Programme Specification: Post Graduate Taught

For Academic Year 2026/27

1. Course Summary

Names of programme and award title(s)	MSc Medical Engineering (Biomedical Engineering) MSc Medical Engineering (Cell and Tissue Engineering for Regenerative Medicine) MSc Medical Engineering (Design & Innovation) MSc Medical Engineering (Biomedical Engineering) with Placement (see Annex for details) MSc Medical Engineering (Cell and Tissue Engineering for Regenerative Medicine) with Placement (see Annex for details) MSc Medical Engineering (Design & Innovation) with Placement (see Annex for details)
Award type	Taught Masters
Mode of study	Full-time Part-time
Framework of Higher Education Qualification (FHEQ) level of final award	Level 7
Normal length of the programme	1 year full-time or 2 years part-time Entry points: September or January 18-24 months MSc Medical Engineering with placement
Maximum period of registration	The normal length as specified above plus 3 years
Location of study	Guy Hilton Research Centre Keele Campus
Accreditation (if applicable)	Biomedical Engineering stream and Medical Engineering Design and Innovation accredited by Institute for Physics and Engineering in Medicine (IPEM)
Regulator	Office for Students (OfS)
Tuition Fees	**UK students:** Full-time fee for 2026/27 is £11,700 Part-time fee for 2026/27 is £6,400 per year* **International students:** Full-time fee for 2026/27 is £18,200

How this information might change: *Please read the important information at http://www.keele.ac.uk/student-agreement/. This explains how and why we may need to make changes to the information provided in this document and to help you understand how we will communicate with you if this happens.*

** We reserve the right to increase fees in subsequent years of study by an inflationary amount. Please refer to the accompanying Student Terms & Conditions for full details. Further information on fees can be found at http://www.keele.ac.uk/studentfunding/tuitionfees/*

2. Overview of the Programme

The Master of Science degree (MSc) in Medical Engineering provides advanced multi-disciplinary training in Biomedical Engineering (BME), Cell and Tissue Engineering for Regenerative Medicine, and Design & Innovation (D&I), in line with enhancing graduate career prospects. This involves building upon existing skills and knowledge and applying them to the above key areas, particularly to those without previous specific training.

The programme has its origins in 1999, as Postgraduate Taught provision in Medicine at the Institute of Science & Technology in Medicine (ISTM), in partnership with Biomedical Engineering and Medical Physics at the University Hospital of North Staffordshire, now named UHNM. Advances in research and the changing landscape of medicine for the 21st century has evolved the programme to include latest biological advances and wider engineering developments, and a focus on entrepreneurship, innovation and industry-relevant practical skills.

Engagement to this postgraduate programme will enable you to further develop your intellectual, personal and professional capabilities. At Keele, we call these our Graduate Attributes and they include independent thinking, synthesizing information, creative problem solving, communicating clearly, and appreciating the social, environmental and global implications of your studies and activities. Whilst participants will undoubtedly have been exposed to these skills and abilities to varying degrees, our programmes offer opportunities where they can be deepened, enriched and focused with these core principles in mind. This creates a well-rounded postgraduate who is capable of making a positive and valued contribution in a complex and rapidly changing world, whichever spheres of life they engage in during and after their studies at Keele.

Current teaching takes place between Keele University main campus, the Guy Hilton Research Centre and UHNM, and, combined with the strong clinical background and history of the departmental research, you will be exposed to a working research environment throughout the program delivery, that gives our programme a unique complementary experience of learning and research with peers during their studies.

3. Aims of the programme

The broad aims of the programme are to enable you to:

- enter professional careers in industry, academia and a wide range of healthcare establishments, such as medical organisations, medical research institutions, hospitals, regulatory bodies and other health-related organisations;
- develop in-depth research into novel specialist medical and biological engineering;
- undertake practical work in a relevant environment with hands-on knowledge of technological developments at the forefront of the field;
- introduce students to exciting new fields, such as bioengineering and novel technologies for physiological monitoring, diagnostics and implant technology.

With three specialist but complementary streams, you will have unique access to specialists in each field, as well as access to more traditional topics in medical engineering, such as: devices for physiological and functional measurement, manufacturing, medical materials, biomechanics and medical device design and applications, or, in bioengineering such as stem cell biology, biomaterials, growth environments and, disease biology and genetics.

The educational aims of the programme are designed with student satisfaction at the forefront. Within this you can expect an environment where participants are motivated to develop academically, personally, and professionally. Teaching is designed to provide a multidisciplinary perspective that encourages professional development beyond current specialities and growth into new areas. An area of particular importance to our course is training in the development of critical and evaluative thinking alongside refinement of writing and communication skills for application in individual research and team working scenarios. Through the development of these new and essential skill sets you can expect to feel comfortable transferring scientific knowledge from theory into practice and to empower life-long learning.

