1. **Title of the module**

Pharmacology Physiology Project (PHAR1044)

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

Medway School of Pharmacy

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

Level 6

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

30 credits (15)

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

Autmumn and Spring terms

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

PHAR1039 Pharmacokinetics

PHAR1045 Cardiovascular Respiratory and Renal Pharmacology

PHAR1035 Immunopharmacology and Microbiology

PHAR1034 Endocrine and Gastrointestinal Pharmacology

PHAR1040 Research Methods in Pharmacology

PHAR1038 Neuropharmacology

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

BSc (Hons) in Physiology and Pharmacology

1. **The intended subject specific learning outcomes.**

Students who undertake **all projects types** will have

* 1. Developed an in-depth understanding of an advanced research topic in the field of pharmacology, physiology, drug discovery and/or drug development.
	2. Developed an appreciation for how scientific knowledge is obtained, critically evaluated and discussed in a wider context.

Students who undertake a **laboratory (wet) or computer-based (dry) project** will have

* 1. Developed an understanding of how to design and execute an experiment and how to record their data.
	2. Developed a greater expansion of their experimental skill set.
	3. Developed a greater awareness of safety and good laboratory practice (wet lab experiments only).

Students who undertake a **literature-based dissertation project** will have

* 1. Developed the intellectual skills needed to critically analyse (i) existing scientific data, (ii) ideas for possible research questions and (iii) ideas for novel experiments to address these questions.
	2. Developed an understanding of both the strengths and limitations of the scientific method.

Students who undertake a **scientific communication project** will have

* 1. Developed the ability to understand scientific information and subject specific terminology and translate these to a wider, non-scientific audience
	2. Developed the ability to present scientific research to a general audience with a view to making it accessible and interesting.

Students who undertake a **business project** will have

* 1. Developed an understanding of how the fundamental scientific principles of pharmacology underpin the drug discovery and development process.
	2. Developed an appreciation of how scientific research can be used in a business context.
	3. Developed and understanding of how to prepare a business plan applicable to the pharmaceutical/drug discovery/drug development industry.

Students who undertake a **drug regulation/regulatory affairs project** will have

* 1. Developed an understanding of the complexity of the current regulatory frameworks.
	2. Developed an understanding of how current drug regulation operates at both a national and supranational level.
	3. Developed an understanding of the role of regulatory affairs professionals in both industry and in governmental bodies.
1. **The intended generic learning outcomes.
On successfully completing the module students will have**
	1. Further developed their ability to problem solve
	2. Further developed their ability to present and communicate data
	3. Further developed their ability to obtain and use information from a variety of sources as part of self-directed learning
	4. Further developed their time-management and organisational skills within the context of self-directed learning
2. A synopsis of the curriculum
	1. **Laboratory (wet) or Computer-based (dry) projects** will entail practical research undertaken in a laboratory or computer suite, respectively. This will be followed by a written report.
	2. **Dissertation projects** will entail a library-based comprehensive literature review in the format of a scientific review paper.
	3. **Scientific communication** projects will involve a similar approach as defined by a dissertation project, but will emphasise the presenting of the scientific literature or topic to a non-science audience.
	4. **Business projects** will entail the development of a pharmaceutical/drug discovery/drug development business plan.
	5. **Drug regulation/regulatory affairs projects** will entail a comprehensive review of the current national and supranational regulatory frameworks and the specific issues that pertain to these regulatory frameworks, relevant for a chosen therapeutic area.
3. **Reading list (Indicative list, current at time of publication. Reading lists will be published annually)**

Literature/reading lists are specific to the project.

1. **Learning and teaching methods**

Early in the **autumn term**, projects are assigned to students by the module convenor in consideration of the student’s choice. Students then meet individually or in small groups with the project supervisor to discuss the project and the principal objectives. Students will then write a brief literature review to prepare for the project. The literature is a formative assessment and will likely form the basis of the introduction to the project report.

The principal project activities will take place in **the spring term**. Students undertaking laboratory projects will spend 192 hours (24 hours per week for 8 weeks) in the laboratory or computer suites. A further 108 hours are allowed for literature reading and writing the final year report. Further details regarding the structure, style and approximate word limit range of the report are discussed in summary slides and the project handbook which are available to the students.

There will be informal opportunities to discuss the project and relevant literature with the supervisor. Formal meetings may be arranged at the discretion of the supervisor and the student. Students undertaking non-laboratory projects are based primarily in the library and are expected to dedicate 300 hours to their project. Students undertaking non-laboratory students should meet with their project supervisor weekly to discuss their progress and any problems or issues.

