is in addition to, and distinct from, the requirement to achieve a pass in the module mark to pass the module.**

Reassessment

Provide details of the reassessment methods used, specifying whether reassessment is either standard reassessment or synoptic reassessment.

Standard Reassessment Synoptic Reassessment

Synoptic reassessment details (if you have indicated synoptic reassessment above, please give details)		
Brief Description of Assessment	Assessment Type	Duration / Length of Examination / Coursework
Synoptic written examination of module content	Written Exam	1.5 hours