Programme Specification: Undergraduate

For students starting in Academic Year 2024/25

1. Course Summary

Names of programme and award title(s)	BSc (Hons) Bioengineering (Regenerative Medicine) BSc (Hons) Bioengineering (Regenerative Medicine) with International Year BSc (Hons) Bioengineering (Regenerative Medicine) with Work Placement Year
Award type	Single Honours
Mode of study	Full-time
Framework of Higher Education Qualification (FHEQ) level of final award	Level 6
Normal length of the programme	3 years; 4 years with either the International Year or Placement Year between years 2 and 3
Maximum period of registration	The normal length as specified above plus 3 years
Location of study	Guy Hilton Research Centre Hospital - Medical Keele Campus
Accreditation (if applicable)	Not applicable.
Regulator	Office for Students (OfS)
Tuition Fees	**UK students:** Fee for 2024/25 is £9,250* **International students:** Fee for 2024/25 is £20,700** The fee for the international year abroad is calculated at 15% of the standard year fee. The fee for the work placement year is calculated at 20% of the standard year fee.

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.*

* These fees are regulated by Government. We reserve the right to increase fees in subsequent years of study in response to changes in government policy and/or changes to the law. If permitted by such change in policy or law, we may increase your fees by an inflationary amount or such other measure as required by government policy or the law. Please refer to the accompanying Student Terms & Conditions. Further information on fees can be found
at http://www.keele.ac.uk/studentfunding/tuitionfees/

** 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. What is a Single Honours programme?

The Single Honours programme described in this document allows you to focus more or less exclusively on this subject. In keeping with Keele's commitment to breadth in the curriculum, the programme also gives you the opportunity to take some modules in other disciplines and in modern foreign languages as part of a 360-credit Honours degree. Thus it enables you to gain, and be able to demonstrate, a distinctive range of graduate attributes.

3. Overview of the Programme

BSc (Hons) Bioengineering (Regenerative Medicine) is an innovative undergraduate programme and will be the first of its kind that fully focuses on cell and tissue engineering in the UK. The programme aims to attract aspiring bioengineers to Keele creating a specialised workforce that will respond to the future demands for regenerative drugs. The programme will equip students with a transdisciplinary biomedical know-how, laboratory skills and lexicon that will allow them to work on research, discovery and production of regenerative medicines.

Key innovative elements of this programme include: novel modules in stem cell biology, tissue engineering and regenerative medicine in Year 2 and 3 to meet the career aspirations of students, year-long laboratory series in Year 1 and 2 to ensure students acquire appropriate laboratory skills, an intensive 12 week research project in Year 3 to provide a real laboratory experience for students and the availability of elective opportunities in multiple subjects, including modern languages, and optional credits in computer science across the three years. An optional international or placement year will be available and preliminary discussions and agreements to facilitate this are in place (University of Napoli and the Centre for Regenerative Medicine in Barcelona).

BSc (Hons) Bioengineering (Regenerative Medicine) is a single honours degree that will educate students in fundamentals of the biological processes essential to understand the fine relation between stem cells and differentiation, cells and the extracellular environment, tissue structure and function and to explore the critical challenges of cell, tissue and organ regeneration.

Over the course of the programme, students will choose 285 credits of core disciplines of which 105 credits in Year 1 will be needed to create a solid foundation in biomedical disciplines and research based skills. This foundation will equip students with the skills needed to complete the remaining 180 core credits related to the rapidly growing interdisciplinary field of cell and tissue engineering and regenerative medicine. The core modules in Year 2 and Year 3 will cover fundamental aspects of stem cell biology, tissue engineering, immunoengineering, drug delivery, and nanotechnology and introduce students to innovative approaches to treatment and diagnosis that take into consideration genetic variations of a patient, environment and lifestyle. An intensive 12-week research project in semester 1 followed by data analysis in semester 2 of Year 3 will allow students to gain hands-on experience applying this knowledge to open questions in human health and novel cell and tissue engineering technologies. These experimental projects will be delivered in the state-of-the art research facilities of the Guy Hilton Research Institute and Robert Jones and Agnes Hunt (RJAH) Orthopaedic Hospital in Oswestry.

The programme also includes laboratory/computer-based modules that will equip students with biomedical and biotechnology skills enabling them to experience the discovery potentials of high-throughput sequencing, bioreactor, genetic engineering and genome editing technologies; cutting-edge tools that are assisting in the significant acceleration of the biological research and transformation of medicine. Students will be also able to enrich their training by opting for a maximum of 75 optional credits during the course of the programme. These modules will give the opportunity to extend their knowledge in cell biology and associated disciplines or experience data mining and visualisation of scientific data, improving their formative and professional experience.

To strengthen the Keele educative vision of making connections between traditionally separate subjects, the programme will enhance the student experience with elective credits to be chosen across the three years of study in multiple subjects including international modern languages. For example, students will be able to choose between the languages courses available at the Keele Language Centre (https://www.keele.ac.uk/study/languagecentre/); if 45 credits of language learning as part of your programme is achieved, an additional recognition will be added on the degree, "with competency in [Chosen Language]" or "with advanced competency in [Chosen Language]", depending on the level which you achieve.

To support students to select the right elective or optional modules, an academic tutor in the School will work with students to guide them in their choice and ensure relevance of the choice toward the degree or their professional interest.

4. Aims of the programme

The Bioengineering (Regenerative Medicine) discipline integrates biochemical, molecular and cellular knowledge with engineering principles to design tissue engineered constructs to repair, replace and rejuvenate damaged or diseased tissues. While Cell Engineering looks at cell-related phenomena, tissue engineering covers a broad range of applications ranging from physiology to nanotechnology, from biochemistry to mechanobiology, placing more emphasis on the design of biocompatible scaffolds that promote desirable cell behaviour leading to replacement and remodelling of a whole tissue.

The broad aims of the BSc (Hons) Bioengineering (Regenerative Medicine) programme are to enable you to:

- develop a broad knowledge of molecular techniques and their applications to identify solutions for biological and medical problems.
- understand the critical potential of stem cells and reprogrammed pluripotent stem cells as pivotal source for engineered replacement of damaged tissues and cell therapies.
- learn the structural and mechanical properties of tissue to design proper biocompatible materials that make possible the construction of engineered scaffolds for cells.
- acquire a range of graduate skills related to the research and commercial development of cell and tissue engineering products that should facilitate your postgraduate career.

