Laboratory-based Residential Course Descriptor

Course Title	Laboratory-based Residential	Faculty	EDGE Innovation Unit (London)
Course code	NCHNAP5111	Course Leader	Professor Scott Wildman (interim)
Credit points	15	Teaching Period	This course will typically be delivered over a 2-week period.
FHEQ level	5	Date approved	Sep 2021
Compulsory/ Optional	Compulsory	Date modified	
Pre-requisites	None		
Co-requisites	None		

Course Summary

This course is an intensive two-week, face-to-face bootcamp where learners will undertake laboratory based investigations using a variety of scientific techniques, procedures and methods used in the bioscience sector. Learners will demonstrate compliance with quality standards, safe working practices, environment and risk management systems relevant to the workplace. The theoretical basis of laboratory techniques will be examined and results of laboratory work analysed *via* a range of digital methods. Both oral and written communication methods will be assessed.

Course Aims

- For learners to develop their practical skills through a range of hands-on experimental laboratory procedures.

- For learners to analyse results using a range of data analysis and data visualisation tools.

- For learners to work effectively in a group and communicate through a range of media.

Learning Outcomes

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

Knowledge and Understanding

K1b   Knowledge and critical understanding of the underlying scientific principles of a range of experimental techniques.

K2b   Knowledge and critical understanding of how to conduct reproducible and safe laboratory practice.

K3b   Knowledge and critical understanding of how to evaluate experimental results and draw conclusions using a range of data analysis methods.

Subject Specific Skills

S1b   Use a range of established scientific approaches, quality standards and safe working practices.

S3b   Analyse, interpret and robustly evaluate scientific data, communicate ideas and comply to business rules with regard to record keeping.

S4b   Take responsibility for the planning and efficient implementation of experimental projects to meet scientific objectives.

Transferable and Professional Skills

T2b   Apply problem-solving and time management skills to work creatively and effectively.

T3b   Communicate clear arguments and critical analysis to specialist and non-specialist audiences.

T3bi   Work effectively with others and promote inclusivity, diversity, integrity and ethics.

T3bii   Demonstrate a sound technical proficiency in written English and skill in selecting vocabulary so as to communicate effectively to specialist and non-specialist audiences.

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	Practical Exercise	50%	Yes	Requiring on average 15 – 25 hours to complete	-
2	Set Exercises (following a practical exercise)	50%	Yes	Requiring on average 20 – 25 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

- Meah, M. S., Kebede-Westhead, E., & ProQuest. (2012). *Essential laboratory skills for biosciences*. Chichester England ; Hoboken, N.J. : Wiley-Blackwell 2012

- Boyer, R. F. (1993). *Modern experimental biochemistry* (2nd ed.). Benjamin/Cummings Pub. Co.

- Clarke, G. M. (1994). *Statistics and experimental design : an introduction for biologists and biochemists* (3rd ed.). London : E. Arnold ; New York : Halsted Press.

Journals

Learners are encouraged to read material from relevant journals on laboratory techniques as directed by their course leader.

Electronic Resources

Learners are encouraged to consult relevant websites on laboratory techniques.

Indicative Topics

- Experimental methods
- Data analysis
- Written and oral communication

Version History

Title: NCHNAP5111 Laboratory-based Residential Course Descriptor					
Approved by: Academic Board					
Location: Academic Handbook/Programme specifications and Handbooks/ Undergraduate Apprenticeship Programmes/BSc (Hons) Bioscience with Digital Technologies Programme Specification/Course Descriptors					
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.
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	