**SECTION 1: MODULE SPECIFICATIONS**

1. Title of the module

**Research Methods in Pharmacology (PHAR1040)**

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

**Medway School of Pharmacy**

1. Start date of the module

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 Modules to be withdrawn on the introduction of this proposed module and consultation with other relevant Schools and Faculties regarding the withdrawal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

**I**

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

* **PHAM1003, Introduction to Physiology and Pharmacology**
* **PHAM1054, Introduction to Biosciences**
* **PHAM1004, Medicines Design and Manufacture**
* **Basic Laboratory Skills**
* **Analytical Techniques in Pharmacology**

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. Understand the use of descriptive statistics (**POA5, POB2, POC5, POD1, POD3, POD5**).

11.2. Understand contingency tables and the application of Chi-squared and Fisher’s exact tests (**POA5, POB2, POC5, POD1, POD3, POD5**).

11.3. Understand the proper use of controls and what is meant by ‘control’ group or condition (**POA5, POB2, POC5, POD1, POD3, POD5**).

11.4. Understand what is meant by random selection and assignment in experimental design (**POA5, POB2, POC5, POD1, POD3, POD5**).

11.5. Understand the logic of and use of parametric statistical tests such as t-tests and analysis of variance (**POA5, POB2, POC5, POD1, POD3, POD5**).

11.6. Understand the difference between categorical and continuous variables and the various statistical methods can be applied to these variables.

11.7 Understand the difference between correlation, simple linear regression and multiple regression analysis. (**POA5, POB2, POC5, POD1, POD3, POD5**).

11.8. Understand what is meant by within-subjects factors and between-subject factors and what repeated measures are and when to apply a repeated measures ANOVA (**POA5, POB2, POC5, POD1, POD3, POD5**).

11.9 Understand factorial and response surface designs and how they can be applied to pharmacology (**POA5, POB2, POC5, POD1, POD3, POD5**).

1. The intended generic learning outcomes

12.1 An ability to work and communicate effectively with others (**POD1 & POD2**)

12.2 An ability to problem-solve relating to quantitative data, calculations and numeracy (**POA5, POB2, POB3, POB4, POC5, POD2, POD3, POD4, POD5, & POD6**)

12.3 An ability to critically evaluate quantitative data (**POA5, POB2, POB3, POB4, POD2, POD3, POD4, POD5, & POD6)**

12.4 An ability to accurately retrieve and understand information as part of self-directed learning (**POD1,POD2,POD3,POD4,POD5,POD6)**

12.5 An understanding of the accepted ethical principals involved in the collection, use and interpretation of scientific data (**POB1, POB2, POB3, POB5, POB6**)

1. A synopsis of the curriculum

* Descriptive statistics
* Contingency tables, Chi-squared test, Fisher’s exact test
* T-tests
* Analysis of variance
* Correlation and regression
* Repeated measures
* Factorial and response surface designs

1. Indicative Reading List

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ISBN number** | **Author** | **Date** | **Title** | **Publisher** |
| 157808752X | Katsumi Kobayashi,K. Sadasivan Pilla | 31 Mar 2011 | A Handbook of Applied Statistics in Pharmacology | Science Publishers |

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 objectives

**Summary of Learning and Teaching Activities**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Lecture** | **Practical** | **MSCL/ CAL** | **Seminars** | **Private Study** | **Formal assessment** | **Total hours** |
| 20 | 12 | 60 | 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 | Subject specific learning outcomes 11.1, 11.3, 11.5  All generic learning outcomes  Subject specific learning outcomes 11.5, 11.6, 11.7, 11.8  All generic learning outcomes  All subject specific learning outcomes (SSLOs)  All generic learning outcomes | 20%  20%  PASS | Statistics assignment  Research design and statistics assignment  Satisfactory attendance and performance at all laboratories and workshop (80% minimum attendance is COMPULSORY) |
| Examination | All subject specific learning outcomes (SSLOs)  Generic learning outcomes  12.2, 12.4, 12.5 | 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 (computer software) 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"

|  |  |
| --- | --- |
| ................................................................  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