

BSC (HONS) MICROBIOLOGY

Programme Learning Outcomes

Programme Learning Outcomes for BSc in Microbiology (NFQ Level 8, Major Award)

On successful completion of this programme, students should be able to:

- Describe and discuss fundamental principles, processes and concepts central to the discipline of Microbiology
- Demonstrate interconnections between microorganisms, developments in the discipline of Microbiology and major societal impacts
- Discuss key structural, physiological, biochemical and molecular aspects of prokaryotes, eukaryotic microbes and viruses
- Compare and contrast microorganisms of medical and public health significance with respect to epidemiology, aetiology and control
- Explain the molecular basis of microbial infection and host immune response in both pathogenic and symbiotic interactions
- Outline the key roles and applications of microbes and microbial processes in the food, pharmaceutical and biotechnology sectors
- Propose microbial-based, technological innovations to address societal challenges, sustainable development and climate change
- Demonstrate fundamental and advanced laboratory procedures in Microbiology of relevance to research, clinical and industrial settings
- Critically assess developments in scientific research in Microbiology and compare & contrast classical and cutting edge laboratory and in silico technologies underpinning same
- Apply the scientific method of investigation and hypothesis testing, including experimental design and execution, data analysis and the presentation of written and oral reports, aligned with international disciplinary norms.