

BS127-12 Agents of Infectious Disease

22/23

Department

Life Sciences

Level

Undergraduate Level 1

Module leader

Robert Spooner

Credit value

12

Module duration

9 weeks

Assessment

100% exam

Study location

University of Warwick main campus, Coventry

Description

Introductory description

Infectious agents come in many forms, including viruses, bacteria, yeasts and eukaryotic parasites. Infectious disease caused by this array of agents is all around us. Every type of cellular life form can be infected. Human disease clearly matters a lot to us, but infections of other species also have major impacts on human activity and well-being, such as when crops and livestock fall victim to infection. This module will introduce you to important aspects of the topic of infection, considering some of the agents themselves, and their interactions with host species.

[Module web page](#)

Module aims

This module introduces students to important aspects of the topic of infection, considering some of the agents themselves and their interactions with host species

Outline syllabus

This is an indicative module outline only to give an indication of the sort of topics that may be covered. Actual sessions held may differ.

Structure of bacterial pathogens

Diversity, growth, cell wall, cell membrane, endospores as survival mechanism, pili and fimbriae as attachment organelles, flagella and chemotaxis.

Structure of viruses

Obligate intracellular parasites, growth, nucleic acid content, capsids and structure; process of infection

Immunology

Innate immune response; adaptive immune response, molecular structure of immunoglobulins

Epidemiology

Modelling infectious disease; population biology; epidemic patterns of disease; endemic patterns of disease; disease control

Learning outcomes

By the end of the module, students should be able to:

- the structure of viruses and how this relates to the capacity of viruses to cause disease
- Upon completion of the module, students should be able to understand: the role of various structures associated with the bacterial cell in causing disease,
- a range of diseases caused by bacteria
- the host response to viral challenge
- the mechanisms by which diseases spread
- how epidemiological theory is used to understand the behaviour of pathogens in populations

Indicative reading list

Brock Biology of Microorganisms 2008

Dimmock et al Introduction to Modern Virology 2006

Students are directed to other sources for specific directed reading during the lectures.

Subject specific skills

Upon completion of the module, students should be able to understand the role of various structures associated with the bacterial cell in causing disease, understand a range of diseases caused by bacteria, understand the structure of viruses and how this relates to the capacity of viruses to cause disease, understand the host response to viral challenge, understand the mechanisms by which diseases spread, and understand how epidemiological theory is used to understand the behaviour of pathogens in populations

Transferable skills

1. Critical appraisal of source material
 2. Self directed learning
 3. Adult learning
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Study

Study time

Type	Required
Lectures	30 sessions of 1 hour (25%)
Tutorials	1 session of 1 hour (1%)
Private study	89 hours (74%)
Total	120 hours

Private study description

Independent learning, self directed learning and revision for final year exams.

Costs

No further costs have been identified for this module.

Assessment

You must pass all assessment components to pass the module.

Students can register for this module without taking any assessment.

Assessment group B1

	Weighting	Study time	Eligible for self-certification
Assessment component			
Online Examination 1 hour examination- MCQ based	100%		No

- Online examination: No Answerbook required

Reassessment component is the same

Feedback on assessment

Availability

Courses

This module is Core for:

- Year 1 of UBSA-C700 Undergraduate Biochemistry
- ULFA-C1A2 Undergraduate Biochemistry (MBio)
 - Year 1 of C1A2 Biochemistry
 - Year 1 of C700 Biochemistry
- Year 1 of ULFA-C702 Undergraduate Biochemistry (with Placement Year)
- Year 1 of ULFA-C1A6 Undergraduate Biochemistry with Industrial Placement (MBio)
- Year 1 of UBSA-3 Undergraduate Biological Sciences
- Year 1 of ULFA-C1A1 Undergraduate Biological Sciences (MBio)
- Year 1 of ULFA-C113 Undergraduate Biological Sciences (with Placement Year)
- Year 1 of ULFA-C1A5 Undergraduate Biological Sciences with Industrial Placement (MBio)
- Year 1 of UBSA-C1B9 Undergraduate Biomedical Science
- ULFA-C1A3 Undergraduate Biomedical Science (MBio)
 - Year 1 of C1A3 Biomedical Science
 - Year 1 of C1B9 Biomedical Science
- Year 1 of ULFA-C1A7 Undergraduate Biomedical Science with Industrial Placement (MBio)
- Year 1 of ULFA-CB18 Undergraduate Biomedical Science with Placement Year
- Year 1 of ULFA-B140 Undergraduate Neuroscience (BSc)
- Year 1 of ULFA-B142 Undergraduate Neuroscience (MBio)
- Year 1 of ULFA-B143 Undergraduate Neuroscience (with Industrial Placement) (MBio)
- Year 1 of ULFA-B141 Undergraduate Neuroscience (with Placement Year) (BSc)

This module is Core optional for:

- Year 1 of UIPA-C1L8 Undergraduate Life Sciences and Global Sustainable Development