5. 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 - (K)
- Subject specific skills - (S)
- Key or transferable skills (including employability skills) - (E)
- Intellectual skills - (I)

Subject knowledge and understanding (K)

Successful students will be able to:

- K1 - describe the biochemical and molecular functions of cells and extracellular mileaux;
- K2 - develop an understanding of the gross embryological, anatomical and physiological characteristics of the main systems of the human body;
- K3 - understand the sources and features of different types of human stem cells;
- K4 - evaluate the strategies to use stem cells as disease models and therapeutic tools;
- K5 - describe the physico-chemical properties of different biomaterials and nanomaterials that support tissue/organ growth, implantation and drug delivery;
- K6 - demonstrate familiarity with the concepts of genetic and genome engineering;
- K7 - discuss the concept of genomic medicine;

Subject specific skills (S)

Successful students will be able to:

- S1 - manage their own learning and utilise appropriate resources to the discipline;
- S2 - work safely and effectively in a scientific laboratory;
- S3 - collect, analyse and critically discuss scientific data relevant to the discipline;
- S4 - communicate confidently on topics related to the degree;
- S5 - understand the limits and ethical issues of the discipline and the need for codes of practice;

Key or transferable skills (including employability skills) (E)

Successful students will be able to:

- E1 - Effectively participate and work as a team or professional group.
- E2 - Constructively use feedback and take evidence-informed decisions.
- E3 - Identify and manage appropriate resources to solve problems.
- E4 - Confidently communicate information, ideas, problems and solutions to peers or professionals of the field of practice.

Intellectual skills (I)

Successful students will be able to:

- I1 - Think independently and inventively by demonstrating understanding of recent advances in the area of practice.
- I2 - Construct complex arguments to assert positions and solve problems with original approaches.
- I3 - Critically consider aspects of contrasting theories in the area of practice and take intellectual risks.
- I4 - Gather and evaluate information, data, assumptions to make reasoned decisions and formulate innovative solutions.

The 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 and ethical awareness.** 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.

6. How is the programme taught?

The School of Pharmacy and Bioengineering is a nationally recognised leader for the innovative blended approach to teaching and learning that brings together three main teaching activities: synchronous classroom - based (face-to-face or online) experience; online learning materials and independent study using learning materials provided by the teacher to strengthen knowledge and develop skills. The School has developed spiral curriculum that used multiple forms of active learning including flipped-classrooms , audience response systems and technology enhanced learning complemented with authentic assessments and synoptic group tasks.

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

- traditional **lectures**, **workshops**, science and computer **laboratories** (individual or in group), **problem-based learning activities**, **journal clubs**, **virtual sessions**.
- **seminars** by scientists, clinicians or industry experts that are nationally and internationally recognised experts of the field.
- a **research project** that will be supervised by an academic of the School of Pharmacy and Bioengineering and expose the student to active research.

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 module lecturers on a one-to-one basis.

These learning and teaching methods enable students to achieve the learning outcomes of the programme in a variety of ways. For example:

- **Lectures, workshops** and **virtual sessions** expose students to the principles of Cell and Tissue Engineering and its related disciplines and give the opportunity to students to present their own ideas, discussing them with academics and their fellow students.
- **Seminars, presentations** and **journal clubs** allow students to gain knowledge from the most recent discoveries in Cell and Tissue Engineering and ask questions about the subjects to experts of the field.
- **Problem Based Learning** sessions encourage students to critically consider the important challenges that scientists are facing in the field of Cell and Tissue Engineering to bring to the clinics novel experimental engineered tools.
- **Laboratory sessions** test practical skills, team working, organisational skills, initiative and expose students to some of the most used techniques relevant to biomedical discipline and Cell and Tissue Engineering.
- **Research Projects** help students to gain research experience by joining one of the research active laboratories of the School of Pharmacy and Bioengineering.

7. Teaching Staff

The programme of Bioengineering (Regenerative Medicine) has brought together pharmacists, bioengineers, scientists and physicians to develop this research-led educative programme that will instruct students in the multiple aspects of translational medicine and bioengineering. The School will provide an outstanding and inspiring environment for students, connecting them with research active academics that have world-leading expertise in the field of Cell and Tissue Engineering.

The academic staff contributing to the programme will include lecturers, senior lecturers and professors from multiple fields of expertise ranging from molecular biology to regenerative medicine with extensive expertise in teaching undergraduate and postgraduate academic programmes. The staff group, who serves on the programme, conducts highly interdisciplinary world-leading research on subjects related to the field of Bioengineering [Regenerative Medicine], publishing in well recognized international scientific journals. Many of our staff sit on international and national committees, highlighting the recognition of our work at the highest level.

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.

8. What is the structure of the Programme?

The academic year runs from September to June and is divided into two semesters. The number of weeks of teaching will vary from programme to programme, 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 course;
- Optional modules - these allow you some limited choice of what to study from a list of modules.

Optional modules include Global Challenge Pathways - a choice of modules from different subject areas that count towards the overall credit requirement but not the number of subject-related credits.

Global Challenge Pathways can either be taken as one 15-credit module at Levels 4, 5 and 6, or one 15-credit module at Levels 5 and 6 (except for the TESOL pathway). **Information about Global Challenge Pathways can be found after the module lists for Level 6.**

Language modules

Students on this programme will also be able to study language modules offered by the Language Centre, as part of a Global Challenge Pathway. You can enrol on either a Modern Language module [more information available at this link] (Semester 1 only) Teaching English to Speakers of Other Languages (TESOL) (Semesters 1 and 2) module (ENL-10053), or the Intercultural Explorer pathway (ENL-10057). See the Global Challenges Pathway information under the module lists for more details.

If you choose the Language Specialist pathway, you will automatically be enrolled on a Semester 2 Modern Language module as a continuation of your language of choice (NB: in year 1, this is a faculty funded 'additional' module). Undertaking a Modern Languages module in Semester 2 is compulsory if you wish to continue to the Language Specialist Global Challenge Pathway the following academic year.

___

For further information on the content of modules currently offered, please visit:
https://www.keele.ac.uk/recordsandexams/modulecatalogue/

A summary of the credit requirements per year is as follows.

Year	Compulsory	Optional	
		Min	Max
Level 4	105	15	15
Level 5	90	30	30
Level 6	75	45	45

Module Lists

Level 4

Compulsory modules	Module Code	Credits	Period
Molecular Biology and Genetics	PHA-10026	30	Semester 1-2
Human Anatomy and Physiology	PHA-10028	30	Semester 1-2
Biochemistry & Cell Biology	PHA-10030	30	Semester 1-2
Skills in Bioengineering	PHA-10042	15	Semester 1-2

Optional modules	Module Code	Credits	Period
Introduction to Data Science I	CSC-10058	15	Semester 1

Level 4 Module Rules

Introduction to Data Science I is a prerequisite to select Visualisation in Data Science at Level 5. No other prerequisites or restrictions apply to the selection of other modules for the Level 4 students of the programme.

NB: Global Challenge Pathways (GCPs) - students have the option of taking a Global Challenge Pathway, which can either be taken as one 15-credit module at Levels 4, 5 and 6, or one 15-credit module at Levels 5 and 6 (except for the TESOL pathway). Information on GCPs is shown under the Level 6 modules below.

