**SECTION 1: MODULE SPECIFICATIONS**

1. Title of the module

**Introduction to Biopharmaceuticals and Gene Therapy (PHAR1036)**

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

**0-30 students (elective)**

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 Modules to be withdrawn on the introduction of this proposed module and consultation with other relevant Schools and Faculties regarding the withdrawal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 2**

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:

1. **Students should have an understanding of how proteins, polypeptides and monoclonal antibodies can be used as biopharmaceuticals (POB2, POB3, POB5, POB6, POC1, POC3).**
2. **Students should have an understanding of the basic principles of gene therapy, including gene delivery and expression (POB2, POB3, POB5, POB6, POC1, POC3).**
3. **The students should have an understanding of the basic principles of pharmacogenetics (POB2, POB3, POB5, POB6, POC3).**
4. **Students should have an understanding of the methods used to identify genetic variation (POB2, POB3, POB5, POB6, POC3).**
5. The intended generic learning outcomes
	1. **The development of critical understanding of practical laboratory based skills (POB1-5, POC1-5)**
	2. **An ability to analyse, evaluate and correctly interpret data (POB1-5)**
	3. **An ability to present and communicate data (POD2, POD3, POD4)**
	4. **An ability to obtain and use information from a variety of sources as part of self-directed learning (POD1-6)**
	5. **Time-management and organisational skills within the context of self-directed learning (POD1-6)**
6. A synopsis of the curriculum
* Biopharmaceuticals
* Proteins and polypeptides as therapeutic agents
* Monoclonal antibodies as therapeutic agents
* Basic principles of pharmacogenetics
* Gene delivery
* Controlling gene expression
* Safety issues associated with gene therapy
* Therapeutic areas for gene therapy
1. Indicative Reading List

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| --- | --- | --- | --- | --- |
| **ISBN number** | **Author** | **Date** | **Title** | **Publisher** |
| **0702034711** | **Humphrey P. Rang, James M. Ritter, Rod J. Flower, Graeme Henderson.** | **31 Mar 2011** | **Rang & Dale's Pharmacology** | **Elsevier** |

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**

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| --- | --- | --- | --- | --- | --- | --- |
| **Lecture** | **Practical** | **MSCL/ CAL** | **Seminars** | **Private Study** | **Formal assessment** | **Total hours** |
| **20** | **12** | **57** | **2** | **56** | **1 x 3 hour exam** | **150** |

Lectures serve to deliver the core material directly related to themes shown in the curriculum synopsis and help the students achieve the subject specific learning outcomes

The laboratory practicals serve to reinforce concepts introduced in the lectures and also serve to help the students achieve both the subject specific learning outcomes and the generic learning outcomes

MSCL (**M**anaged **S**tudent **C**entred **L**earning) serves to reinforce concepts delivered in both lectures and laboratory practicals

Seminars serve to consolidate the material and help the students achieve the subject specific learning objectives

Private study (revision) is student driven and serves to consolidate understanding and help students achieve both subject selective learning outcomes and generic learning outcomes.

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, 11.2, 11.3All generic learning outcomesAll subject specific learning outcomes (SSLOs)All generic learning outcomes | 40%PASS | Essay (1500) on the Principles, applications and techniques of gene therapySatisfactory attendance and performance at all workshops (80% minimum attendance is COMPULSORY)  |
| Examination | All subject specific learning outcomes (SSLOs)Generic Learning outcomes 12.4 and 12.5 | 60% | 3 hour examination |

The pass mark for this module is 40%. Satisfactory attendance and performance at all scheduled coursework sessions is normally defined as a minimum of 80% attendance of all laboratory/workshop classes, plus lab books maintained to the required GLP standard

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 TeachingDr 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 SchoolProf 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