

# Drug Discovery and Development (Including Pharmacology) Course Descriptor

Course Title	Drug Discovery and Development (Including Pharmacology)	Faculty	EDGE Innovation Unit (London)
Course code	NCHNAP489	Course Leader	Professor Scott Wildman (interim)
Credit points	15	Teaching Period	This course will typically be delivered over a 6-week period.
FHEQ level	4	Date approved	Sep 2021
Compulsory/Optional	Compulsory	Date modified	
Pre-requisites	None		
Co-requisites	None		

## Course Summary

This course introduces the drug discovery and development process: target identification, biological screening, hit to lead, pharmacology, safety, manufacturing, pre-clinical and clinical. Focusing on selected case studies, the course explores innovation within a field of complex scientific and strategic decision making, where outcomes and results are unpredictable. Governed by strategic business decisions, ethical considerations, social responsibilities and research at the forefront of bioscience, including genomics, molecular biology, biotechnology and bioinformatics, the examination of drug discovery and development provides insight into exploratory methodologies and interdisciplinary practice.

## Course Aims

- For learners to understand the bioscience techniques and tools used in drug discovery and development.
- To introduce learners to the complexity of drug discovery and development and the wider business, cultural and regulatory contexts within which it operates.

- To enable learners to understand the interdisciplinary nature of drug discovery and development.

## Learning Outcomes

On successful completion of the course, learners will be able to:

### Knowledge and Understanding

- K1a Understand the underlying concepts and principles used in drug discovery and development, such as biological screening and pharmacology.
- K3a Understand the well-defined stages and interdisciplinary nature of the drug discovery and development process, such as target identification and hit to lead.
- K4a Understand the wider business, ethical and regulatory context of the drug discovery and development sector through case studies.

### Subject Specific Skills

- S2a Assess the impact of high-throughput and digital technologies in the drug discovery and development process, including pharmacology.
- S3a Employ a systematic approach to the evaluation of drug discovery and development methodologies, processes and techniques aligned to the bioscience sector.
- S4a Examine the evolution of drug discovery and development within wider scientific, cultural, ethical, social and business contexts.

### Transferable and Professional Skills

- T1a Take responsibility for self-reflection and challenge assumptions.
- T2a Develop critical thinking.
- T3a Develop lines of argument and make sound judgements.
- T3a Display a developing technical proficiency in written English and an ability to communicate clearly and accurately in structured and coherent pieces of writing.

## Teaching and Learning

This is an e-learning course, taught throughout the year.

This course can be offered as a standalone short course.

Teaching and learning strategies for this course will include:

- Online learning
- Online discussion groups
- Online assessment

Course information and supplementary materials will be available on the University's Virtual Learning Environment (VLE).

Learners are required to attend and participate in all the formal and timetabled sessions for this course. Learners are also expected to manage their self-directed learning and independent study in support of the course.

The course learning and teaching hours will be structured as follows:

- Off-the-job learning and teaching (6 days x 7 hours) = 42 hours
- One-the-job learning (12 days x 7 hours) = 84 hours (e.g. 2 days per week for 6 weeks)
- Private study (4 hours per week) = 24 hours

Total = 150 hours

Workplace assignments (see below) will be completed as part of on-the-job learning.

## Assessment

### Formative

Learners will be formatively assessed during the course by means of set assignments. These will not count towards the final degree but will provide learners with developmental feedback.

### Summative

Assessment will be in two forms:

AE	Assessment Type	Weighting	Online submission	Duration	Length
1	Written Assignment (case study based essay)	50%	Yes	-	2500 words +/- 10%
2	Set Exercises	50%	Yes	Requiring on average 20 – 30 hours to complete	

### Feedback

Learners will receive formal feedback in a variety of ways: written (via email or VLE correspondence) and indirectly through online discussion groups. Learners will also attend a formal meeting with their Academic Mentor (and for apprentices, including their Line Manager). These bi or tri-partite reviews will monitor and evaluate the learner's progress.

Feedback is provided on summatively assessed assignments and through generic internal examiners' reports, both of which are posted on the VLE.

## Indicative Reading

Note: Comprehensive and current reading lists for courses are produced annually in the Course Syllabus or other documentation provided to learners; the indicative reading list provided below is used as part of the approval/modification process only.

### Books

- Benjamin, B. (2015). *Basic principles of drug discovery and development*. Amsterdam, Netherlands : Academic Press 2015
- O'Donnell, J. J. (2020). *Drug discovery and development* (Third edition.). Boca Raton, FL : CRC Press, Taylor & Francis Group 2020
- Battista, E., Yassin, G. (2012). *Pharmacology* (4th ed.). Edinburgh : Elsevier

### Journals

Learners are encouraged to read material from relevant journals on drug discovery and development as directed by their course leader.

### Electronic Resources

Learners are encouraged to consult relevant websites on drug discovery and development.

## Indicative Topics

- Drug Discovery and Development Process
- Pharmacology
- Interdisciplinary practice in biosciences

## Version History

<b>Title: NCHNAP489 Drug Discovery and Development (Including Pharmacology) Course Descriptor</b> <b>Approved by: Academic Board</b> <b>Location: Academic Handbook/Programme specifications and Handbooks/ Undergraduate Apprenticeship Programmes/BSc (Hons) Bioscience with Digital Technologies Programme Specification/Course Descriptors</b>					
Version number	Date approved	Date published	Owner	Proposed next review date	Modification (As per AQF4) & category number
3.0	October 2022	January 2023	Scott Wildman	September 2026	Category 1: Corrections/clarifications to documents which do not change approved content.  Category 3: Changes to Learning Outcomes
2.1	May 2022	May 2022	Scott Wildman	September 2026	Category 1: Corrections/clarifications to documents which do not change approved content or learning outcomes
2.0	January 2022	April 2022	Scott Wildman	September 2026	Category 3: Changes to Learning Outcomes
1.0	September 2021	September 2021	Scott Wildman	September 2026	