4. What you will learn

The intended learning outcomes of the programme (what students should know, understand and be able to do at the end of the programme), can be described under the following headings:

- Subject knowledge and understanding
- Subject specific skills
- Key or transferable skills (including employability skills)

Subject knowledge and understanding

Successful students will be able to demonstrate knowledge and understanding of:

- core engineering, physical and biological principles to solve clinically-relevant problems at the forefront of Medical Engineering.
- physiological and biological measurements and related quality management issues

- how to challenge, evaluate, modify, and develop the theory and practice surrounding Medical Engineering including social and ethical aspects.
- an understanding of statistics and its role in research methods and design quality.
- technologies in their chosen pathway and will develop towards the point where students will comfortably assist in the process of developing research projects, new devices and new solutions.
- the working principles behind the maintenance and management of medical equipment and associated safety procedures (B, D).
- the principles supporting effective medical device design (B, D).
- advanced biomedical signal processing and analysis to achieve a recognisable output (B).
- the core biological and engineering principles in regenerative medicine including stem cell, cell and gene therapies (C).
- specific in-depth regulatory and manufacturing quality techniques for new medical devices (D)

B - Biomedical Engineering stream

C - Cell and Tissue Engineering for Regenerative Medicine

D -Design and Innovation

Subject specific skills

Successful students will be able to:

- use a range of ICT tools such as spreadsheets and programming languages to interpret and analyse data, including the use of modelling and statistics;
- carry out a research project, including planning, implementation, and documentation of methods, findings and implications.
- demonstrate the critical awareness of advanced technologies in associated Medical Engineering.
- display the independent working and problem-solving capacity in the research projects alongside critical literature review and data interpretation.
- identify personal and professional requirements to support lifelong learning

Key or transferable skills (including employability skills)

Successful students will be able to:

- Demonstrate skills associated with self-management and an ability to synthesize and evaluate information obtained from diverse sources and settings.
- Develop the capacity to transfer scientific knowledge into practical application in current studies and subsequent career choice.
- Work in small groups to share best practice, provide mutual support and promote an environment of active learning.
- Demonstrate innovation and originality in the understanding and application of new knowledge.
- Demonstrate self-direction and dedication to independent learning.
- Communicate personal findings and conclusions to specialist and non-specialist listeners using a variety of methods such as verbal presentations, written documents and information technology.
- Act autonomously in implementing and managing activities

Keele Graduate attributes

The Keele Graduate Attributes are the qualities (skills, values and mindsets) which you will have the opportunity to develop during your time at Keele through both the formal curriculum and also through co- and extra-curricular activities (e.g., work experience, and engagement with the wider University community such as acting as ambassadors, volunteering, peer mentoring, student representation, membership and leadership of clubs and societies). Our Graduate Attributes consist of four themes: **academic expertise, professional skills, personal effectiveness, and social, environmental and ethical responsibility**. You will have opportunities to engage actively with the range of attributes throughout your time at Keele: through your academic studies, through self-assessing your own strengths, weaknesses, and development needs, and by setting personal development goals. You will have opportunities to discuss your progress in developing graduate attributes with, for example, Academic Mentors, to prepare for your future career and lives beyond Keele.

5. How is the programme taught?

Learning and teaching methods used on the programme vary according to the subject matter and level of the module.

Teaching is delivered primarily through seminars, group work, interactive lectures and associated web-based Virtual Learning Environment materials. These are accompanied by tutor-led tutorials, laboratory-based practical sessions, seminars by nationally and internationally known scientists or engineers or clinicians, workshops, problem-solving scenarios, dedicated research project supervision and site-visits. Reflective of postgraduate

education self-directed learning is also a major component during both full-time and part-time studies. The programme also integrates development and execution of enterprise skills. The diversity of learning and teaching methods encountered by students supports development of independent learning skills and critical thinking as well as the acquisition of subject specific knowledge, relevant to the stream.

Evaluation of learning outcomes is met through a broad range of assessments. These include, but are not limited to, coursework-based essays, reports on laboratory-based practical experiments, written examinations, interactive oral presentations, and a dissertation based on the student research project. This enables students to meet the range of intended learning outcomes covering specific principles related to the streams, and demonstration of independent research and problem solving.

Apart from these formal activities, students are also provided with regular opportunities to talk through particular areas of difficulty, and any special learning needs they may have, with their Academic Mentors or subject lecturers on a one-to-one basis.

6. Teaching Staff

Please add a statement about teaching staff on the programme

There are module leader, plus several other key staff members who have substantive teaching roles on the course. All teaching is managed and delivered by academic staff, with Doctorate-level training, as well as key clinical practitioners. Many staff members are Fellows of the Higher Education Academy, ensuring a high standard of teaching.

The University will attempt to minimise changes to our core teaching teams, however, delivery of the programme depends on having a sufficient number of staff with the relevant expertise to ensure that the programme is taught to the appropriate academic standard.

Staff turnover, for example where key members of staff leave, fall ill or go on research leave, may result in changes to the programme's content. The University will endeavour to ensure that any impact on students is limited if such changes occur.

7. What is the structure of the programme?

The academic year runs from September to September and is divided into three semesters. For January intake (students starting from Semester 2), students will proceed as per the module and assessment schedule in the respective semester. The number of weeks of teaching will vary between modules, but you can generally expect to attend scheduled teaching sessions between the end of September and mid-December, and from mid-January to the end of April. Our degree courses are organised into modules. Each module is usually a self- contained unit of study and each is usually assessed separately with the award of credits on the basis of 1 credit = 10 hours of student effort. An outline of the structure of the programme is provided in the tables below.

There are two types of module delivered as part of your programme. They are:

- Compulsory modules - a module that you are required to study on this programme;
- Pathway specific modules - these will develop pathway specific knowledge to develop your specialism.

