

Programme Specification¹ (Date 2026 – 27)

Postgraduate Certificate in Healthcare Innovation

Programme title	<i>Healthcare Innovation</i>
Name of final award	<i>Postgraduate Certificate</i>
Awarding Body	<i>University of Cambridge</i>
Teaching institution	<i>University of Cambridge</i>
PSRB/Accreditation details and date the course was last accredited	
UCAS code	<i>None</i>
HECoS code(s)	<i>100127 (Biomedical Engineering); 100188 (Systems Engineering); 100005 (Clinical Engineering)</i>
ATAS code	
<u>Relevant QAA benchmark statement(s)</u>	<i>None</i>
Qualification framework level	<i>Level 7</i>
Date specification approved	<i>February 2026</i>
Linked course	

Brief overview of the course

(Please explain the purpose of the programme in a brief paragraph of no more than 5-6 sentences.)

The objective of the programme is to provide an introduction to the research skills, governance and innovation needed to work successfully with healthcare systems, suitable for those from engineering and medical backgrounds, as well as related areas. Students will be equipped with the skills necessary to understand how biomedical engineering impacts upon populations, health conditions and clinical outcomes, and learn how to work across the boundaries of engineering, design and healthcare in an effective manner. The programme

¹ Every effort has been made to ensure the accuracy of the information in this programme specification. At the time of publication, the programme specification has been approved by the relevant Faculty Board (or equivalent). Programme specifications are reviewed annually, however, during the course of the academic year, any approved changes to the programme will be communicated to enrolled students through email notification or publication in the *Reporter*. The relevant faculty or department will endeavour to update the programme specification accordingly, and prior to the start of the next academic year.

has been developed by a network of partners with unrivalled experience in healthcare systems and biomedical engineering to create a world-leading training environment.

Educational Aims

What are the educational aims of the programme?

The course aims to:

- Provide professionally relevant teaching and learning of the knowledge and skills necessary to be at the forefront of efforts to engineer better care
- Develop healthcare innovation experts with the necessary expertise, and originality of application, to pursue and expand their roles in the rapidly evolving environment of healthcare systems
- Promote a comprehensive understanding of the practical and ethical considerations relevant to healthcare improvement and biomedical engineering
- Provide work-relevant learning around the current problems, best-practice, challenges and potential solutions in the delivery of effective health and care
- Create a professional network of like-minded individuals as leaders in the field of healthcare systems and biomedical engineering
- Provide students with systems leadership skills and the knowledge to use technology to deliver value in healthcare, research, and commercial arenas
- Equip graduates with the language and mindset to work in an interdisciplinary manner across the interface between medicine, engineering and commercial settings.
- Expose students to the industrial context and perspective within the technology area, providing opportunities throughout the study for involvement with industrial partners through workshops, seminars and the projects.

Learning Outcomes - *What is a student expected to learn from the programme? These should have been included on the new course proposal when the course was first approved.*

(Please refer to the guidance on [Learning Aims and Outcomes](#) and the [Office for Students](#) sector-recognised standards for sector expectations of the graduates of higher education qualifications)

Knowledge and Understanding

- Knowledge of the broad landscape of healthcare systems and biomedical engineering; and understanding of the practical and ethical considerations relevant to healthcare improvement and biomedical engineering;
- Knowledge of engineering techniques that can be applied to address challenges in clinical settings, including diagnostics and medical devices;
- Understanding the role of each key element in healthcare improvement projects;

Skills and other attributes

Intellectual Skills

- Ability to identify the future trends in healthcare provision, biomedical interventions and use of healthcare data; and communicate to appropriate groups to support the implementation of change;
- Expertise to apply engineering knowledge and methodology in the complex multi-professional systems;
- Skills to use the relevant tools to execute systems approaches in healthcare improvement projects;

Transferable Skills

- Professionalism to work in a diverse environment, work value, ethics and sociability, including embracing differences in professional background, culture, language, geography;
- Not constrained to familiar technology or hard skills, but also the flexibility to adapt to changes;
- Ability to develop and apply research critically to improve health for individuals, populations and healthcare system;
- Capability to disseminate and translate knowledge for patient and public benefit.

Employability Skills

- Be able to take the responsibility at the frontiers of organisations with a sharp sense of new opportunities and awareness of the coming trends;
- Knowledge to improve organisation's performance, competitiveness and advancement;
- Skills to facilitate effective and timely decision making within an organisation in healthcare settings;
- Leadership proficiency to create and close the business loop of design innovations across a diverse range of healthcare contexts.

