**SECTION 1: MODULE SPECIFICATIONS**

1. Title of the module

**Receptor Mechanisms and Molecular Pharmacology** **(PHAR1047)**

1. School or partner institution which will be responsible for management of the module

**Medway School of Pharmacy**

1. Start date of the module

**October 2016**

1. The number of students expected to take the module

**30 students**

1. Modules to be withdrawn on the introduction of this proposed module and consultation with other relevant Schools and Faculties regarding the withdrawal

**None**

1. The level of the module (e.g. Certificate [C], Intermediate [I], Honours [H] or Postgraduate [M])

**H**

1. The number of credits and the ECTS value which the module represents

**15 credits (7.5)**

1. Which term(s) the module is to be taught in (or other teaching pattern)

**Term 1**

1. Prerequisite and co-requisite modules

**Pharmacokinetics**

**Cardiovascular Respiratory and Renal Pharmacology**

**Immunopharmacology and Microbiology**

**Endocrine and Gastrointestinal Pharmacology**

**Research Methods in Pharmacology**

**Neuropharmacology**

1. The programmes of study to which the module contributes

**BSc (Hons) in Physiology and Pharmacology**

1. The intended subject specific learning outcomes

On successful completion of this module, students will have demonstrated:

**11.1 Have a good understanding of the classical approaches to drug-receptor interactions (POA1, POA2, POA3, POA4, POA5, POB2, POB3, POB5, POC1, POC2, POC3, POC4, POC5, POD1, POD3).**

**11.2 Understand the molecular structure of 7TM G-protein coupled receptors (POA1, POA2, POA3, POA4, POA5, POB2, POB3, POB5, POC1, POC2, POC3, POC4, POC5, POD1, POD3).**

**11.3 Understand the structure of ligand gated-ion channel receptors (POA1, POA2, POA3, POA4, POA5, POB2, POB3, POB5, POC1, POC2, POC3, POC4, POC5, POD1, POD3).**

**11.4 Understand the structure of receptor tyrosine kinases (POA1, POA2, POA3, POA4, POA5, POB2, POB3, POB5, POC1, POC2, POC3, POC4, POC5, POD1, POD3).**

**11.5 Understand the types of radioligand binding experiments, as well as the practical aspects of radioligand binding experiments and how to analyse binding data (POA1, POA2, POA3, POA4, POA5, POB2, POB3, POB5, POC1, POC2, POC3, POC4, POC5, POD1, POD3).**

**11.6 Understand the use of techniques such as homology modelling, site-directed mutagenesis, x-ray crystallography, cryo-electron microscopy, measurement of the rate of GTPγS binding and patch-clamp electrophysiology to understand receptor structure and function (POA1, POA2, POA3, POA4, POA5, POB2, POB3, POB5, POC1, POC2, POC3, POC4, POC5, POD1, POD3, POD4).**

1. The intended generic learning outcomes

**12.1 The development of a critical awareness of current laboratory techniques (POB1-5, POC1-6)**

**12.2 An ability to analyse, evaluate and correctly interpret data (POB1-5)**

**12.3 An ability to present and communicate data (POD2, POD3, POD4)**

**12.4 An ability to obtain and use information from a variety of sources as part of self-directed learning (POD1-6)**

**12.5 Time-management and organisational skills within the context of self-directed learning (POD1-6)**

1. A synopsis of the curriculum

* **Classical approaches to studying drug-receptor interaction**
* **G-protein coupled receptors**
* **Ligand-gated ion channels**
* **Receptor tyrosine kinases**
* **Ligand-binding studies**
* **Homology modelling and site directed mutagenesis**
* **X-ray crystallography and cryo-electron microscopy**
* **GTPγS binding and patch-clamp electrophysiology**