The programme requires 180 credits for the Master's qualification. The student must gain 120 credits from taught modules which consist of two 30- credit general programme modules (60-credits total) and two pathway specific 30-credit modules (60-credits total). The Master's component is a research project assessed through a project dissertation and presentation worth 60 credits.

Knowledge in human anatomy and Physiology, as well as fundamental engineering concepts necessary for the completion of the course for those without a specific background, will be provided throughout the programme and via online virtual learning environment materials

A summary of the credit requirements is as follows:

Year	Compulsory	Optional	
		Min	Max
Level 7	120	60	60

Optional credits are according to each route.

Module Lists

Level 7

Please note, the order in which you study these semesters will depend upon whether you join the programme in September or January.

- Students joining in September on a full-time programme will study semesters 1, 2 and 3 in sequence.
- Students joining in January on a full-time programme will start the programme in semester 2, then study semester 3, finishing with semester 1.

Compulsory modules	Module Code	Credits	Period
Advanced Design, Materials and Manufacturing (Medical Engineering)	MTE-40077	30	Semester 1
Research and Enterprise (Medical Engineering)	MTE-40083	30	Semester 2
Research Project	LSC-40131	60	Semester 3

Optional modules	Module Code	Credits	Period
Regenerative Medicine and Translational Bioengineering	LSC-40157	30	Semester 1
Instrumentation and Signal Analysis	MTE-40081	30	Semester 1
Emerging Topics in Bioengineering	LSC-40159	30	Semester 2
Frontiers in Biomedical Engineering	LSC-40161	30	Semester 2
Advanced Topics in Design and Innovation	MTE-40079	30	Semester 2

Level 7 Module Rules

Students following the Biomedical Engineering Pathway must take the following modules: Instrumentation and Signal Analysis (Semester 1), Frontiers in Biomedical Engineering (Semester 2)

Students following the Cell and Tissue Engineering for Regenerative Medicine stream must take the following modules: Regenerative Medicine and Translational Bioengineering (Semester 1), Emerging Topics in Bioengineering (Semester 2).

Students following the Medical Engineering Design and Innovation stream must take the following modules: Instrumentation and Signal Analysis (Semester 1), Advanced Topics in Design & Innovation (Semester 2)

Students following the "with placement" route will also undertake NAT-40004 as described in the annex.

Part-time students will complete the following modules in their first year of study:

- Advanced Design, Materials and Manufacturing (Medical Engineering)
- A pathway specific specialist module

and the following modules in their second year of study:

- Research and Enterprise (Medical Engineering)
- A pathway specific specialist module

Part-time students will be expected to begin the preparation and data collection elements of their dissertation during semester 3 of their first year and complete the final analysis and write-up during semester 3 of their second year.

Learning Outcomes

The table below sets out what students learn in the programme and the modules in which that learning takes place. Details of how learning outcomes are assessed through these modules can be found in module

specifications.

Level 7

The table below sets out what students learn in the programme and the modules in which that learning takes place. Details of how learning outcomes are assessed through these modules can be found in module specifications.

Subject Knowledge and Understanding	
Learning Outcome	**Module in which this is delivered**
Apply core engineering and physical and biological principles to solve clinically relevant problems at the forefront of Medical Engineering	Research Project - LSC-40131 Regenerative Medicine and Translational Bioengineering - LSC-40157 Emerging Topics in Bioengineering - LSC-40159 Frontiers in Biomedical Engineering - LSC-40161 Advanced Design, Materials and Manufacturing (Medical Engineering) - MTE-40077 Advanced Topics in Design and Innovation - MTE-40079 Instrumentation and Signal Analysis - MTE-40081 MTE-40077 Advanced Design, Materials and Manufacturing (Medical Engineering); MTE-40081 Instrumentation and Signal Analysis; LSC-40161 Frontiers in Biomedical Engineering; MTE-40079 Advanced Topics in Design & Innovation; LSC-40157 Regenerative Medicine and Translational Bioengineering; LSC-40159 Emerging Topics in Bioengineering. LSC-40131 Research Project
Display a systematic understanding of physiological and biomedical measurement and related quality management issues	Regenerative Medicine and Translational Bioengineering - LSC-40157 Frontiers in Biomedical Engineering - LSC-40161 Advanced Design, Materials and Manufacturing (Medical Engineering) - MTE-40077 Advanced Topics in Design and Innovation - MTE-40079 Instrumentation and Signal Analysis - MTE-40081 MTE-40077 Advanced Design, Materials and Manufacturing (Medical Engineering); MTE-40081 Instrumentation and Signal Analysis; LSC-40161 Frontiers in Biomedical Engineering; MTE-40079 Advanced Topics in Design & Innovation; LSC-40157
Display a systematic understanding of the working principles behind the maintenance and management of medical equipment and associated safety procedures	Research Project - LSC-40131 Instrumentation and Signal Analysis - MTE-40081 MTE-40081 Instrumentation and Signal Analysis; LSC-40131Research Project