Level 5

Compulsory modules	Module Code	Credits	Period
Stem Cells and Regenerative Medicine	PHA-20026	30	Semester 1
Molecular Biotechnology	PHA-20028	15	Semester 1
Immunology & Immunotherapy	PHA-20020	15	Semester 2
Biomaterials and Tissue Engineering	PHA-20024	30	Semester 2

Optional modules	Module Code	Credits	Period
Visualisation for Data Science	CSC-20069	15	Semester 1
Advanced Cell Biology	PHA-20036	15	Semester 1
Current Topics in Regenerative Medicine	PHA-20022	15	Semester 1-2

Level 5 Module Rules

CSC-20069 can be chosen only by students that have completed the Intro to Data Science I module at Level 4.

Level 6

Compulsory modules	Module Code	Credits	Period
Translational Regenerative Medicine	PHA-30031	15	Semester 1
Cell and Tissue Engineering Research Project	PHA-30035	30	Semester 1-2
Nanomedicine	PHA-30037	15	Semester 2
Precision Medicine	PHA-30063	15	Semester 2

Optional modules	Module Code	Credits	Period
Biomedical Engineering	LSC-30055	15	Semester 1
Oncology I	PHA-30055	15	Semester 1
Oncology II	PHA-30059	15	Semester 1

Global Challenge Pathways (GCPs)

Students have the option of taking a Global Challenge Pathway, which includes one 15-credit module at Levels 4, 5 and 6, or one 15-credit module at Levels 5 and 6. Students who started a Global Challenge Pathway at Level 4 will continue with the same pathway at Level 5. Students joining Global Challenge Pathways at Level 5 can join any pathway (except TESOL). Students at Level 6 will continue with the same Global Challenge Pathway they studied at Levels 4 and/or Level 5.

Global Challenge Pathways offer students the chance to fulfil an exciting, engaging route of interdisciplinary study. Choosing a pathway, students will be presented with a global issue or 'challenge' which directly relates to societal issues, needs and debates. They will be invited to take part in academic and external facing projects which address these issues, within an interdisciplinary community of students and staff. Students completing a Global Challenge Pathway will receive recognition on their degree certificate.

Digital Futures	The Digital Futures pathway offers you the opportunity to take an active role in current debates, cutting-edge research, and projects with external partners, addressing both the exciting potential and the challenges of disruptive digital transformation across all spheres of life. Part of a diverse and interdisciplinary pathway community, you will engage in exciting, impactful collaborative project work in innovative formats on areas that matter most to you. Engaged in real-world scenarios as digital citizens, you will expand, deepen, and mobilise knowledge and skills to drive inclusive, empowering, and sustainable change at local and global levels. **Level 4 Module**: **A digital life: challenges and opportunities (GCP-10005)** **Level 5 Module: Digital World - People, Spaces, and Data (GCP-20005)** **Level 6 Module: Digital Citizenship and Sustainable Futures (GCP-30005)**

Climate Change & Sustainability	Through the Climate Change & Sustainability pathway you will develop the skills, understanding and drive to become agents of change to tackle climate change and wider sustainability challenges. You will hear from international partners to learn about climate change and sustainability in different international contexts; lead your own projects to drive real change in your communities; and be part of educating and supporting others to help achieve a more sustainable future. **Level 4 Module: Climate Change and Sustainable Futures: Global Perspectives (GCP-10009)** **Level 5 Module: Climate Change and Sustainability: Action and Activism (GCP-20009)** **Level 6 Module: Skills for Sustainability (GCP-30009)**
Social Justice	The Social Justice pathway is based upon a transformative methodology which centres the student's role as 'agents of change' to reflect upon decolonising and feminist, perspectives on social justice, to forge critical outputs to transform the Sustainable Development Goals. You will develop research and engagement skills with local, national, and international partners from Universities, NGOs, International Human Rights frameworks. You will engage with key societal challenges focused upon the Sustainable Development Goals, to develop an intersectional response from identity-based perspectives on race, gender, sexualities and disabilities. The pathway will allow you to monitor and critically evaluate policies and human rights treaties, and produce and disseminate digitally fluent, international and sustainable project findings. **Level 4 Module**: **Reflections on Social Injustices, Past and Present (GCP-10003)** **Level 5 Module: Strategic Interventions for Social Justice (GCP-20003)** **Level 6 Module: Transforming Social Justice; Global Perspectives (GCP-30003)**
Enterprise & the Future of Work	In order to meet the challenges set out in the UN's Sustainable Development Goals we need to understand the power of enterprise and prepare for the future contexts of work, creativity and disruption. By providing you with the skills, knowledge and understanding of global challenges this pathway will prepare you to be part of future-facing solutions. This module will support you in developing creative, original thinking, allowing you to collaborate on projects that persuade and effect change, setting you up to thrive in future environments of work and innovation. **Level 4 Module: Enterprise and the Future of Work (GCP-10007)** **Level 5 Module: Enterprise and the Future of Work: Collaborate to Innovate (GCP-20007)** **Level 6 Module: Enterprise and the Future of Work: Designing Change (GCP-30007)**

Global Health Challenges	By taking the global health challenge pathway you will develop solutions to improve the health and quality of life for particular people and communities, engaging with these groups to co-design interventions. This pathway will provide you with skills that go beyond a focus on health and will allow you to develop your ability to work in a team and lead change in society. The knowledge, skills and work experience will complement your core degree and enhance your career opportunities and graduate aspirations. **Level 4 Module: Key concepts and challenges in global health (GCP-10001)** **Level 5 Module: Using Evidence to Improve Global Health (GCP-20001)** **Level 6 Module: Working to Improve Global Health (GCP-30001)**
Languages & Intercultural Awareness	Communication within and across cultures is inseparable from language, and development of intercultural awareness can enable you to actively contribute to the shaping of an international future. The Language and Intercultural Awareness pathway allows you to engage in genuine interdisciplinary and international exchange and to understand and explore the link between language, culture and communication. Each of the strands we offer provides you with skills and direct experience for active engagement in working to face global challenges. **The Language Specialist**: Become a specialist in one of our languages and graduate with a degree title that includes '... with competency in (Language)' or '... with advanced competency in (Language)'. **The Language Taster:** Explore a new language every year. **The Certificate in TESOL** (Teaching English to Speakers of Other Languages): **(NB: only available if starting from Level 4)** Enhance your undergraduate degree by studying the Trinity College Certificate in Teaching English to Speakers of Other Languages (TESOL). As an internationally recognised qualification, you can teach around the world, enabling you to travel whilst helping people develop their English Language Skills. You will also develop many transferable skills which will enhance your future employability. **The Intercultural Explorer:** Through an interdisciplinary understanding of intercultural communication - as both an academic discipline and as a tool to promote and engage in global activity, you will explore the concept of culture. Module content and assessments allow you to examine in-depth the role of both culture and language in, for example, the UN sustainability goals. **Modules available:** **The Language Specialist:** Any Semester 1 Language Module (the level at which you enter will be determined by your previous language learning experiences). **The Language Taster:** Any Semester 1 Language Module (the level at which you enter will be determined by your previous language learning experiences) **The Certificate in TESOL (NB: only available if starting from Level 4):** ENL-10053 TESOL 1 ENL-20007 TESOL 2 ENL-30009 TESOL 3 **The Intercultural Explorer:** ENL-10057 The stories we live by ENL-20009 Who do you think you are?