All students are allowed time to complete the final project report following the end of formal project time. However, students should be encouraged to start writing as early as possible during the **autumn term**

1. **Assessment methods**

|  |  |  |  |
| --- | --- | --- | --- |
| **Method of assessment** | **Learning outcomes assessed (POs & SSLOs)** | **Weighting** | **Outline details** |
| **Continuous assessment** | **SSLO 8.1, 8.2** | **Formative** | **Literature review**  |
| **Continuous** **assessment** | **All subject relevant learning outcomes (SSLOs)****All generic learning outcomes** | **10%** | **Supervisor’s rating of the student performance** |
| **Written report** | **All subject relevant learning outcomes (SSLOs)****All generic learning outcomes** | **70%** | **Written Report** |
| **Poster Presentation** | **All subject relevant learning outcomes (SSLOs)****All generic learning outcomes** | **20%** | **Assessment conducted by at least two members of academic staff** |

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* | *8.6* | *8.7* | *8.8* | *8.9* | *8.10* | *8.11* | *8.12* | *8.13* | *8.14* | *8.15* |
| **Learning/** **teaching method** | **Hours** **allocated** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Laboratory time and/or supervisor meetings/tutorials |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Laboratory  | 192 | **X** | **X** | **X** | **X** | **X** |  |  |  |  |  |  |  |  |  |  |
| Dissertation | 12 | **X** | **X** |  |  |  | **X** | **X** |  |  |  |  |  |  |  |  |
| Scientific communication | 12 | **X** | **X** |  |  |  |  |  | **X** | **X** |  |  |  |  |  |  |
| Business | 12 | **X** | **X** |  |  |  |  |  |  |  | **X** | **X** | **X** |  |  |  |
| Drug regulation | 12 | **X** | **X** |  |  |  |  |  |  |  |  |  |  | **X** | **X** | **X** |
| **Private Study** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Laboratory | 108 | **X** | **X** | **X** | **X** | **X** |  |  |  |  |  |  |  |  |  |  |
| Dissertation | 288 | **X** | **X** |  |  |  | **X** | **X** |  |  |  |  |  |  |  |  |
| Scientific communication | 288 | **X** | **X** |  |  |  |  |  | **X** | **X** |  |  |  |  |  |  |
| Business | 288 | **X** | **X** |  |  |  |  |  |  |  | **X** | **X** | **X** |  |  |  |
| Drug regulation | 288 | **X** | **X** |  |  |  |  |  |  |  |  |  |  | **X** | **X** | **X** |
| **Assessment method** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Written Report** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Laboratory |  | **X** | **X** | **X** | **X** | **X** |  |  |  |  |  |  |  |  |  |  |
| Dissertation |  | **X** | **X** |  |  |  | **X** | **X** |  |  |  |  |  |  |  |  |
| Scientific communication |  | **X** | **X** |  |  |  |  |  | **X** | **X** |  |  |  |  |  |  |
| Business |  | **X** | **X** |  |  |  |  |  |  |  | **X** | **X** | **X** |  |  |  |
| Drug regulation |  | **X** | **X** |  |  |  |  |  |  |  |  |  |  | **X** | **X** | **X** |
| **Presentation** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Laboratory |  | **X** | **X** | **X** |  |  |  |  |  |  |  |  |  |  |  |  |
| Dissertation |  | **X** | **X** |  |  |  | **X** | **X** |  |  |  |  |  |  |  |  |
| Scientific communication |  | **X** | **X** |  |  |  |  |  | **X** | **X** |  |  |  |  |  |  |
| Business |  | **X** | **X** |  |  |  |  |  |  |  |  | **X** | **X** |  |  |  |
| Drug regulation |  | **X** | **X** |  |  |  |  |  |  |  |  |  |  | **X** | **X** | **X** |
| **Performance** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Laboratory |  | **X** | **X** | **X** | **X** | **X** |  |  |  |  |  |  |  |  |  |  |
| Dissertation |  | **X** | **X** |  |  |  | **X** | **X** |  |  |  |  |  |  |  |  |
| Scientific communication |  | **X** | **X** |  |  |  |  |  | **X** | **X** |  |  |  |  |  |  |
| Business |  | **X** | **X** |  |  |  |  |  |  |  | **X** | **X** | **X** |  |  |  |
| Drug regulation |  | **X** | **X** |  |  |  |  |  |  |  |  |  |  | **X** | **X** | **X** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Module learning outcome** |  | *9.1* | *9.2* | *9.3* | *9.4* |
| **Learning/ teaching method** | **Hours allocated** |  |  |  |  |
| **Private Study** |  | **X** | **X** | **X** | **X** |
| Laboratory time if relevant |  | **X** |  |  | **X** |
| **Assessment method** |  |  |  |  |  |
| *Written Report* |  | **X** | **X** | **X** | **X** |
| *Presentation* |  |  | **X** |  | **X** |
| *Performance* |  | **X** | **X** | **X** | **X** |

1. **Inclusive module design**

The School 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**

Medway Campus, unless otherwise specified in the specific project.

1. **Internationalisation**

The majority of staff contributing to the delivery of this module (MSOP Biological Science grouping) have been trained at and/or have worked in, institutions throughout the world. Many active research staff at the Medway School of Pharmacy have current international research collaborations. Additionally, some project choices available to students (e.g., regulatory affairs) have an inherent supranational or international focus.

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**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 the delivery of revised version | Section revised | Impacts PLOs (Q6&7 cover sheet) |
| 24/05/17 | Major | September 2017 | 8, 9, 12-14 | No |
|  |  |  |  |  |