1. **Title of the module**

BIOS8530 (BI853) - Bacterial Pathogens

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

Biosciences

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

Level 7

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

15 credits (7.5 ECTS)

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

Spring

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

None

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

MSc Infectious Diseases (core)

MSc Biomedicine (optional)

1. **The intended subject specific learning outcomes.
On successfully completing the module students will be able to:**

8.1 Demonstrate systematic understanding of and a critical awareness of current problems and/or new insights related to bacterial pathogens.

8.2 Demonstrate comprehensive understanding of techniques applicable to bacterial pathogen research.

8.3 Understanding how our current knowledge impacts upon future research to combat the spread of bacterial infections.

8.4 Critically evaluate current research in the field of bacterial pathogens and to evaluate methodologies/research findings and develop critiques of them.

1. **The intended generic learning outcomes.
On successfully completing the module students will be able to:**

9.1 Organise information clearly and present information for different audiences.

9.2 Interpret data, marshal information from published sources, and critically evaluate own research and that of others.

9.3 Work both independently and as part of a research group using peer support, diplomacy and collective responsibility.

9.4 Manage time and workload in order to meet personal targets and imposed deadlines.

9.5 Use appropriate technology to retrieve, analyse and present scientific information.

1. **A synopsis of the curriculum**

The module aims to develop an in depth understanding of bacterial pathogens, based around lectures and interactive workshops. Key topics include Gram-negative pathogens (e.g. *E. coli*,  *Pseudomonas*), Gram-positive pathogens (e.g. *Staphylococcus aureus, Bacillus anthracis, Mycobacterium tuberculosis*), current and emerging virulence traits (e.g. adhesion, invasiveness, enhanced spread, toxin production, antimicrobial drug resistance). The module will involve a rotation of seminars covering key theoretical concepts, mechanistic insights into host:pathogen interactions, and discussion of practical approaches to combat the spread of bacterial infections. These will be accompanied by interactive workshops wherein students will analyse, present and discuss the relevant research literature. In addition, a computer workshop will provide bioinformatics training for the analysis of genomic traits pertaining to bacterial virulence. The students will gain experience in scientific design, literature analysis, scientific communication and the analysis and interpretation of complex experimental data.

1. **Reading list (Indicative list, current at time of publication. Reading lists will be published annually)**

The reading list will be research articles, which will be used to drive a case-study based approach to learning. Students will be provided with their own copies of this reading material, but in some cases they will be set tasks for receiving appropriate journal articles to which we already have access.

1. **Learning and teaching methods**

Total contact hours: 28

Private study hours: 122

Total study hours: 150

1. **Assessment methods**
	1. Main assessment methods

Assignment – computer workshop (30%)

Assignment – 10 minute presentation (30%)

Exam - 2h (40%)

13.2 Reassessment methods

Reassessment Instrument: 100% coursework.

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* | *9.1* | *9.2* | *9.3* | *9.4* | *9.5* |
| **Learning/ teaching method** |  |  |  |  |  |  |  |  |  |
| Private Study | **X** | **X** | **X** | **X** |  | **X** |  | **X** | **X** |
| Seminars/discussion sessions | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** |  |
| Journal club presentations | **X** | **X** | **X** | **X** | **X** |  |  | **X** | **X** |
| Computer workshop |  |  | **X** |  |  | **X** | **X** |  | **X** |
| **Assessment method** |  |  |  |  |  |  |  |  |  |
| Journal club presentations | **X** | **X** | **X** | **X** | **X** |  |  | **X** | **X** |
| Computer workshop |  |  | **X** |  |  | **X** | **X** |  | **X** |
| Examination | **X** | **X** | **X** | **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**

Canterbury

1. **Internationalisation**

Biosciences is an international discipline. This module presents subject-specific knowledge, research approaches and techniques, generated, developed and refined by scientists around the world. Mastery of the learning outcomes will equip students to apply the theories and techniques of the module in a wide range of international contexts. In compiling the reading list, consideration has been given to the range of texts that are available internationally and a selection has been identified to complement the delivery of the material. The School of Biosciences is an international community of students and staff. Group activities e.g. in practicals, tutorials, workshops and self-study will naturally draw on the international make-up of the student body; the module teaching team includes members with international experience of teaching and research collaboration.

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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) |
| 23/01/2019 | Major | September 2019 | 1, 7, 8, 9, 13 |  |
|  |  |  |  |  |

Revised FSO Jan 2018