Information on Global Challenge Pathways can be found here:
https://www.keele.ac.uk/study/undergraduate/globalchallengepathways/

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 4

Subject Knowledge and Understanding	
Learning Outcome	**Module in which this is delivered**
K1 - describe the biochemical and molecular functions of cells and extracellular mileaux.	Molecular Biology and Genetics - PHA-10026 Biochemistry & Cell Biology - PHA-10030
K2 - understanding the gross embryological, anatomical and physiological characteristics of themain systems of the human body.	Human Anatomy and Physiology - PHA-10028

Subject Specific Skills	
Learning Outcome	**Module in which this is delivered**
S1 - manage their own learning and utilise resources appropriate to the discipline to solve problems.	Biochemistry & Cell Biology - PHA-10030 Human Anatomy and Physiology - PHA-10028 Molecular Biology and Genetics - PHA-10026 Skills in Bioengineering - PHA-10042
S2 - work safely and effectively in a scientific laboratory.	Biochemistry & Cell Biology - PHA-10030 Skills in Bioengineering - PHA-10042 Human Anatomy and Physiology - PHA-10028 Molecular Biology and Genetics - PHA-10026
S3 - collect, analyse and critically discuss scientific data relevant to the discipline.	Skills in Bioengineering - PHA-10042 Molecular Biology and Genetics - PHA-10026 Biochemistry & Cell Biology - PHA-10030 Human Anatomy and Physiology - PHA-10028
S4 - communicate confidently on topics related to the degree.	Skills in Bioengineering - PHA-10042 Human Anatomy and Physiology - PHA-10028 Molecular Biology and Genetics - PHA-10026 Biochemistry & Cell Biology - PHA-10030

Intellectual skills	
Learning Outcome	**Module in which this is delivered**
I1 - Think independently and inventively by demonstrating understanding of recent advances in the area of practice.	Skills in Bioengineering - PHA-10042 Molecular Biology and Genetics - PHA-10026 Human Anatomy and Physiology - PHA-10028 Biochemistry & Cell Biology - PHA-10030
I2 - Construct complex arguments to assert positions and solve problems with original approaches.	Molecular Biology and Genetics - PHA-10026 Biochemistry & Cell Biology - PHA-10030 Skills in Bioengineering - PHA-10042
I4 - Gather and evaluate information, data, assumptions to make reasoned decisions and formulate innovative solutions.	Skills in Bioengineering - PHA-10042 Biochemistry & Cell Biology - PHA-10030 Molecular Biology and Genetics - PHA-10026 Human Anatomy and Physiology - PHA-10028

Key or Transferable Skills (graduate attributes)	
Learning Outcome	**Module in which this is delivered**
E1 - Effectively participate and work as a team or professional group.	Skills in Bioengineering - PHA-10042 Biochemistry & Cell Biology - PHA-10030 Human Anatomy and Physiology - PHA-10028 Molecular Biology and Genetics - PHA-10026
E2 - Constructively use feedback and take evidence-informed decisions.	Skills in Bioengineering - PHA-10042 Molecular Biology and Genetics - PHA-10026 Human Anatomy and Physiology - PHA-10028 Biochemistry & Cell Biology - PHA-10030
E3 - Identify and manage appropriate resources to solve problems.	Biochemistry & Cell Biology - PHA-10030 Molecular Biology and Genetics - PHA-10026 Skills in Bioengineering - PHA-10042
E4 - Confidently communicate information, ideas, problems and solutions to peers or professionals of the field of practice.	Skills in Bioengineering - PHA-10042 Biochemistry & Cell Biology - PHA-10030 Human Anatomy and Physiology - PHA-10028 Molecular Biology and Genetics - PHA-10026

Level 5

Subject Knowledge and Understanding	
Learning Outcome	**Module in which this is delivered**
K1 - describe the biochemical and molecular functions of cells and extracellular mileaux.	Stem Cells and Regenerative Medicine - PHA-20026 Advanced Cell Biology - PHA-20036 Biomaterials and Tissue Engineering - PHA-20024 Immunology & Immunotherapy - PHA-20020 Current Topics in Regenerative Medicine - PHA-20022
K2 - understanding the gross embryological, anatomical and physiological characteristics of the main systems of the human body.	Advanced Cell Biology - PHA-20036 Biomaterials and Tissue Engineering - PHA-20024 Current Topics in Regenerative Medicine - PHA-20022
K3 - understand the sources and features of different types of human stem cells.	Biomaterials and Tissue Engineering - PHA-20024 Advanced Cell Biology - PHA-20036 Current Topics in Regenerative Medicine - PHA-20022 Stem Cells and Regenerative Medicine - PHA-20026
K4 - evaluate the strategies to use stem cells as disease models and therapeutic tools.	Current Topics in Regenerative Medicine - PHA-20022 Biomaterials and Tissue Engineering - PHA-20024 Stem Cells and Regenerative Medicine - PHA-20026 Immunology & Immunotherapy - PHA-20020
K5 - describe the physico-chemical properties of different biomaterials and nanomaterials that support tissue/organ growth, implantation and drug delivery.	Current Topics in Regenerative Medicine - PHA-20022 Biomaterials and Tissue Engineering - PHA-20024
K6 - familiarise with the concepts of genetic and genome engineering.	Molecular Biotechnology - PHA-20028 Advanced Cell Biology - PHA-20036 Current Topics in Regenerative Medicine - PHA-20022 Stem Cells and Regenerative Medicine - PHA-20026 Immunology & Immunotherapy - PHA-20020

