MODULE SPECIFICATION

Academic Year (student cohort covered by specification)	2023-24
Module Code	3169
Module Title	Novel Drug Discovery & Antimicrobial Resistance
Module Organiser(s)	Dr Nicholas Furnham
Faculty	Infectious & Tropical Diseases
FHEQ Level	Level 7
Credit Value	**CATS:** 15 **ECTS:** 7.5
HECoS Code	100265:100345 (1:1)
Term of Delivery	Term 3
Mode of Delivery	For 2023-24 this module will be delivered by predominantly face-to-face teaching modes. Where specific teaching methods (lectures, seminars, discussion groups) are noted in this module specification these will be delivered by predominantly face-to-face sessions. There will be a combination of live and interactive activities (synchronous learning) as well as recorded or self-directed study (asynchronous learning).
Mode of Study	Full-time
Language of Study	English
Pre-Requisites	Knowledge of biochemistry would be a benefit. Willingness to refresh basic background knowledge in private study as needed is essential.
Accreditation by Professional Statutory and Regulatory Body	None
Module Cap (Indicative number of students)	16 (numbers may be capped due to limitations in facilities or staffing)
Target Audience	This module is intended for biochemists, biologists, clinicians, immunologists, microbiologists, molecular biologists, parasitologists and virologists who have an interest in chemotherapy.
Module Description	This module examines the molecular, biochemical and cellular basis of the selective activity of antimicrobial drugs,

	methods to evaluate the activity of drugs and compounds and mechanisms of drug resistance. The examples to illustrate lectures and practicals are taken from the fields of antibacterial, antiprotozoal and antiviral chemotherapies.
Duration	5 weeks at 2.5 days per week
Timetabling slot	Slot E
Last Revised (e.g. year changes approved)	July 2022

Programme(s) This module is linked to the following programme(s)	**Status**
MSc Immunology of Infectious Diseases	Recommended Option
MSc Medical Microbiology	Recommended Option
MSc Medical Parasitology	Recommended Option
MSc Tropical Medicine & International Health	Recommended Option

Module Aim and Intended Learning Outcomes

Overall aim of the module
The overall module aim is to: • examine the principles of antimicrobial chemotherapy within areas of drug discovery, selective toxicity, medicinal chemistry and pharmacology and apply these to different classes of antimicrobials such as antibacterial, antiviral and antiprotozoal compounds.

Module Intended Learning Outcomes
Upon successful completion of the module a student will be able to: 1. Explain the principles of chemotherapy, selective toxicity and rational drug design; 2. Evaluate the activity and toxicity of potential antimicrobial agents *in vitro*; 3. Demonstrate knowledge and understanding of drug activity and its relation to structure; 4. Demonstrate knowledge and understanding of the mechanisms of drug action and drug resistance; 5. Demonstrate knowledge and understanding of basic pharmacokinetics and drug delivery; 6. Critically assess the scientific literature and communicate effectively.

Indicative Syllabus

Session Content
The module is expected to cover the following topics: • Principles of chemotherapy and selective toxicity; • Drug targets and mechanisms of drug action; • Drug resistance and mechanisms of drug resistance; • Methods of drug assays and development; • Drug uptake and drug delivery; • Analytical methods for pharmacology; • Laboratory practicals, including antimicrobial drug resistance.

Teaching and Learning

Notional Learning Hours

Type of Learning Time	Number of Hours	Expressed as Percentage (%)
Contact time	48	32
Directed self-study	43	29
Self-directed learning	15	10
Assessment, review and revision	44	29
Total	**150**	**100**

Student contact time refers to the tutor-mediated time allocated to teaching, provision of guidance and feedback to students. This time includes activities that take place in face-to-face contexts such as lectures, seminars, demonstrations, tutorials, supervised laboratory workshops, practical classes, project supervision as well as where tutors are available for one-to-one discussions and interaction by email.

The division of notional learning hours listed above is indicative and is designed to inform students as to the relative split between interactive and self-directed study.

Teaching and Learning Strategy
There will be a combination of online lectures, tutorials, student presentations and on-campus practical classes.

Assessment

Assessment Strategy
The assessment for this module has been designed to measure student learning against the module intended learning outcomes (ILOs) as listed above. Formative assessment methods may be used to measure students' progress. The grade for summative assessment(s) only will go towards the overall award GPA. The assessment for this module will online. Assessment will be based on the following two assessments. The grades for each will be equally weighted and combined to give an overall GPA. (1) A short multiple choice paper on the session material. (2) An oral presentation following a scientific question set in a tutorial.

Summative Assessment

Assessment Type	Assessment Length (i.e. Word Count, Length of presentation in minutes)	Weighting (%)	Intended Module Learning Outcomes Tested
Individual Presentation	10 minutes plus 5 minutes of questions	50	1-6
Timed Test (in-module test e.g. MCQ)	1 hour	50	1-5

Resitting assessment
Resits will accord with the LSHTM's Resits Policy The tasks will be 1) a multiple-choice questionnaire; and 2) an essay based on a different question to the presentation task

Resources

n/a

Teaching for Disabilities and Learning Differences

The module-specific site on Moodle gives students access to lecture notes and copies of the slides used during the lecture. Where appropriate, lectures are recorded and made available on Moodle. All materials posted on Moodle, including computer-based sessions, have been made accessible where possible.

LSHTM Moodle is accessible to the widest possible audience, regardless of specific needs or disabilities. More detail can be found in the Moodle Accessibility Statement which can also be found within the footer of the Moodle pages. All students have access to "SensusAccess" software which allows conversion of files into alternative formats.

Student Support Services can arrange learning or assessment adjustments for students where needed. Details and how to request support can be found on the LSHTM Disability Support pages.