1. **Title of the module**

LABS505Pharmacology

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

Centre for Higher and Degree Apprenticeships

1. **The level of the module (Level 4, Level 5, Level 6 or Level 7)**

Level 5

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)**

Flexible delivery model

Autumn and/or Spring and/or Summer

1. **Prerequisite and co-requisite modules**

N/A

1. **The programmes of study to which the module contributes**

FdSc and BSc (Hons) in Applied Bioscience

FdSc and BSc (Hons) in Applied Chemical Sciences

1. **The intended subject specific learning outcomes.  
   On successfully completing the module students will be able to:**

8.1 Demonstrate the knowledge and critical understanding of the pharmacology that underlies the drug discovery process.

8.2 Show the capability to use a range of established techniques used in the drug discovery process.

8.3 Critically analyse data obtained from a variety of established technical approaches used in the drug discovery process.

8.4 Demonstrate theknowledge and understanding of basic- (as opposed to clinical-) science laboratory skills and *in vitro* pharmacology.

8.5 Apply 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.  
   On successfully completing the module students will be able to:**

9.1 Analyse proposed experimental strategies.

9.2 Demonstrate problem solving skills relating to experimental data.

9.3 Plan and formulate concise communications to convey principles of scientific theories and ideas.

9.4 Interpret and analyse scientific data by using numeric and statistical skills.

9.5 Use 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:

* + 1. *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.
    2. enzymology, including the design of assays to distinguish different types of enzyme inhibitor, enzyme kinetics and the influence of inhibitor selectivity.
    3. ion channels, including how molecules might inhibit or activate ion channels and techniques for studying ion channel activity.
    4. basic-science laboratory skills and plate-based assay techniques.

1. **Reading list (Indicative list, current at time of publication. Reading lists will be published annually)**

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

Becchetti, A. (2010) Integrins and Ion Channels Molecular Complexes and Signaling. Springer New York.

1. **Learning and teaching methods**

Blended distance learning:

Contact Hours: 120

Private Study Hours: 30

Total Study Hours: 150

1. **Assessment methods**
   1. Main assessment methods

Portfolio, two coursework assignments and exam

Weighting:

2 Essay Assignments 20% (10% each)

Portfolio 30% - composed of 5 individual assignments where topics are applied to the workplace

2 hr Exam 50% - MCQs (20%) and standard-length questions (30%)

The pass mark for each individual assessment is 40%.  All assessments must be passed in order to pass the module.

13.2 Reassessment methods

Like for like

1. ***Map of module learning outcomes (sections 8 & 9) to learning and teaching methods (section12) and methods of assessment (section 13)***

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Module learning outcome** | 8.1 | 8.2 | 8.3 | 8.4 | 8.5 | 9.1 | 9.2 | 9.3 | 9.4 | 9.5 |
| **Learning/ teaching method** |  |  |  |  |  |  |  |  |  |  |
| **Private Study** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** |
| Teaching | **x** | **x** | **x** | **x** | **x** |  | **x** | **x** | **x** | **x** |
| Work based experience |  |  |  |  |  | **x** | **x** | **x** | **x** | **x** |
| **Assessment method** |  |  |  |  |  |  |  |  |  |  |
| Assignments | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** |
| Exam | **x** | **x** | **x** | **x** | **x** |  |  |  |  | **x** |
| Portfolio | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** |

1. **Inclusive module design**

The School/Collaborative Partner recognises and has embedded the expectations of current equality legislation, by ensuring that the module is as accessible as possible by design. Additional alternative arrangements for students with Inclusive Learning Plans (ILPs)/declared disabilities will be made on an individual basis, in consultation with the relevant policies and support services.

The inclusive practices in the guidance (see Annex B Appendix A) have been considered in order to support all students in the following areas:

a) Accessible resources and curriculum

b) Learning, teaching and assessment methods

1. **Campus(es) or centre(s) where module will be delivered**

Blended distance learning – delivered from Medway or Canterbury campus

1. **Internationalisation**

International vocation is an important part of Applied Bioscience. With regards to the intended learning outcomes, in particular 8.2 and 8.4, the target learning outcomes within this module are applicable worldwide as part of the universal principles used in drug discovery and are used in the pharmaceutical R&D industry worldwide. Furthermore, learning objective 8.1 is key in the research industry worldwide across all areas of Applied Bioscience.

**FACULTIES SUPPORT OFFICE USE ONLY**

**Revision record – all revisions must be recorded in the grid and full details of the change retained in the appropriate committee records.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Date approved | Major/minor revision | Start date of delivery of revised version | Section revised | Impacts PLOs (Q6&7 cover sheet) |
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