Subject Knowledge and Understanding	
Learning Outcome	**Module in which this is delivered**
Challenge, evaluate, modify, and develop the theory and practice surrounding Medical Engineering including social and ethical aspects	Research Project - LSC-40131 Regenerative Medicine and Translational Bioengineering - LSC-40157 Emerging Topics in Bioengineering - LSC-40159 Frontiers in Biomedical Engineering - LSC-40161 Advanced Design, Materials and Manufacturing (Medical Engineering) - MTE-40077 Advanced Topics in Design and Innovation - MTE-40079 Instrumentation and Signal Analysis - MTE-40081 Research and Enterprise (Medical Engineering) - MTE-40083 MTE-40077 Advanced Design, Materials and Manufacturing (Medical Engineering); MTE-40081 Instrumentation and Signal Analysis; LSC-40161 Frontiers in Biomedical Engineering; MTE-40079 Advanced Topics in Design & Innovation; LSC-40157 Regenerative Medicine and Translational Bioengineering; LSC-40159 Emerging Topics in Bioengineering. LSC-40131Research Project; MTE-40083 Research and Enterprise (Medical Engineering).
Acquire solid knowledge of the core generic principles in regenerative medicine including cell, cell-derived and gene therapies	Regenerative Medicine and Translational Bioengineering - LSC-40157 Emerging Topics in Bioengineering - LSC-40159 LSC-40157 Regenerative Medicine and Translational Bioengineering; LSC-40159 Emerging Topics in Bioengineering.
An understanding of statistics and its role in research methods and design quality	Advanced Topics in Design and Innovation - MTE-40079 Research and Enterprise (Medical Engineering) - MTE-40083 MTE-40083 Research and Enterprise (Medical Engineering); MTE-40079 Advanced Topics in Design & Innovation
Develop a critical awareness of technologies in their chosen pathway towards the point where students will comfortably assist in the process of developing research projects, new devices and new solutions	Research Project - LSC-40131 Regenerative Medicine and Translational Bioengineering - LSC-40157 Emerging Topics in Bioengineering - LSC-40159 Frontiers in Biomedical Engineering - LSC-40161 Advanced Design, Materials and Manufacturing (Medical Engineering) - MTE-40077 Advanced Topics in Design and Innovation - MTE-40079 Instrumentation and Signal Analysis - MTE-40081 MTE-40077 Advanced Design, Materials and Manufacturing (Medical Engineering); MTE-40081 Instrumentation and Signal Analysis; LSC-40161 Frontiers in Biomedical Engineering; MTE-40079 Advanced Topics in Design & Innovation; LSC-40157 Regenerative Medicine and Translational Bioengineering; LSC-40159 Emerging Topics in Bioengineering. LSC-40131Research Project
An understanding of design methodologies and modelling techniques commensurate with medical device design	Advanced Design, Materials and Manufacturing (Medical Engineering) - MTE-40077 MTE-40077 Advanced Design, Materials and Manufacturing (Medical Engineering);

Subject Knowledge and Understanding	
Learning Outcome	**Module in which this is delivered**
Develop knowledge of the generic, contextual principles supporting effective medical device design	Frontiers in Biomedical Engineering - LSC-40161 Advanced Design, Materials and Manufacturing (Medical Engineering) - MTE-40077 Advanced Topics in Design and Innovation - MTE-40079 Instrumentation and Signal Analysis - MTE-40081 MTE-40077 Advanced Design, Materials and Manufacturing (Medical Engineering); MTE-40081 Instrumentation and Signal Analysis; LSC-40161 Frontiers in Biomedical Engineering; MTE-40079 Advanced Topics in Design & Innovation
Display a systematic understanding biomedical signal processing and analysis to achieve a recognisable outputs	Frontiers in Biomedical Engineering - LSC-40161 Instrumentation and Signal Analysis - MTE-40081 MTE-40081 Instrumentation and Signal Analysis; LSC-40161 Frontiers in Biomedical Engineering;
Display a systematic understanding of regulatory and manufacturing quality techniques for new medical technologies	Research Project - LSC-40131 Regenerative Medicine and Translational Bioengineering - LSC-40157 Emerging Topics in Bioengineering - LSC-40159 Advanced Topics in Design and Innovation - MTE-40079 MTE-40077 Advanced Design, Materials and Manufacturing (Medical Engineering); MTE-40081 Instrumentation and Signal Analysis; LSC-40157 Regenerative Medicine and Translational Bioengineering; LSC-40159 Emerging Topics in Bioengineering; LSC-40131Research Project MTE-40079 Advanced Topics in Design & Innovation

Subject Specific Skills	
Learning Outcome	**Module in which this is delivered**
Use a range of ICT tools such as spreadsheets and programming languages to interpret and analyse data, including the use of modelling and statistics	Research Project - LSC-40131 Regenerative Medicine and Translational Bioengineering - LSC-40157 Emerging Topics in Bioengineering - LSC-40159 Frontiers in Biomedical Engineering - LSC-40161 Advanced Design, Materials and Manufacturing (Medical Engineering) - MTE-40077 Advanced Topics in Design and Innovation - MTE-40079 Instrumentation and Signal Analysis - MTE-40081 Research and Enterprise (Medical Engineering) - MTE-40083 MTE-40077 Advanced Design, Materials and Manufacturing (Medical Engineering); MTE-40081 Instrumentation and Signal Analysis; LSC-40161 Frontiers in Biomedical Engineering; MTE-40079 Advanced Topics in Design & Innovation; LSC-40157 Regenerative Medicine and Translational Bioengineering; LSC-40159 Emerging Topics in Bioengineering; MTE-40083 Research and Enterprise (Medical Engineering); LSC-40131Research Project
Carry out a research project, including planning, implementation, and documentation of methods, findings and implications	Research Project - LSC-40131 Research and Enterprise (Medical Engineering) - MTE-40083 MTE-40083 Research and Enterprise (Medical Engineering); LSC-40131Research Project

