Section 2 - Module Specification

Module Title	Receptors and Mechanisms of Cell Signalling	Module Code	BMD373

Credit Value	15	Level	6	Mode of Delivery	On Campus	Semester	Semester A

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 consider the general properties of receptors, signal transduction pathway, and the regulation of their activity. Emphasis will be given to G-protein coupled receptors, receptor tyrosine kinases and nuclear receptors.

Introductory lectures will be followed by interactive sessions in specialised areas of the subject given by experts in their field. In addition to formal lectures, the course will provide tutorials and seminars with opportunities to critically-evaluate research papers and reinforce the lectures.

2) Module Aims

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

Critical understanding of receptors in the context of their molecular structures, their roles in cell physiology, life cycle, signal transduction mechanisms, and their exploitation as targets for therapeutic drugs.

Review the current knowledge on the classification of membrane receptors in mammalian cells with particular emphasis on receptors as therapeutic targets for the treatment of common human diseases.

Opportunity to gain practical experience of methods used to study G protein coupled receptors

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.

Add Learning Outcome

		Academic Content:
X	A 1	Critique of the diverse classes of receptors and how drugs interact with and regulate membrane receptors
X	A 2	Application of current methods for experimental study of receptors
X	A 3	Analysis of how abnormal receptor function can lead to clinical consequences
X	A 4	Critique of post-translational modifications of receptors, receptor expression, dimerization, accessory proteins, trafficking to the cell surface, ligand binding, cell signaling, receptor internalization, degradation and recycling

Add Learning Outcome

		Disciplinary Skills - able to:
X	B 1	Critically evaluate published research studies
X	B 2	Apply knowledge of receptor mechanisms to interpret the effects of drug treatment
X	B 3	Write scientific reports and present scientific data

Add Learning Outcome

		Attributes:
X	C 1	Have the intellectual curiosity to learn continuously from diverse sources of information
X	C 2	Be able to explain complex scientific concepts clearly and logically
X	C 3	Make judgements based on evidence
X	C 4	Effective time management and independent learning

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.

* Textbook of receptor pharmacology, 3rd Edition, John C. Foreman, Torben Johansen, Alasdair J. Gibb,
* G protein coupled receptors, from structure to function, Jesus Giraldo, Jean-Philippe Pin, Royal Society of Chemistry, 2011
* Signal transduction, 2nd Edition, Bastien D. Gomperts (Author), Ijsbrand M. Kramer (Author), Peter E.R. Tatham

British Journal of Clinical Pharmacology
New England Journal of Medicine

Lancet
Current Opinions in Pharmacology

5) 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.

Add Row | Delete Row

Activity Type	KIS Category	Time Spent (in hours)
Lecture	Scheduled	20
Tutorial	Scheduled	4
Seminar	Scheduled	8
Guided independent study	Independent	118
	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	32	21
Placement		
Independent Study	118	79
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.

6) Assessment Profile

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

Add Row | Delete Row

Description of Assessment	Assessment Type	KIS Category	Duration / Length	% Weighting	Final element of assessment?	Qualifying Mark
Examination	Written Exam	Written	3 h	80%	Yes	

Coursework	In-course MCQ test	Coursework		10%	No	
Coursework	Integrative assignment	Coursework		10%	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
Examination	Examination	3h

Section 3 - Alternative Assessment Arrangements for Associate Students

This section must only be completed if the module will be made available to associate students in Semester A and where the credit value of the "associate" version is the same as for the main version, and the main version is assessed by exam in May which is not available to the associate students. All other aspects of the module specification remain the same as indicated in Section 2 above. To add alternative assessment arrangements please click 'Add Alternative Assessment'.

Add Alternative Assessment

Section 4a - Half Module for Associate Students (for a half module to be taught in Semester A)

This section must be completed if the proposed module will take place over 2 semesters but will be made available to single-semester associate students in a half-credit format in Semester A. Modules worth less than 30 credits taken over 2 semesters may not be made available in a half-credit format. To add details for the half module please click 'Add Half Module (Semester A)'.

Add Half Module (Semester A)

Section 4b - Half Module for Associate Students (for a half module to be taught in Semester B)

This section must be completed if the proposed module will take place over 2 semesters but will be made available to single-semester associate students in a half-credit format in Semester B. Modules worth less than 30 credits taken over 2 semesters may not be made available in a half-credit format. To add details for the half module please click 'Add Half Module (Semester B)'.

Add Half Module (Semester B)