1. Indicative Reading List

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ISBN number** | **Author** | **Date** | **Title** | **Publisher** |
| **1420052543** | **John C. Foreman (Editor), Torben Johansen (Editor), Alasdair J. Gibb (Editor)** | **15 Sep 2010** | **Textbook of Receptor Pharmacology, Third Edition** | **CRC press** |

1. Learning and Teaching Methods, including the nature and number of contact hours and the total study hours which will be expected of students, and how these relate to achievement of the intended module learning outcomes

**Summary of Learning and Teaching Activities**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Lecture** | **Practical** | **MSCL/ CAL** | **Seminars** | **Private Study** | **Formal assessment** | **Total hours** |
| **20** | **6** | **63** | **2** | **56** | **1 x 3 hour exam** | **150** |

**Lectures** are intended to present the key points and relate directly to the learning objectives (above)

**Practicals** (laboratories/workshops) serve to reinforce material presented in the lectures and relate directly to the learning objectives.

**MSCL** serves to reinforce material presented in the lectures and practical components. They also form part of the self-directed learning for the student

**Revision seminars** offer the students an opportunity to ask further questions of the staff and reinforce key points.

**Private study** encompasses the revising all material presented in the lectures, laboratories, workshops, MSCL. Students should be able to work through the learning objectives (above) and identify key areas that require further revision

1. Assessment methods and how these relate to testing achievement of the intended module learning outcomes

|  |  |  |  |
| --- | --- | --- | --- |
| **Method of assessment** | **Learning outcomes assessed (POs & SSLOs)** | **Weighting** | **Outline details** |
| **Continuous assessment** | **All subject specific learning outcomes (SSLOs)**  **All generic learning outcomes** | **40%** | **Essay on current approaches to study receptor structure and function** |
| **Examination** | **All subject specific learning outcomes (SSLOs)**  **All generic learning outcomes** | **60%** | **3 hour examination** |

**The pass mark for this module is 40%.**

1. Implications for learning resources, including staff, library, IT and space

**Additional laboratory resources may be required for this module.**

1. The School recognises and has embedded the expectations of current disability equality legislation, and supports students with a declared disability or special educational need in its teaching. Within this module we will make reasonable adjustments wherever necessary, including additional or substitute materials, teaching modes or assessment methods for students who have declared and discussed their learning support needs. Arrangements for students with declared disabilities will be made on an individual basis, in consultation with the University’s/Collaborative Partner’s (delete as applicable) disability/dyslexia support service, and specialist support will be provided where needed.
2. Campus(es) where module will be delivered:

**Medway School of Pharmacy, Medway Campus**

1. Partner College/Validated Institution:
2. University School responsible for the programme: **Medway School of Pharmacy**

**SECTION 2: MODULE IS PART OF A PROGRAMME OF STUDY IN A UNIVERSITY SCHOOL**

**Statement by the School Director of Learning and Teaching/School Director of Graduate Studies (as appropriate):** "I confirm I have been consulted on the above module proposal and have given advice on the correct procedures and required content of module proposals"

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| --- | --- |
| ................................................................  Director of Learning and Teaching  Dr Buge Apampa | ..............................................  Date |

**Statement by the Head of School:** "I confirm that the School has approved the introduction of the module and, where the module is proposed by School staff, will be responsible for its resourcing"

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| .................................................................  Head of School  Prof I Cumming. | ..............................................  Date |

**SECTION 3: MODULE IS PART OF A PROGRAMME IN A PARTNER COLLEGE OR VALIDATED INSTITUTION**

(Where the module is proposed by a Partner College/Validated Institution)

**Statement by the Nominated Officer of the College/Validated Institution** *(delete as applicable)***:** "I confirm that the College/Validated Institution*(delete as applicable)* has approved the introduction of the module and will be responsible for its resourcing"

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| .................................................................  Nominated Responsible Officer of Partner College/Validated Institution  ………………………………………………….  Print Name  …………………………………………………..  Post | ..............................................  Date |

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Partner College/Validated Institution

Module Specification Template  
Last updated February 2013