

Infection and Allergy (Including Applied Microbiology) Course Descriptor

Course Title	Infection & Allergy (including Applied Microbiology)	Faculty	EDGE Innovation Unit (London)
Course code	NCHNAP5110	Course Leader	Professor Scott Wildman (interim)
Credit points	15	Teaching Period	This course will typically be delivered over a 6-week period.
FHEQ level	5	Date approved	Sep 2021
Compulsory/Optional	Compulsory	Date modified	
Pre-requisites	None		
Co-requisites	None		

Course Summary

The course provides an overview of the processes of infection caused by bacteria, viruses, fungi and parasites, their biology, associated diseases and methods of transmission. It investigates how the immune system works at a molecular level employing innate and adaptive responses to pathogens, including the process of antigen recognition and antibody production. Allergic reactions are examined in relation to the immune system with an investigation of the processes involved in the 'false' identification of an antigen and their consequences. The course concludes with an examination of the impact that applied microbiology has on developing knowledge and understanding of infection and the development of innovative approaches to mitigate the impact of the micro-organisms that cause disease.

Course Aims

- To introduce the principles, theory, concepts and processes by which infections occur and gain an understanding of the biology of microbes responsible for disease.
- To examine the operation of the human immune system and its response to infection and the cause of allergic reactions.
- To gain insight into microbiological research that explores epidemiology, and innovative responses to the micro-organisms that cause disease.

Learning Outcomes

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

Knowledge and Understanding

- K1b Knowledge and critical understanding of the underlying theory, concepts and principles of infection, the taxonomy, ecology and biology of micro-organisms that cause disease and major immune system functions.
- K2b Knowledge and critical understanding of experimental procedures used to understand and analyse infectious agents, including microbiological and immunological techniques.
- K4b Knowledge and critical understanding of therapeutics used to treat infection and allergy, including recent advances.

Subject Specific Skills

- S2b Investigate the core distinguishing biological characteristics of micro-organisms and the process by which they infect and duplicate.
- S3b Analyse, interpret and investigate the operation of the immune system in response to infection and allergic reaction.

Transferable and Professional Skills

- T1b Take responsibility for independent study and time management.
- T3b Effectively communicate arguments, analyses and conclusions.
- T3b 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	Portfolio (work-based exercises)	60%	Yes	Requiring on average 20 – 30 hours to complete	-
2	Multiple Choice Exam	40%	Yes	1 hour	

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

- Murphy, K. P., Travers, Paul, Walport, Mark, & Janeway, Charles. (2008). *Janeway's immunobiology*. (7th ed. / Kenneth Murphy, Paul Travers, Mark Walport ; with contributions by Michael Ehrenstein ... [et al.]). New York : Garland Science.
- Madigan, M. T., Martinko, J. M, & Brock, T. D. (2006). *Brock biology of microorganisms* (11th ed.). Upper Saddle River, NJ : Pearson Prentice Hall.
- Goering, R. V. (2008). *Mims' medical microbiology*. (4th ed. / Richard V. Goering ... [et al.]). St Louis : Mosby.

Journals

Learners are encouraged to read material from relevant journals on infection and immunity as directed by their course leader.

Electronic Resources

Learners are encouraged to consult relevant websites on infection and immunity.

Indicative Topics

- The immune system
- Infection
- Microbiology

Version History

Title: NCHNAP5110 Infection and Allergy (Including Applied Microbiology) 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
2.0	January 2022	April 2022	Scott Wildman	September 2026	Category 3: Changes to Learning Outcomes
1.0	September 2021	September 2021	Scott Wildman	September 2026	