

# MENGSC IN ENGINEERING IN PHARMACEUTICAL AND BIOPHARMACEUTICAL SYSTEMS

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## Programme Learning Outcomes

Programme Learning Outcomes for MEngSc in Engineering in Pharmaceutical and Biopharmaceutical Systems, NFQ Level 9, Major Award

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

- Apply an enhanced knowledge and understanding of the mathematics, sciences, engineering sciences and technologies to pharmaceutical and biopharmaceutical engineering;
- Plan, research, execute and oversee a substantial research project, critically analyse and interpret data, and effectively disseminate the results;
- Identify, formulate, analyse and solve problems related to pharmaceutical and biopharmaceutical engineering;
- Design pharmaceutical and biopharmaceutical manufacturing facilities and processes, including unfamiliar, ill-defined scenarios, underpinned by a sustainability informed paradigm, taking account of environmental, health and safety and risk factors, and know how to apply relevant codes of practice, industry standards and emerging practices and technologies;
- Effectively design experiments and gather experimental data, apply a range of standard and specialized research tools and techniques and conduct critical evaluation of results;
- Reflect and act on social and ethical responsibilities in the practice of engineering, including the responsibilities towards developing sustainable processes and operations;
- Work effectively as an individual and in teams in planning and carrying through on assignments and projects in a lifelong learning context;
- Communicate effectively with the engineering community and with society at large.