MODULE SPECIFICATION TEMPLATE

**SECTION 1: MODULE SPECIFICATIONS**

1. Title of the module

Pharmacology (Science Option)

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

Medway School of Pharmacy

1. Start date of the module

Summer 2014

1. The number of students expected to take the module

10 – 30 per cohort

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 Modules to be withdrawn on the introduction of this proposed module and consultation with other relevant Schools and Faculties regarding the withdrawal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

Intermediate (I)

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

15 credits (7.5 ECTS)

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

The module is part of the Fd Sc in Applied Bioscience Technology (which may or may not be incorporated into a Life Sciences Higher Apprenticeship [HA]) which is being delivered primarily through e-learning on a part-time basis over 3 years

1. Prerequisite and co-requisite modules

Prerequisites: BIOL1040, CHEM1097, BIOC1029, MICR1007, BIOL1041, ANAT1090, MOLE1007, BUSI1560.

Co-requisites: none

1. The programmes of study to which the module contributes

Fd Sc in Applied Bioscience Technology

1. The intended subject specific learning outcomes

After completing this module students will be able to demonstrate:

**11.1**) knowledge and understanding of the pharmacology that underlies the drug discovery process

**11.2**) knowledge and understanding of the main techniques used in the drug discovery process

**11.3**) the ability to analyse data obtained from a variety of technical approaches used in the drug discovery process

**11.4**) knowledge and understanding of basic- (as opposed to clinical-) science laboratory skills and *in vitro* pharmacology

**11.5**) understanding of molecular biology approaches used in modern drug discovery and have critical insight into the importance of proteins such as enzymes and ion channels as drug targets

1. The intended generic learning outcomes

After completing this module students will be able to demonstrate:

**12.1**) an ability to analyse proposed experimental strategies

**12.2**) problem solving skills relating to experimental data

**12.3**) the ability to plan and formulate concise communications to convey principles of scientific theories and ideas

**12.4**) numeric and statistical skills to inform the analysis and interpretation of scientific data

**12.5**) a range of study skills to support self directed learning

1. A synopsis of the curriculum

The aim of this module is to teach pharmacological skills necessary for the drug discovery process. This covers the following elements:

a) *in vitro* pharmacology, including quantitative drug-receptor interactions, receptor kinetics, studies of G protein-coupled receptors, and how *in vitro* data can be applied to the *in vivo* and clinical environment

b) enzymology, including the design of assays to distinguish different types of enzyme inhibitor, enzyme kinetics and the influence of inhibitor selectivity

c) ion channels, including how molecules might inhibit or activate ion channels and techniques for studying ion channel activity

d) basic-science laboratory skills and plate based assay techniques

1. Indicative Reading List

Rang HP, Dale MM, Ritter JM, Flower RJ (2007) Pharmacology 6th Edition; Churchill Livingston Press.

Aidley DJ, Stanfield PR (1996) Ion channels: molecules in action 1st Edition; Cambridge University 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

Online e-learning in a storyboard format is intended to present the key information directly relating to the learning objectives.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Activity | Online e-learning | Practical work activities | Compure-aided learning (CAL) | Total hours | To address Learning Outcomes:  |
| Teaching | 25 | 15 | 15 | 55 | 11.1, 11.2, 11.3, 11.4, 11.5, 12.1, 12.2, 12.3, 12.4, 12.5 |
| Private study | 15 | 5 | 10 | 30 | 11.1, 11.2, 11.3, 11.4, 11.5, 12.1, 12.2, 12.3, 12.4, 12.5 |
| Work-based experience |  | 60 |  | 60 | 11.1, 11.2, 11.4, 12.1, 12.3 |
| Formal assessment |  |  |  | 5 | 11.1, 11.2, 11.3, 11.4, 11.5, 12.1, 12.2, 12.3, 12.4, 12.5 |
| TOTAL HOURS |  |  |  | 150 |  |

*Online e-learning* is intended to present the key information directly relating to the learning objectives.

*Practical work activities* serve to reinforce material presented online and also relate directly to the learning objectives.

*CAL* serves to reinforce and support materials presented in the above forms in the students’ minds.

*Private study* encompasses the revising of all material presented in the above various forms of teaching and learning, together with the opportunity to explore and read more widely around specific topics.

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

|  |  |  |  |
| --- | --- | --- | --- |
| Assessment type | Weighting | Pass mark | To address Learning Outcomes: |
| Continuous assessment-1(assignments, reports, case study) | 20% | 40% | 11.1, 11.2, 11.3, 11.4, 11.5, 12.1, 12.2, 12.3, 12.4, 12.5 |
| Continuous assessment-2 (Mahara entries pertaining to work-based learning activities) | 30% | 40% | 11.1, 11.2, 11.4, 12.1, 12.3 |
| Examination-1 (MCQ, 40 min) | 20% | 40% | 11.1, 11.2, 11.4, 11.5, 12.2, 12.4, 12.5 |
| Examination-2 (written, 1 h) | 30% | 40% | 11.1, 11.2, 11.3, 11.4, 11.5, 12.1, 12.2, 12.3, 12.4, 12.5 |

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

An existing member of staff will convene the module. The module will be delivered by an existing VLE, and Mahara will be used to hold all work-based learning activities.

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.

*You may need to write a specific statement for the particular module. The format can be taken from above. Be aware of the particular demands of the individual module, e.g. field trips or practical work will have specific requirements. The statement must relate to arrangements necessary to ensure the student has the opportunity to achieve the learning outcomes of the module.*

1. Campus(es) where module will be delivered:

***If the module is part of a programme in a Partner College or Validated Institution, please complete the following:***

1. Partner College/Validated Institution:
2. University School responsible for the programme:

**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"

|  |  |
| --- | --- |
| ................................................................Director of Learning and Teaching/Director of Graduate Studies (delete as applicable)**Dr Scott S P Wildman**…………………………………………………Print Name | ..............................................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**Professor K Iain Cumming**…………………………………………………….Print Name | ..............................................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

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Last updated February 2013