

# FACULTY OF ENGINEERING

## DEPARTMENT OF BIOMEDICAL ENGINEERING

### MEDICAL DEVICES

#### Doctor of Engineering in Medical Devices

*For regulations relating to admissions, duration of study, examinations, progress, final assessment, award and research elements of this degree, please refer to the [General Academic Regulations - Postgraduate Research Degree Regulations](#).*

*For regulations relating to taught (compulsory/optional) modules, please refer to the [General Academic Regulations - Postgraduate Taught Degree Programme Level](#).*

#### Admission

1. Applicants shall possess:
  - i. a Master's or an Integrated Master's degree; or,
  - ii. a first or upper second class Honours degree from a United Kingdom University; or,
  - iii. other qualifications deemed, by the Head of Department (or nominees) acting on behalf of the Senate, to be equivalent to (i) or (ii) above; or,
  - iv. be deemed, by the Head of Department (or nominees) acting on behalf of the Senate, to have achieved an academic standard equivalent to (i) or (ii) or (iii) above.
2. In all cases, applicants whose first language is not English shall be required to demonstrate an appropriate level of English.
3. Applicants who satisfy the provisions of Regulation 1 may, in addition, be required to have had a period of relevant experience.
4. In all cases, applicants must submit a satisfactory research area or topic.

#### Duration of Study

5. See [General Academic Regulations - Postgraduate Research Degree Regulations](#).

#### Mode of Study

6. The programme is available by full-time study only.

#### Credit Transfer and Recognition of Prior Learning

7. As permitted by the [General Academic Regulations - Postgraduate Research Degree Regulations](#) and at the discretion of the Programme Leader, exemption from part of the programme may be granted to students submitting evidence of appropriate academic attainment or accredited prior experiential learning.

#### Curriculum

8. All students shall undertake an approved curriculum as follows:

#### Compulsory Modules

##### First Year

Module Code	Module Title	Level	Credits
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BE915	Medical Science for Engineering	5	20
MP931	Generic Biomedical and Pharmaceutical Research Skills	5	20
BE910	EngD/MSc Medical Devices Project	5	20
BE918	Professional Studies in Biomedical Engineering	5	10
BE919	Research Methodology	5	10
BE909	Biomedical Electronics	5	10
BE908	Biomedical Instrumentation	5	10
MP942	Advanced Techniques in Biomedical Research 1	5	10
BE920	The Medical Device Regulatory Process	5	10

### **Optional Modules**

No fewer than 60 credits chosen from:

<b>Module Code</b>	<b>Module Title</b>	<b>Level</b>	<b>Credits</b>
BE916	Introduction to Biomechanics	5	10
BE904	Clinical and Sports Biomechanics	5	10
BE900	Tissue Mechanics	5	10
BE906	Biomaterials and Biocompatibility	5	10
BE901	Regenerative Medicine & Tissue Engineering	5	10
BE903	Cardiovascular Devices	5	10
BE902	Prosthetics and Orthotics	5	10
BE905	Bio-signal Processing and Analysis	5	10
BE920	The Medical Device Regulatory Process	5	10
BE923	Haemodynamics for Engineers	5	10
BE924	Medical Robotics	5	10
BE925	Numerical Modelling in Biomedical Engineering	5	10
MP968	In Vivo Biology	5	10

MP979	Drug Discovery	5	10
MP977	Toxicological Analysis	5	10

- 9. Second, Third and Fourth Years** - All students shall undertake a doctoral research project. Research projects are allocated to students from an approved list prior to the start of the second year and the normal supervisory and progression requirements for doctoral awards apply (see [General Academic Regulations - Postgraduate Research Degree Regulations](#)).

#### **Examination, Progress and Final Assessment**

10. Candidates are required to pass written examinations and to perform to the satisfaction of the Board of Examiners in the taught component of the programme. In addition, students must satisfy the general regulations associated with the award of a doctoral research degree as specified in the [General Academic Regulations - Postgraduate Research Degree Regulations](#).
11. Candidates will normally be expected to attain 180 credits before being permitted to commence work on a doctoral research project.
12. Candidates who fail to satisfy the Board of Examiners in any taught module shall be permitted one further attempt to pass the relevant module(s) normally in the same academic year. The Board of Examiners will determine whether the resit should take the form of an examination or an assignment.

#### **Award**

13. **Degree of EngD:** In order to qualify for the award of the degree of EngD in Medical Devices, a candidate must have performed to the satisfaction of the Board of Examiners and must have accumulated no fewer than 180 credits from the first year of study. In addition, a student must perform satisfactorily in an oral examination based on a piece of original research submitted to the University of Strathclyde in the form of a portfolio or thesis as specified in the [General Academic Regulations - Postgraduate Research Degree Regulations](#).

#### **Transfer**

14. A candidate who fails to satisfy the progress or award requirements of the EngD may be transferred to the MSc in Medical Devices.