Subject Specific Skills	
Learning Outcome	**Module in which this is delivered**
Demonstrate the critical awareness of advanced technologies in associated Medical Engineering.	Research Project - LSC-40131 Regenerative Medicine and Translational Bioengineering - LSC-40157 Emerging Topics in Bioengineering - LSC-40159 Frontiers in Biomedical Engineering - LSC-40161 Advanced Design, Materials and Manufacturing (Medical Engineering) - MTE-40077 Advanced Topics in Design and Innovation - MTE-40079 Instrumentation and Signal Analysis - MTE-40081 Research and Enterprise (Medical Engineering) - MTE-40083 MTE-40077 Advanced Design, Materials and Manufacturing (Medical Engineering); MTE-40081 Instrumentation and Signal Analysis; LSC-40161 Frontiers in Biomedical Engineering; MTE-40079 Advanced Topics in Design & Innovation; LSC-40157 Regenerative Medicine and Translational Bioengineering; LSC-40159 Emerging Topics in Bioengineering; MTE-40083 Research and Enterprise (Medical Engineering); LSC-40131Research Project
Identify and professional requirements to support lifelong learning	Research Project - LSC-40131 Regenerative Medicine and Translational Bioengineering - LSC-40157 Emerging Topics in Bioengineering - LSC-40159 Frontiers in Biomedical Engineering - LSC-40161 Advanced Design, Materials and Manufacturing (Medical Engineering) - MTE-40077 Advanced Topics in Design and Innovation - MTE-40079 Instrumentation and Signal Analysis - MTE-40081 Research and Enterprise (Medical Engineering) - MTE-40083 MTE-40077 Advanced Design, Materials and Manufacturing (Medical Engineering); MTE-40081 Instrumentation and Signal Analysis; LSC-40161 Frontiers in Biomedical Engineering; MTE-40079 Advanced Topics in Design & Innovation; LSC-40157 Regenerative Medicine and Translational Bioengineering; LSC-40159 Emerging Topics in Bioengineering; MTE-40083 Research and Enterprise (Medical Engineering); LSC-40131Research Project

Key or Transferable Skills (graduate attributes)	
Learning Outcome	**Module in which this is delivered**

Key or Transferable Skills (graduate attributes)	
Learning Outcome	**Module in which this is delivered**
Demonstrate skills associated with self-management and an ability to synthesize and evaluate information obtained from diverse sources and settings	Research Project - LSC-40131 Regenerative Medicine and Translational Bioengineering - LSC-40157 Emerging Topics in Bioengineering - LSC-40159 Frontiers in Biomedical Engineering - LSC-40161 Advanced Design, Materials and Manufacturing (Medical Engineering) - MTE-40077 Advanced Topics in Design and Innovation - MTE-40079 Instrumentation and Signal Analysis - MTE-40081 Research and Enterprise (Medical Engineering) - MTE-40083 MTE-40077 Advanced Design, Materials and Manufacturing (Medical Engineering); MTE-40081 Instrumentation and Signal Analysis; LSC-40161 Frontiers in Biomedical Engineering; MTE-40079 Advanced Topics in Design & Innovation; LSC-40157 Regenerative Medicine and Translational Bioengineering; LSC-40159 Emerging Topics in Bioengineering; MTE-40083 Research and Enterprise (Medical Engineering); LSC-40131Research Project
Develop the capacity to transfer scientific knowledge into practical application in current and subsequent career choice	Research Project - LSC-40131 Regenerative Medicine and Translational Bioengineering - LSC-40157 Emerging Topics in Bioengineering - LSC-40159 Frontiers in Biomedical Engineering - LSC-40161 Advanced Design, Materials and Manufacturing (Medical Engineering) - MTE-40077 Advanced Topics in Design and Innovation - MTE-40079 Instrumentation and Signal Analysis - MTE-40081 Research and Enterprise (Medical Engineering) - MTE-40083 MTE-40077 Advanced Design, Materials and Manufacturing (Medical Engineering); MTE-40081 Instrumentation and Signal Analysis; LSC-40161 Frontiers in Biomedical Engineering; MTE-40079 Advanced Topics in Design & Innovation; LSC-40157 Regenerative Medicine and Translational Bioengineering; LSC-40159 Emerging Topics in Bioengineering; MTE-40083 Research and Enterprise (Medical Engineering); LSC-40131Research Project
Work in small groups to share best practice, provide mutual support and promote an environment of active learning	Regenerative Medicine and Translational Bioengineering - LSC-40157 Emerging Topics in Bioengineering - LSC-40159 Frontiers in Biomedical Engineering - LSC-40161 Advanced Design, Materials and Manufacturing (Medical Engineering) - MTE-40077 Advanced Topics in Design and Innovation - MTE-40079 Instrumentation and Signal Analysis - MTE-40081 Research and Enterprise (Medical Engineering) - MTE-40083 MTE-40077 Advanced Design, Materials and Manufacturing (Medical Engineering); MTE-40081 Instrumentation and Signal Analysis; LSC-40161 Frontiers in Biomedical Engineering; MTE-40079 Advanced Topics in Design & Innovation; LSC-40157 Regenerative Medicine and Translational Bioengineering; LSC-40159 Emerging Topics in Bioengineering; MTE-40083 Research and Enterprise (Medical Engineering);

