### Module Description

This module begins with discussion of immune cells, molecules and mediators to develop your understanding and knowledge of advanced immunological concepts. The module will focus on how immune system disorders arise in allergy, autoimmunity, immunodeficiency and transplantation, and how current and modern techniques investigate and diagnose disease. This module will explore host: pathogen interactions in infections focusing on examples of the most current global infectious diseases in humans (tuberculosis, HIV/AIDS, malaria, COVID-19). You will also learn about current immunological methods such as vaccination, and monoclonal therapeutic antibodies and how they are adapted for use in the clinical setting.

### Learning Outcomes

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

1. Review of the pathophysiology, diagnosis and treatment of hypersensitivity, autoimmunity, immunodeficiency and transplantation
2. Demonstrate critical understanding of immunological testing in disease diagnosis and developing technologies
3. Critically discuss the ways in which microorganism and the host immune response affects the pathology of global infectious diseases and how this relates to clinical symptoms.
4. Read, interpret and critically analyse primary literature on the immunology of disease
5. Evaluate and discuss strategies which modulate the immune system and their therapeutics

### Indicative Syllabus

- Advanced cellular and molecular immunology
- Immune response in infectious disease
- Global infections (tuberculosis, HIV/AIDS, COVID 19, malaria)
- Laboratory testing in clinical immunology
- Primary and secondary immunodeficiency disorders
- Autoimmunity
- Allergy
- Transplantation immunology
- Current strategies in vaccine developments and monoclonal antibody therapies

### Teaching and Learning Strategy

This module will be delivered online with a mixture of synchronous and asynchronous lectures and tutorials with contributions from guest lecturers. The teaching curriculum uses applied methods such as case studies to develop problem-based learning. Peer reviews, on-line forums, critical reflections and on-line learning technologies will be used to enhance the learning experience. Learners are expected to engage in active and independent learning.
Assessment Strategy

100% module will be in the form of continuous assessments with no final examinations. The assessment strategy is broken down as follows:
- A research based written assignment (50%)
- Topic specific assessments (20%)
- Journal article review and oral presentation (30%)
- Self and peer reviews will be employed as formative tools to support learning.

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 in line with the original assessment.

Indicative Coursework and Continuous Assessment:

<table>
<thead>
<tr>
<th>Form</th>
<th>Title</th>
<th>Percent</th>
<th>Week (Indicative)</th>
<th>Learning Outcomes</th>
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</thead>
<tbody>
<tr>
<td>Essay</td>
<td>Written assignment</td>
<td>50 %</td>
<td>End of Semester</td>
<td>2, 4, 5</td>
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<tr>
<td>Closed Book Exam</td>
<td>Topic specific assessments</td>
<td>20 %</td>
<td>Week 6</td>
<td>1, 2, 3, 4</td>
</tr>
<tr>
<td>In class exam</td>
<td>Journal article review and oral presentation</td>
<td>30 %</td>
<td>End of Semester</td>
<td>5</td>
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Part Time Delivery Mode Average Weekly Workload:

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<tr>
<th>Type</th>
<th>Description</th>
<th>Location</th>
<th>Hours</th>
<th>Frequency</th>
<th>Weekly Avg</th>
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<tbody>
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<td>Lecture</td>
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<td>2</td>
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<td>Fortnightly</td>
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</table>

Required Reading Book List


Journal Resources

- Journal of Immunology
- Autoimmunity
- Clinical & Experimental Immunology
- Journal of Clinical Immunology
- Clinical Laboratory Immunology

Online Resources

Essential of Immunology (Delves, Martin, Burton, Roitt): http://www.roitt.com/links.asp#Resources

The Immunology Link: http://www.immunologylink.com/

Immunopaedia: http://immunopaedia.org/index.php?id=4

Irish Society for Immunology: http://www.irishimmunology.ie/

Programme Membership