Subject Specific Skills	
Learning Outcome	**Module in which this is delivered**
S1 - manage their own learning and utilise resources appropriate to the discipline to solve problems;	Stem Cells and Regenerative Medicine - PHA-20026 Molecular Biotechnology - PHA-20028 Current Topics in Regenerative Medicine - PHA-20022 Immunology & Immunotherapy - PHA-20020 Biomaterials and Tissue Engineering - PHA-20024
S2 - work safely and effectively in a scientific laboratory;	Advanced Cell Biology - PHA-20036 Molecular Biotechnology - PHA-20028 Biomaterials and Tissue Engineering - PHA-20024 Immunology & Immunotherapy - PHA-20020 Stem Cells and Regenerative Medicine - PHA-20026
S3 - collect, analyse and critically discuss scientific data relevant to the discipline;	Advanced Cell Biology - PHA-20036 Immunology & Immunotherapy - PHA-20020 Biomaterials and Tissue Engineering - PHA-20024 Molecular Biotechnology - PHA-20028 Stem Cells and Regenerative Medicine - PHA-20026
S4 - communicate confidently on topics related to the degree;	Immunology & Immunotherapy - PHA-20020 Current Topics in Regenerative Medicine - PHA-20022 Advanced Cell Biology - PHA-20036 Biomaterials and Tissue Engineering - PHA-20024 Stem Cells and Regenerative Medicine - PHA-20026 Molecular Biotechnology - PHA-20028
S5 - understand the limits and ethical issues of the discipline and the need of code of practice;	Immunology & Immunotherapy - PHA-20020 Current Topics in Regenerative Medicine - PHA-20022 Molecular Biotechnology - PHA-20028 Stem Cells and Regenerative Medicine - PHA-20026

Intellectual skills	
Learning Outcome	**Module in which this is delivered**
I1 - Think independently and inventively by demonstrating understanding of recent advances in the area of practice.	Current Topics in Regenerative Medicine - PHA-20022 Molecular Biotechnology - PHA-20028 Stem Cells and Regenerative Medicine - PHA-20026 Advanced Cell Biology - PHA-20036 Biomaterials and Tissue Engineering - PHA-20024 Immunology & Immunotherapy - PHA-20020
I2 - Construct complex arguments to assert positions and solve problems with original approaches.	Stem Cells and Regenerative Medicine - PHA-20026 Molecular Biotechnology - PHA-20028 Immunology & Immunotherapy - PHA-20020 Biomaterials and Tissue Engineering - PHA-20024 Advanced Cell Biology - PHA-20036
I3 - Critically consider aspects of contrasting theories in the area of practice and take intellectual risks.	Stem Cells and Regenerative Medicine - PHA-20026 Immunology & Immunotherapy - PHA-20020 Advanced Cell Biology - PHA-20036 Biomaterials and Tissue Engineering - PHA-20024 Molecular Biotechnology - PHA-20028
I4 - Gather and evaluate information, data, assumptions to make reasoned decisions and formulate innovative solutions.	Advanced Cell Biology - PHA-20036 Immunology & Immunotherapy - PHA-20020 Current Topics in Regenerative Medicine - PHA-20022 Molecular Biotechnology - PHA-20028 Biomaterials and Tissue Engineering - PHA-20024 Stem Cells and Regenerative Medicine - PHA-20026

Key or Transferable Skills (graduate attributes)	
Learning Outcome	**Module in which this is delivered**
E1 - Effectively participate and work as a team or professional group.	Current Topics in Regenerative Medicine - PHA-20022 Advanced Cell Biology - PHA-20036 Molecular Biotechnology - PHA-20028
E2 - Constructively use feedback and take evidence-informed decisions.	Current Topics in Regenerative Medicine - PHA-20022 Molecular Biotechnology - PHA-20028 Immunology & Immunotherapy - PHA-20020 Stem Cells and Regenerative Medicine - PHA-20026 Biomaterials and Tissue Engineering - PHA-20024
E3 - Identify and manage appropriate resources to solve problems.	Advanced Cell Biology - PHA-20036 Current Topics in Regenerative Medicine - PHA-20022 Immunology & Immunotherapy - PHA-20020
E4 - Confidently communicate information, ideas, problems and solutions to peers or professionals of the field of practice.	Immunology & Immunotherapy - PHA-20020 Current Topics in Regenerative Medicine - PHA-20022 Molecular Biotechnology - PHA-20028 Stem Cells and Regenerative Medicine - PHA-20026 Advanced Cell Biology - PHA-20036 Biomaterials and Tissue Engineering - PHA-20024

Level 6

Subject Knowledge and Understanding	
Learning Outcome	**Module in which this is delivered**
K3 - understand the sources and features of different types of human stem cells;	Translational Regenerative Medicine - PHA-30031 Precision Medicine - PHA-30063
K4 - evaluate the strategies to use stem cells as disease models and therapeutic tools;	Precision Medicine - PHA-30063 Translational Regenerative Medicine - PHA-30031
K5 - describe the physico-chemical properties of different biomaterials and nanomaterials that support tissue/organ growth, implantation and drug delivery;	Nanomedicine - PHA-30037
K6 - familiarise with the concepts of genetic and genome engineering;	Oncology II - PHA-30059 Oncology I - PHA-30055 Precision Medicine - PHA-30063
K7 - discuss the concept of genomic medicine;	Oncology I - PHA-30055 Oncology II - PHA-30059 Precision Medicine - PHA-30063

Subject Specific Skills	
Learning Outcome	**Module in which this is delivered**
S1 - manage their own learning and utilise resources appropriate to the discipline to solve problems;	Oncology I - PHA-30055 Oncology II - PHA-30059 Cell and Tissue Engineering Research Project - PHA-30035 Translational Regenerative Medicine - PHA-30031 Precision Medicine - PHA-30063
S2 - work safely and effectively in a scientific laboratory;	Cell and Tissue Engineering Research Project - PHA-30035 Nanomedicine - PHA-30037 Precision Medicine - PHA-30063
S3 - collect, analyse and critically discuss scientific data relevant to the discipline;	Cell and Tissue Engineering Research Project - PHA-30035 Precision Medicine - PHA-30063 Translational Regenerative Medicine - PHA-30031
S4 - communicate confidently on topics related to the degree;	Translational Regenerative Medicine - PHA-30031 Nanomedicine - PHA-30037 Cell and Tissue Engineering Research Project - PHA-30035
S5 - understand the limits and ethical issues of the discipline and the need of code of practice;	Translational Regenerative Medicine - PHA-30031 Precision Medicine - PHA-30063

Intellectual skills	
Learning Outcome	**Module in which this is delivered**
I1 - Think independently and inventively by demonstrating understanding of recent advances in the area of practice.	Cell and Tissue Engineering Research Project - PHA-30035 Translational Regenerative Medicine - PHA-30031 Precision Medicine - PHA-30063
I2 - Construct complex arguments to assert positions and solve problems with original approaches.	Cell and Tissue Engineering Research Project - PHA-30035 Translational Regenerative Medicine - PHA-30031
I3 - Critically consider aspects of contrasting theories in the area of practice and take intellectual risks.	Oncology II - PHA-30059 Translational Regenerative Medicine - PHA-30031 Cell and Tissue Engineering Research Project - PHA-30035 Oncology I - PHA-30055 Nanomedicine - PHA-30037
I4 - Gather and evaluate information, data, assumptions to make reasoned decisions and formulate innovative solutions.	Oncology II - PHA-30059 Cell and Tissue Engineering Research Project - PHA-30035 Oncology I - PHA-30055 Translational Regenerative Medicine - PHA-30031 Precision Medicine - PHA-30063