8. Final and intermediate awards

Credits required for each level of academic award are as follows:

MSc Medical Engineering (Biomedical Engineering) **MSc Medical Engineering (Cell and Tissue Engineering for Regenerative Medicine)** **MSc Medical Engineering (Design & Innovation)**	180 credits
Postgraduate Diploma in Medical Engineering	120 credits
Postgraduate Certificate in Medical Engineering	60 credits

9. How is the Programme Assessed?

The wide variety of assessment methods used on this programme at Keele reflects the broad range of knowledge and skills that are developed as you progress through the degree programme. Teaching staff pay particular attention to specifying clear assessment criteria and providing timely, regular and constructive feedback that helps to clarify things you did not understand and helps you to improve your performance. The following list is representative of the variety of assessment methods used on your programme:

- coursework-based essays
- written examinations
- reports on laboratory-based practical's
- essay-based examination
- interactive oral presentations
- multimedia Science Communication Piece
- dissertation based on the student research project.

Marks are awarded for summative assessments designed to assess your achievement of learning outcomes. Clear marking guidelines accompany each mode of assessment where a mark of 50% or above is required to achieve a pass. Through adoption of the above assessment methods students are given an opportunity to display achievements spanning knowledge and problem-solving abilities, communication and research skills, development of practical skills, and critical thinking. You will also be assessed formatively to enable you to monitor your own progress and to assist staff in identifying and addressing any specific learning needs. Formative assessment occurs in a continuous process driven by lecturer-led discussion sessions, scenario-based learning, one-on-one mentoring, and practice presentations and posters. Feedback, including guidance on how you can improve the quality of your work, is also provided on all summative assessments within three working weeks of submission, unless there are compelling circumstances that make this impossible, and more informally in the course of tutorial and seminar discussions. Elements of peer feedback are also used in a formative way.

10. Accreditation

The Biomedical Engineering and Medical Engineering Design & Innovation routes are accredited by the Institute for Physics and Engineering in Medicine. Specific mapping against the Engineering Council Accreditation of Higher Education Programmes (AHEP) framework can be found in the Annex component of this document.

11. University Regulations

The University Regulations form the framework for learning, teaching and assessment and other aspects of the student experience. Further information about the University Regulations can be found at: http://www.keele.ac.uk/student-agreement/

If this programme has any exemptions, variations or additions to the University Regulations these will be detailed in an Annex at the end of this document titled 'Programme-specific regulations'.

12. What are the typical admission requirements for the Programme?

See the relevant course page on the website for the admission requirements relevant to this programme: https://www.keele.ac.uk/study/

We welcome applications from people with a first or second-class degree (or equivalent) in engineering (including computing), physical, chemical or life sciences (including biology, biomedical sciences and others), medicine, or professions allied to medicine. We also welcome enquiries from people with other professional qualifications acceptable to the University. For international applicants, an English language IELTS score of 6.5 or above is required.

Recognition of Prior Learning (RPL) is considered on a case-by-case basis and those interested should contact the Programme Director. The University's guidelines on this can be found here: https://www.keele.ac.uk/qa/programmesandmodules/recognitionofpriorlearning/

13. How are students supported on the programme?

Support is provided throughout the study period with a broad range of student-centred activities. Initial support is provided during the Induction Week where orientation, study skills introductions, and welcoming events are held, led by the programme, school and the university. Accompanying these events the programme handbook, which students receive via online provision, details key course information, module structure, module content, assessment formats, and relevant University regulations.

All students are allocated an Academic Mentor at the beginning of the course. This offers an individual resource for assistance with both academic and personal issues where detrimental impacts on academic outputs can develop. Students are invited to meet with Academic Mentor at least four times a year unless special needs require a greater frequency.

Students for whom English is not their first language are offered language classes, facilities and services by the University's Language Centre. In addition to credit-bearing postgraduate modules on English for academic study, students also have access to one-to-one tutorials for individual help and advice, and to a wealth of resources for self-study and practice. Incoming non-native English-speaking students take a diagnostic English language assessment during their first week at Keele, after which personalised recommendations for modules or other forms of support are made.

14. Learning Resources

This programme and teaching are based at the across main campus and the Guy Hilton Research Centre (GHRC). The administration team is based on Keele's main campus. Some teaching delivery will be held at sites in University Hospitals of North Midlands (UHNM).

Students have access to all the facilities in main campus and the UHNM Hospital campus. In particular, students have access to a Computer Room at the Guy Hilton Research Centre and extensive IT facilities on the main campus; the Health Library on the hospital campus, and the University library located on the main campus. The main library, for example, houses study spaces that can be used for group work. On-line, physical and electronic data sources area available through Keele University Library.

15. Other Learning Opportunities

Opportunities exist for research projects to be performed at other centres either by prior arrangement or through regular offerings at the Robert Jones and Agnes Hunt Hospital, Oswestry and the University Hospital of North Midlands (Royal Stoke University Hospital) in addition to those on campus and at the GHRC.

Students are encouraged to undertake a modern foreign language to support CV development. These are offered by Keele Language Centre.

16. Additional Costs

There may be optional costs that students can choose to incur to enhance their learning experience. These are not required to complete the course. Details of these optional costs are outlined below to help you plan accordingly.

Poster submission for project module - exceptional printing cost to be borne by student.

