**Module Description**

This module will provide the learner with an in-depth understanding of clinical microbiology and infection. The learner will acquire an advanced knowledge of microbial pathogenesis and control, antimicrobial resistance, emerging trends in microbial diagnostics and the role of the clinical, microbiology, laboratory in patient care.

**Learning Outcomes**

**On completion of this module the learner will/should be able to:**

1. Comprehensively explain the pathogenesis and clinical manifestations of clinically relevant pathogens.

2. Critically assess the role of the microbiology laboratory in the diagnosis, control and surveillance of infectious disease.

3. Comprehensively explain the significance of antimicrobial chemotherapy, mechanisms of resistance and the detection of resistant pathogens.

4. Critically evaluate current and emerging practices in clinical microbiology.

5. Review microbiological scientific publications and produce work to a professional standard.

**Indicative Syllabus**

1. **Pathogenesis and epidemiology of infectious disease.**
   
   Host defences, epidemiology and establishment of infectious disease in the host and the genetic control of virulence.

2. **Infection Prevention and Control**
   
   Nosocomial infection, infection control and prevention. The role of reference laboratories in the diagnosis and surveillance of clinically important pathogens. The role of national bodies such as the HPSC in monitoring and controlling infectious disease and resistance.

3. **Antimicrobial chemotherapy and Antibiotic Resistant Pathogens**
   

4. **Diagnoses of infectious Disease**
   
   Microbiological identification of clinically relevant pathogens and their products in current practice. Advances and emerging methodologies, including molecular diagnostics and whole genome sequencing, in clinical microbiology diagnostics.

**Teaching and Learning Strategy**

This is an online module. Teaching and learning strategies include lectures, including guest lectures, tutorials, the provision of reading...
material and self-directed study. Lectures will be supported by PowerPoint slides and Technology-enhanced learning tools that will be made available to students via Moodle, the online learning platform. There will be an interactive online forum which will provide the students with a platform to interact with each other and the lecturer.

**Assessment Strategy**

Ongoing continuous assessment (CA) throughout the module. CA will comprise of case studies (40%), a research led written assignment (30%) and a presentation (30%). CA will be a combination of independent and group work designed around problem-solving exercises and case studies to develop students’ research abilities and critical thinking. Students will gain experience in critical analysis, literature searches and presentations. The assessment strategy for this module may include shared assessments with other modules. The modules that are co-assessed may vary from year to year but will be designed to reduce the assessment burden on the student while ensuring that learning outcomes are achieved across the programme.

**Repeat Assessment Strategies**

Repeat assessment will be accommodated in accordance with GMIT Code of Practice No.3 for 100% continuous assessment modules. The repeat assessment type will be linked to the achievement of particular learning outcomes and will be appropriate to demonstrating achievement of these outcomes.

<table>
<thead>
<tr>
<th>Indicative Coursework and Continuous Assessment:</th>
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<tbody>
<tr>
<td><strong>Form</strong></td>
<td><strong>Title</strong></td>
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<tr>
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<td>Case Study Assessment</td>
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<tr>
<td>Assignment</td>
<td>Written assignment</td>
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<tr>
<td>Assignment</td>
<td>Presentation</td>
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**Part Time Delivery Mode Average Weekly Workload:** 2.50 Hours

<table>
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<tr>
<th>Type</th>
<th>Description</th>
<th>Location</th>
<th>Hours</th>
<th>Frequency</th>
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**Recommended Reading Book List**


**Journal Resources**

Journal of Clinical Microbiology
Journal of Medical Microbiology
International Journal of Clinical and Medical Microbiology
**Clinical Microbiology and Infection**  
**Journal of Medical Microbiology and Diagnosis**  
**Clinical Infectious Disease**  
**Emerging Infectious Diseases**  
**Antimicrobial Resistance and Infection Control**  

### Online Resources

- https://www.hpsc.ie  
- https://www.eucast.org  
- http://www.iscm.ie  
- https://www.acslm.ie  
- https://www.ibms.org  

These will be updated and revised each year. Students will be given websites/links in lectures and they are also uploaded on Moodle.

### Other Resources

- Online seminars

### Programme Membership

- GA_SCMLG_V09 202100 Master of Science in Medical Science  
- GA_SCMLG_N09 202100 Certificate in Medical Science