Key or Transferable Skills (graduate attributes)	
Learning Outcome	**Module in which this is delivered**
E1 - Effectively participate and work as a team or professional group.	Cell and Tissue Engineering Research Project - PHA-30035 Oncology I - PHA-30055 Oncology II - PHA-30059 Translational Regenerative Medicine - PHA-30031 Precision Medicine - PHA-30063
E2 - Constructively use feedback and take evidence-informed decisions.	Cell and Tissue Engineering Research Project - PHA-30035 Translational Regenerative Medicine - PHA-30031 Precision Medicine - PHA-30063
E3 - Identify and manage appropriate resources to solve problems.	Nanomedicine - PHA-30037 Precision Medicine - PHA-30063 Cell and Tissue Engineering Research Project - PHA-30035 Translational Regenerative Medicine - PHA-30031
E4 - Confidently communicate information, ideas, problems and solutions to peers or professionals of the field of practice.	Oncology I - PHA-30055 Oncology II - PHA-30059 Translational Regenerative Medicine - PHA-30031 Cell and Tissue Engineering Research Project - PHA-30035 Nanomedicine - PHA-30037

9. Final and intermediate awards

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

Honours Degree	360 credits	You will require at least 120 credits at levels 4, 5 and 6

You must accumulate at least 270 credits in your main subject (out of 360 credits overall), with at least 90 credits in each of the three years of study, to graduate with a named single honours degree in this subject. |
| **Diploma in Higher Education** | 240 credits | You will require at least 120 credits at level 4 or higher and at least 120 credits at level 5 or higher |
| **Certificate in Higher Education** | 120 credits | You will require at least 120 credits at level 4 or higher |

International Year option: in addition to the above students must pass a module covering the international year in order to graduate with a named degree including the 'international year' wording. Students who do not complete, or fail the international year, will be transferred to the three-year version of the programme.:

Work Placement Year: in addition to the above students must pass a non-credit bearing module covering the work placement year in order to graduate with a named degree including the 'with Work Placement Year' wording. Students who do not complete, or fail the work placement year, will be transferred to the three-year version of the programme.

10. 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 assessment strategy that is adopted in the programme aims to develop critical thinking and problem solving skills. The assessments for the course can either take the form of an unseen exam at the end of each semester, lab reports, problem-based studies, dissertation, presentations or essays to be handed in.

These summative assignments (they will contribute to the final degree) will allow students to consolidate their knowledge on the subjects and develop ability to apply this knowledge in a structured and focused way, carry out bibliographic research, communicate ideas, analyse primary research data and work effectively as part of a group. Formative feedback will be provided on each assessment after three weeks from submission and will help students to understand the quality of their submission and how to improve their future performance.

Marks are awarded for summative assessments designed to assess your achievement of learning outcomes. 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. 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.

11. Contact Time and Expected Workload

This contact time measure is intended to provide you with an indication of the type of activity you are likely to undertake during this programme. The data is compiled based on module choices and learning patterns of students on similar programmes in previous years. Every effort is made to ensure this data is a realistic representation of what you are likely to experience, but changes to programmes, teaching methods and assessment methods mean this data is representative and not specific.

Undergraduate courses at Keele contain an element of module choice; therefore, individual students will experience a different mix of contact time and assessment types dependent upon their own individual choice of modules. The figures below are an example of activities that a student may expect on your chosen course by year stage of study. Contact time includes scheduled activities such as: lecture, seminar, tutorial, project supervision, demonstration, practical classes and labs, supervised time in labs/workshop, fieldwork and external visits. The figures are based on 1,200 hours of student effort each year for full-time students.

Activity

	Scheduled learning and teaching activities	Guided independent Study	Placements
Year 1 (Level 4)	24.9%	75.1%	0%
Year 2 (Level 5)	27.1%	72.9%	0%
Year 3 (Level 6)	26%	74%	0%

12. Accreditation

At this stage the course is not accredited. However, we aim to obtain an accreditation on Molecular Aspect of Biology by the Royal Society of Biology (RSB) as soon as our first cohort of students will graduate in 2024. We will keep students informed on the progress of this application.

13. 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'.

14. 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/

Applicants who are not currently undertaking any formal study or who have been out of formal education for more than 3 years and are not qualified to A-level or BTEC standard may be offered entry to the University's Foundation Year Programme.

Applicants for whom English is not a first language must provide evidence of a recognised qualification in English language. The minimum score for entry to the Programme is Academic IELTS 6.0 or equivalent.

English for Academic Purposes

Please note: All new international students entering the university will provide a sample of Academic English during their registration Using this sample, the Language Centre may allocate you to an English language module which will become compulsory. This will replace any GCP modules. *NB:* students can take an EAP module only with the approval of the English Language Programme Director and are not able to take any other Language modules in the same academic year.

English Language Modules at Level 4:

- Business - ENL-90003 Academic English for Business Students (Part 1); ENL-90004 Academic English for Business Students (2)
- Science - ENL-90013 Academic English for Science Students
- General - ENL-90006 English for Academic Purposes 2; ENL-90001 English for Academic Purposes 3; ENL-90002 English for Academic Purposes 4

English Language Modules at Level 5:

- Business - ENL-90003 Academic English for Business Students (Part 1); ENL-90004 Academic English for Business Students (2)
- Science - ENL-90013 Academic English for Science Students
- General - ENL-90006 English for Academic Purposes 2; ENL-90001 English for Academic Purposes 3; ENL-90002 English for Academic Purposes 4

English Language Modules at Level 6:

- Business - ENL-90003 Academic English for Business Students (Part 1); ENL-90004 Academic English for Business Students (2); ENL-90005 Advanced Business English Communication

- Science - ENL-90013 Academic English for Science Students
- General - ENL-90006 English for Academic Purposes 2; ENL-90001 English for Academic Purposes 3; ENL-90002 English for Academic Purposes 4

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/

15. How are students supported on the programme?

Support for the students enrolled in the programme will be provided in the following way:

Keele Student Services. All Keele students have access to Student Services which are focused to make sure that each student achieves the best university experience possible. From academic life to mental health, from dyslexia and disabilities to wellbeing, Student Services act as the first point of contact for each student to provide guidance, a pointer or to give a tools to get back on track with the studies. There are multiple ways to contact Student Services that can be found at https://www.keele.ac.uk/students/studentservices/.

Academic Mentor. All students enrolled in the programme will have an Academic Mentor, a member of the teaching staff who will provide academic guidance and support. Students will have a number of scheduled occasions along the years to meet with the Academic Mentor and make the most out of the programme and academic resources. Within the School, there are multiple other roles (Programme Director, Year Tutor, Student Rep) and activities (Student-Staff Voice Committee) working with Academic Mentors to make sure that each student will receive pastoral and academic support.