Students may also incur general expenses related to university study, such as for printing, textbooks and other materials. Students who undertake a placement may be responsible for additional costs, such as travel, accommodation, and subsistence costs. For further information, please refer to the additional costs information.

17. Quality management and enhancement

The quality and standards of learning in this programme are subject to a continuous process of monitoring, review and enhancement.

- The School Education Committee is responsible for reviewing and monitoring quality management and enhancement procedures and activities across the School.
- Individual modules and the programme as a whole are reviewed and enhanced every year in the annual programme review which takes place at the end of the academic year.
- The programmes are run in accordance with the University's Quality Assurance procedures and are subject to periodic reviews under the Revalidation process.

Student evaluation of, and feedback on, the quality of learning on every module takes place every year using a variety of different methods:

- The results of student evaluations of all modules are reported to module leaders and reviewed by the Programme Committee as part of annual programme review.
- Findings related to the programme from the annual Postgraduate Taught Experience Survey (PTES), and from regular surveys of the student experience conducted by the University, are subjected to careful analysis and a planned response at programme and School level.
- Feedback received from representatives of students in all three years of the programme is considered and acted on at regular meetings of the Student Staff Voice Committee.

The University appoints senior members of academic staff from other universities to act as external examiners on all programmes. They are responsible for:

- Approving examination questions
- Confirming all marks which contribute to a student's degree
- Reviewing and giving advice on the structure and content of the programme and assessment procedures

Information about current external examiner(s) can be found here:
http://www.keele.ac.uk/qa/externalexaminers/currentexternalexaminers/

18. The principles of programme design

The programme described in this document has been drawn up with reference to, and in accordance with the guidance set out in, the following documents:

a. UK Quality Code for Higher Education, Quality Assurance Agency for Higher Education: http://www.qaa.ac.uk/quality-code

b. QAA Subject Benchmark Statement: Engineering (2023) https://www.qaa.ac.uk/the-quality-code/subject-benchmark-statements/subject-benchmark-statement-engineering and Biosciences (2023) https://www.qaa.ac.uk/the-quality-code/subject-benchmark-statements/subject-benchmark-statement-biosciences

c. Keele University Regulations and Guidance for Students and Staff: http://www.keele.ac.uk/regulations

d. MSc Accreditation MLAF from Institute of Physics and Engineering in Medicine in accordance to AHEP4 from the Engineering Councils.

AHEP 4 Mapping

For accreditation purposes our programme modules are mapped against the Accreditation of Higher Education Programmes (AHEP) framework (fourth version) from the Engineering Council (https://www.engc.org.uk/media/3464/ahep-fourth-edition.pdf)

Compulsory modules	Module Code	Credits	AHEP4
Advanced Design, Materials and Manufacturing (Medical Engineering)	MTE-40077	30	M2, M3, M5, M7, M10 M11 M12, M13, M14, M15, M16, M17, M18,
Research and Enterprise (Medical Engineering)	MTE-40083	30	M1, M4, M7, M8, M9, M10, M11, M16, M18
Research Project	LSC-40121	60	M1, M2, M4, M5, M6, M8, M10, M13, M17, M18,

Optional modules	Module Code	Credits	AHEP4
Instrumentation and Signal Analysis	MTE-40081	30	M1, M2, M3, M6, M9, M12, M13, M15, M16, M17
Frontiers in Biomedical Engineering	LSC-40161	30	M1, M2, M3, M6, M7, M12, M17
Advanced Topics in Design & Innovation	MTE-40079	30	M1, M2, M4, M5, M6, M8, M9, M10, M12, M13, M14, M15, M16, M17, M18.

19. Annex - Placement

MSc Medical Engineering with Placement

PGT Placement Summary

Students can apply directly for the 'with Placement' degree programme, or transfer onto the 'with Placement' degree programme by the end of May or the end of October each academic year for students starting their studies in September or January, respectively.

International students can apply directly for the 'with Placement' degree programme. However, if they wish to transfer onto this programme while studying, they should discuss this with Immigration Compliance and Advice (ICA) and their Programme Director. If the transfer request can be approved in line with UK Visas and Immigration (UKVI) rules, students should be aware that a visa extension would be required.

Students accepted onto the 'with Placement' programme will complete an extra 6 - 12 months of study (the placement), depending on the duration of their placement, with a relevant placement provider after they have completed the taught component of their programme.

Admission to the Postgraduate Placement module is dependent on students i) achieving minimum academic standards and, ii) securing a placement via a competitive, employer-led selection process. The University does not guarantee placements for students who have registered for the 'with Placement' programme or for those who transfer on to the programme. All students will be provided with a detailed timeline, including deadlines, of the date by which their placement would need to be secured.

Students who successfully pass 180 credits plus the non-credit bearing Postgraduate Placement module will be awarded the degree title of 'XXXX with Placement'. Students who are unable to secure a placement, fail to satisfactorily complete their placement, or who fail the non-credit bearing Postgraduate Placement module will revert to the standard degree title of the one-year master's programme. Failure of the placement will be recorded on the student's final transcript.

Study at Level 7 will be as per the main body of this document. The additional detail contained in this annex will pertain solely to students registered for the 'with Placement' option.

Placement Programme Aims

In addition to the programme aims specified in the main body of this document, the with Placement programme aims to provide students with:

1. In-depth experience of a relevant workplace and the variety of ways in which their skills can be used in the world outside the university.
2. The opportunity to further develop their employability through skills development and reflection, enhanced organisational and sector knowledge, and networking and interpersonal communication.

Entry Requirements for the Postgraduate Placement Module

Admission to the Postgraduate Placement module is dependent on students i) achieving minimum academic standards and, ii) securing a placement via a competitive, employer-led selection process including successful application and interview. Therefore, the University cannot guarantee placements for students who have registered for the 'with placement' programme.

To be eligible to progress onto placement, students will need to have:

- Passed all of their first Semester modules (i.e., obtained an average mark of ≥ 50%). Where no Semester 1 marks have been awarded, performance on individual assessments in these modules will be considered.
- Completed an online Health and Safety training session prior to commencing their placement and will be required to satisfy the Health and Safety regulations of the company or organisation at which they are based.
- Secured a relevant placement via a competitive, employer-led selection process including successful application and interview.

Progression onto the Postgraduate Placement module is then conditional on passing all taught modules from the Spring and Autumn semesters, excluding the research project/dissertation.

Students with up to 30-credits of re-assessment awarded as first attempts owing to approved exceptional circumstances, and who otherwise meet the progression requirements, may progress onto the Postgraduate Placement module and retrieve their outstanding credits during their placement. All other students who have failed one or more modules will not be eligible to progress onto the Postgraduate Placement module. This applies even if they have assessment attempts remaining. These students will revert to the standard degree title of the one-year master's programme.

International students only:

Student Support

Students will be supported whilst on their placement via the following methods:

- Regular contact between the student and a named member of staff from the Placement and Project Managers (PPM) team who will be assigned to the student as their placement supervisor. The placement supervisor will be in regular contact with the student throughout the year and be on hand to provide advice (pastoral or academic). If the student has any academic queries whilst on placement they will be signposted to the relevant member of academic staff (i.e., Academic Mentor, Programme Director or module leader)
- Formal contact with the student during the placement. The placement supervisor will meet once with the student, and their line manager (physically / virtually) at the midway point of their placement. Additional meetings may be arranged if required.
- Placement providers will be issued with guidance on how to raise concerns about students as part of the placement approval process.

Learning Outcomes

In addition to the learning outcomes specified in the main text of the Programme Specification, students who complete the 'with Placement programme will be able to:

1. Understand and discuss the variety of ways in which skills developed during their study can be deployed in non-academic contexts.
2. Develop broader organisational/sector understanding and reflect upon their activities in this context.
3. Assess their own strengths and weaknesses in an employment context.
4. Articulate their placement skills and experiences effectively and through a variety of means (verbal and written)

These learning outcomes will be assessed through the non-credit bearing Postgraduate Placement module which provides a structure to ensure that students make the most of the placement as an integrated learning experience. Students will complete an initial skills audit and placement plan when they begin their placement and submit a final placement portfolio which includes a reflective diary completed during placement.

Regulations

Students registered for the 'with Placement' programme are subject to programme-specific regulations (if any) and the University regulations. In addition, during the placement, the following regulations will apply:

- Students undertaking the 'with Placement' programme must successfully complete the zero-credit rated module 'Postgraduate Placement'.
- In order to ensure a high-quality placement experience, each placement provider will sign a tripartite learning agreement (analogous to a service level agreement), and a health and safety checklist.
- Once a student has been accepted by a placement organisation, the student will submit a placement proposal and will be assigned a placement supervisor (from the PPM team). The placement supervisor will be responsible for ensuring that the placement experience meets the required criteria, the placement organisation meets all health and safety expectations, and a tripartite learning agreement is signed by all parties.
- The placement student will also sign up to an agreement outlining their responsibilities in relation to the requirements of each organisation.

Students will be expected to behave professionally in terms of:

(i) conforming to the work practices of the organisation; and

(ii) remembering that they are representatives of the University and their actions will reflect on the University and have an impact on that organisation's willingness (or otherwise) to remain engaged with the placement.

Additional costs for the Placement

Tuition fees for students on the 'with Placement' programme will be charged at 20% of the standard Undergraduate annual tuition fees for that year of study, as set out in Section 1.

Students will be responsible for meeting the costs of travelling to and from their placement provider, accommodation, food and personal costs. Depending on the placement provider additional costs may include parking permits, travel and transport, suitable clothing, DBS checks, and compulsory health checks.

A small stipend may be available to students from the placement provider during the placement, but this will need to be explored on a placement-by-placement basis as some organisations, such as charities, may not have any extra money available. Students should budget with the assumption that their placement will be unpaid.

Eligibility for student finance will depend on the type of placement and whether it is paid or not. Students are required to confirm eligibility with their student finance provider. As part of the placement approval process, all students will be referred to the Student Financial Support team for advice and guidance regarding scholarships, bursaries and access to additional funding.

International students who require a visa should check with the Immigration Compliance team prior to commencing any type of paid placement to ensure that they are not contravening their visa requirements.

Version History

This document

Date Approved: 10 June 2026

Previous documents

Version No	Year	Owner	Date Approved	Summary of and rationale for changes
1	2025/26	NICK WRAGG	04 July 2025	
1	2024/25	VINOJ GEORGE	17 January 2025	Minor modifications - To include restructure, now under the School of Life Sciences - To include a new optional module LSC-40133 Cancer Bioengineering and associated change for inclusion in different sections (sections B19, C3, C9, E3)