Keele Email and **Keele Learning Environment (KLE).** An email address will be assigned to all Keele students and it will represent the main channel of contact for all official communications by the School and first point of contact for all academics. No personal email address will be used. New students will also be granted access to the KLE platform, the virtual teaching and learning space of the University.

Module leaders. The academics in charge of the modules will provide all information and supports related to the teaching and assessment strategies of the module. They will also provide general feedback on the assessments that students will undertake during the programme.

16. Learning Resources

The Bioengineering programme is a taught course and all taught components and related laboratories experiences with the exception of the research projects will be delivered in the main campus of Keele University, a 600 acre campus that has plenty of learning resources to offer and all students of the programme will have free access to them all. Research projects will be delivered across the campus, Guy Hilton Research Centre in Hartshill and the Robert Jones and Agnes Hunt Orthopaedic Hospital - Oswestry.

- **Library**

The University Library hold a large series of books and journal covering all subjects in the programme. Those resources will be available either online and in print format and accessible 24/7 during semester. This means that students will rarely have to spend money on academic books or pay to access the resources they need for their studies. A guide that provides an overview of the services is available through this web address https://sway.office.com/zk4jW8ARdl3uJ0U8 or by browsing the main University Library webpage https://www.keele.ac.uk/library/.

- **Laboratory and Research Equipment**

Keele University has multiple interdisciplinary Research Themes undertaking cutting edge research and students can take advantages from the large range of research groups and well equipped laboratories. A recent investment of £34m provided a state-of-the art teaching facility that is designed to provide a space for technical training, discussion and cutting-edge science. Students for this programme will benefit from this learning space enabling high quality training, collaboration and interdisciplinary working. Research projects will be delivered in the laboratories of the academic staffs across campus, Guy Hilton Research Centre and the Robert Jones and Agnes Hunt Orthopaedic Hospital - Oswestry.

- **IT Services**

The University provides access to all sorts of software and equipment that will be needed to students to succeed in their degree. Students will be able to loan a laptop for short periods from the library or use PC labs in various building around the University. For further information regarding IT Services (info, advice or report a problem), please visit www.keele.ac.uk/it.

17. Other Learning Opportunities

Study Abroad (International Year)

A summary of the International Year, which is a potential option for students after completion of year 2 (Level 5), is provided in the Annex for the International Year.

Work Placement Year in Bioengineering

All Bioengineering students will be entitled to apply for a work-based learning experience or placement year at the end of Level 5 and spend a 9-12 months period in a research laboratory or industry. Students will be facilitated in the identification of the placement with the support of the Programme Director and all placements will be reviewed and approved by the School prior commencement of the work experience based on the learning experience offered by the placement provider and in accordance with the Keele Placement Code of Practice. Students in placement will need to complete and pass the Professional Placement in Bioengineering module (PHA-30061) to obtain a final degree in Bioengineering (Regenerative Medicine) (with placement). Details related to the placement experience are reported into the Placement section of this document and in the PHA-30061 module specification form.

Other opportunities

18. Additional Costs

As to be expected there will be additional costs for inter-library loans and potential overdue library fines, print and graduation. We do not anticipate any further costs for this programme.

19. 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 National Student Survey (NSS), 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/

20. 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: Biomedical Sciences (2019) https://www.qaa.ac.uk/docs/qaa/subject-benchmark-statements/subject-benchmark-statement-biomedical-sciences.pdf?sfvrsn=2bf2c881_4

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

21. Annex - International Year

BSc (Hons) Bioengineering (Regenerative Medicine) with International Year

---

International Year Programme

Students registered for this Single Honours programme may either be admitted for or apply to transfer during their period of study at Level 5 to the International Year option. Students accepted onto this option will have an extra year of study (the International Year) at an international partner institution after they have completed Year 2 (Level 5) at Keele.

Students who successfully complete both the second year (Level 5) and the International Year will be permitted to progress to Level 6. Students who fail to satisfy the examiners in respect of the International Year will normally revert to the standard programme and progress to Level 6 on that basis. The failure will be recorded on the student's final transcript.

Study at Level 4, Level 5 and Level 6 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 International Year option.

International Year Programme Aims

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

1. Personal development as a student and a researcher with an appreciation of the international dimension of their subject
2. Experience of a different culture, academically, professionally and socially

---

Entry Requirements for the International Year

Students may apply to the 4-year programme during Level 5. Admission to the International Year is subject to successful application, interview and references from appropriate staff.

The criteria to be applied are:

- Academic Performance (an average of 55% across all modules in Semester 1 at Level 5 is normally required. Places on the International Year are then conditional on achieving an average mark of 55% across all Level 5 modules. Students with up to 15 credits of re-assessment who meet the 55% requirement may progress to the International Year. Where no Semester 1 marks have been awarded performance in 1st year marks and ongoing 2nd year assessments are taken into account)
- General Aptitude (to be demonstrated by application for study abroad, interview during the 2nd semester of year 2 (Level 5), and by recommendation of the student's Academic Mentor, 1st and 2nd year tutors and programme director)

Student Support

Students will be supported whilst on the International Year via the following methods:

- Phone or Skype conversations with Study Abroad tutor, in line with recommended Academic Mentoring meeting points.
- Support from the University's Global Education Team

Learning Outcomes

In addition to the learning outcomes specified in the main text of the Programme Specification, students who complete a Keele undergraduate programme with International Year will be able to:

1. Describe, discuss and reflect upon the cultural and international differences and similarities of different learning environments
2. Discuss the benefits and challenges of global citizenship and internationalisation
3. Explain how their perspective on their academic discipline has been influenced by locating it within an international setting.
4. Experience laboratory and research activities within an international environment.

These learning outcomes will all be assessed by the submission of a satisfactory individual learning agreement, the successful completion of assessments at the partner institution and the submission of the reflective portfolio element of the international year module.

Regulations

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

Students undertaking the International Year must complete 120 credits, which must comprise *at least 40%* in the student's discipline area.

This may impact on your choice of modules to study, for example you will have to choose certain modules to ensure you have the discipline specific credits required.

Students are barred from studying any module with significant overlap to the Level 6 modules they will study on their return. Significant overlap with Level 5 modules previously studied should also be avoided.

Additional costs for the International Year

Tuition fees for students on the International Year will be charged at 15% of the annual tuition fees for that year of study, as set out in Section 1. The International Year can be included in your Student Finance allocation, to find out more about your personal eligibility see: www.gov.uk

Students will have to bear the costs of travelling to and from their destination university, accommodation, food and personal costs. Depending on the destination they are studying at additional costs may include visas, study permits, residence permits, and compulsory health checks. Students should expect the total costs of studying abroad be greater than if they study in the UK, information is made available from the Global Education Team throughout the process, as costs will vary depending on destination.

Students who meet external eligibility criteria may be eligible for grants as part of this programme. Students studying outside of this programme may be eligible income dependent bursaries at Keele.

Students travel on a comprehensive Keele University insurance plan, for which there are currently no additional charges. Some Governments and/or universities require additional compulsory health coverage plans; costs for this will be advised during the application process.

The School of Pharmacy and Bioengineering has already nominated a tutor for the International Year that will help students in identifying and securing the right opportunity for their career. The School has signed agreements with the University of Napoli "Federico II" and the Centre for Regenerative Medicine in Barcelona to host students of the programme in their taught courses or laboratories. We are in discussion with multiple other international partners regarding the mutual exchange of students. These Institutions are at the forefront of the regenerative medicine research and therefore visiting their laboratories will be a unique professional experience for the students.

22. Annex - Work Placement Year

BSc (Hons) Bioengineering (Regenerative Medicine) with Work Placement Year

Work Placement Year summary

Students registered for this programme may either be admitted for or apply to transfer during their studies to the 'with Work Placement Year' option. Students accepted onto this programme will have an extra year of study (the Work Placement Year) with a relevant placement provider after they have completed Year 2 (Level 5) at Keele.

Students who successfully complete both the second year (Level 5) and the Work Placement Year will be permitted to progress to Level 6. Students who fail to satisfactorily complete the Work Placement Year will normally revert to the 3-year programme and progress to Level 6 on that basis. The failure will be recorded on the student's final transcript.

Study at Level 4, Level 5 and Level 6 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 Work Placement Year option.

Work Placement Year Programme Aims

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

The Professional Placement Year for the BRM undergraduate students will provide a graduate-level work experience in an academic laboratory, industry or research institution for an extended period of time. Students will have the opportunity to develop skills and sector knowledge relevant to their programme of study as well as the professional attitude that is needed in the work environment.

Entry Requirements for the Work Placement Year

Admission to the Work Placement Year is subject to successful application, interview and references from appropriate staff. Students have the opportunity to apply directly for the 4-year 'with work placement year' degree programme, or to transfer onto the 4-year programme at the end of Year-1 and in Year-2 at the end of Semester 1. Students who are initially registered for the 4-year degree programme may transfer onto the 3-year degree programme at any point in time, prior to undertaking the year-long work placement. Students who fail to pass the work placement year, and those who fail to meet the minimum requirements of the work placement year module (minimum 45 weeks full time (1,200 hours), or equivalent, work placement), will be automatically transferred onto the 3-year degree programme.

The criteria to be applied are:

- A good University attendance record and be in 'good academic standing'.
- Passed all Year-1 and Year-2 Semester 1 modules
- Students undertaking work placements will be expected to complete a Health and Safety checklist prior to commencing their work experience and will be required to satisfy the Health and Safety regulations of the company or organisation at which they are based.
- (International students only) Due to visa requirements, it is not possible for international students who require a Tier 4 Visa to apply for direct entry onto the 4-year with Work Placement Year degree programme. Students wishing to transfer onto this programme should discuss this with student support, the academic tutor for the work placement year, and the Programme Lead. Students should be aware that there are visa implications for this transfer, and it is the student's responsibility to complete any and all necessary processes to be eligible for this programme. There may be additional costs, including applying for a new Visa from outside of the UK for international students associated with a transfer to the work placement programme.

Students may not register for both an International Year and a Work Placement Year.

Student Support

Students will be supported whilst on the Work Placement Year via the following methods:

- Regular contact between the student and a named member of staff who will be assigned to the student as their University supervisor. The University supervisor will be in regular contact with the student throughout the year, and be on hand to provide advice (pastoral or academic) and liaise with the Placement supervisor on the student's behalf if required.
- Two formal contacts with the student during the placement year: the University supervisor will visit the student in the placement organization at around 5 weeks after the placement has commenced, and then visit again (or conduct a telephone/video call tutorial) at around 15 weeks into the placement.
- Weekly supervision sessions will take place with the placement supervisor (or his/her nominee) throughout the duration of the placement.

Learning Outcomes

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

1. Understand how BRM-related academic studies are reflected into the research, industrial or professional environment.
2. Apply their knowledge and practical skills for an extended period of time.
3. Improve competences in documenting results and appreciate their importance in a research work environment.
4. Expand their written and oral skills.
5. Appreciate the importance of working effectively, reliably, honestly, diplomatically as an individual or as part of a team.
6. Comprehend and consistently comply with the concepts of occupational health, safety requirements and procedures and employee welfare.

These learning outcomes will be assessed through the non-credit bearing Work Placement Year module (PHA-30061) which involves:

1. A systematic and well structured 3000-word written report covering the work experience and describing the host environment, duties and tasks completed during the placement year. The report will be tailored and rubrics adapted at the beginning of the academic year by the module leader based on the nature of placements secured by the students.
2. A 10-minutes presentation with 5 minutes questions featuring the work experience, the placement host, and the scientific work or results obtained during the placement. Presentation will be delivered via Teams to a group of academics of the BRM programme.
3. A two pages professional CV tailored on the academic studies and work placement experience and featuring the skills developed during the placement year.
4. A Placement Provider Performance Review that will be submitted by the placement provider via email to the School to assess the performance of the student.

Regulations

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

- Students undertaking the Work Placement Year must successfully complete the zero-credit rated 'Professional Placement In Bioengineering' module (PHA-30061)
- In order to ensure a high quality placement experience, each placement agency will sign up to a placement contract (analogous to a service level agreement).
- Once a student has been accepted by a placement organisation, the student will make a pre-placement visit and a member of staff identified within the placement contract will be assigned as the placement supervisor. The placement supervisor will be responsible for ensuring that the placement experience meets the agreed contract agreed with the University.
- The placement student will also sign up an agreement outlining his/her 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 School and have an impact on that organisation's willingness (or otherwise) to remain engaged with the placement.

Additional costs for the Work Placement Year

Tuition fees for students on the Work Placement Year will be charged at 20% of the annual tuition fees for that year of study, as set out in Section 1. The Work Placement Year can be included in your Student Finance allocation; to find out more about your personal eligibility see: www.gov.uk

Students will have to bear 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. If it is paid, this is likely to affect student finance eligibility, however if it is voluntary and therefore unpaid, should not affect student finance eligibility. Students are required to confirm eligibility with their student finance provider.

International students who require a Tier 4 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: 03 June 2024

Previous documents

Version No	Year	Owner	Date Approved	Summary of and rationale for changes
2	2023/24	GIANPIERO DI LEVA		No revision submitted
1	2023/24	GIANPIERO DI LEVA	22 March 2023	
1	2022/23	GIANPIERO DI LEVA	18 February 2022	