Programme structure

*Please give a **brief** outline of the course structure and how it supports progress. Please note details of individual papers/modules are not needed. What elements does the programme contain? If you have a part-time route show how this is aligned with the full-time course.*

The programme is part-time and follows a "stacked structure" such that students progress from the PgCert, through the PgDip and then on to the MSt, enrolling each year for the corresponding award. Progression through the structure will be dependent on obtaining a pass at the end of each year. Breaks will be allowed between years in a flexible manner, up to a maximum overall course duration of 8 years. Students will be affiliated to colleges in their final MSt year.

The MSt course consists of six units and a research dissertation, with Units 1-3 comprising the PgCert and Units 1-6 comprising the PgDip.

Each unit in the PgCert and PgDip years will be associated with a residential week which will be carried out in Cambridge. Teaching outside the residential weeks will be supported by online lectures/seminars, supervisions and online resources.

Unit 1: Research skills and innovation

Unit 2: Healthcare Technologies I

Unit 3: Healthcare systems improvement

Unit 4: Patient and population health

Unit 5: Healthcare Technologies II

Unit 6: Healthcare system innovation

Teaching and Learning

Please indicate which methods are used, i.e., lectures, seminars, practical sessions etc. Include any activity that does not lead to summative assessment. How is the programme taught? How do students learn?

Teaching methods will include lectures, student and tutor-led seminars, small group teaching and supervisions, guest speaker sessions, group discussions and workshops, practical sessions, transferable skills workshops, team building sessions, independent research, coursework projects, case studies, and an individual research project leading to a dissertation.

Each unit in the PgCert and PgDip years will be associated with a residential week which will be carried out in Cambridge. Students will be required to attend and engage in all the residential week sessions. Teaching outside the residential weeks will be supported by supervisions (normally online) and online resources.

Assessment

Please list below summative assessments for the course and how they meet the learning outcomes listed above. Ensure these are aligned with your course regulations ([Statutes and Ordinances](#)).

Assessment	Learning Outcome
<p>Unit assessment</p> <p>Units 1 to 6 will use summative assessment approaches designed to ensure experiential learning and work-based real-life relevance. The exact assessment method used will depend on the material in the unit, to match the different learning outcomes.</p>	
<p>In units 1, 3 and 6 the assessment will be in the form of a written report of between 3,000 and 4,000 words, in which the student will be required to demonstrate a broad knowledge and understanding of the topic areas covered in these units. The report for unit 1 (Research skills and innovation) will require students both to demonstrate knowledge of the broad landscape but also show how this landscape</p>	<ul style="list-style-type: none">• Knowledge of the broad landscape of healthcare systems and biomedical engineering; and understanding of the practical and ethical considerations relevant to healthcare improvement and biomedical engineering;• Ability to identify the future trends in healthcare provision, biomedical interventions and use of healthcare data; and communicate

<p>will affect future trends in healthcare innovation.</p>	<p>to appropriate groups to support the implementation of change</p>
<p>For Unit 3 (Healthcare systems Improvement) the report will require students to apply a system engineering approach to improvement, demonstrating an understanding of the interplay between different key elements in the process.</p>	<ul style="list-style-type: none"> • Understanding the role of each key element in healthcare improvement projects; • Skills to use the relevant tools to execute systems approaches in healthcare improvement projects.
<p>In unit 6 (Healthcare systems innovation) the factors affecting research and commercial development of healthcare innovations will be considered in the report, with the students being required to demonstrate the mindset and skills to follow through on a product business life cycle.</p>	<ul style="list-style-type: none"> • Understanding of the intricacy of medical device development for both medical settings and everyday life; and understanding of the up-to-date technical, legal and ethical infrastructure that guides research and commercial development; • Key entrepreneurship mindset and skills to complete a healthcare product business life cycle.
<p>Unit 4 (Patient and population health) will have a similar written report requirement of 3,000-4,000 words, where aspects of patient and public health will need to be addressed, but will also include statistical or epidemiological analysis within the report.</p>	<ul style="list-style-type: none"> • Understanding and knowledge of patient and public health from the aspects of physical, environment, social, legal and historical elements; • Ability to conduct appropriate epidemiological study analyses and formulate/test appropriate hypotheses.
<p>Units 2 and 5 (Healthcare Technologies I and II) will each be assessed using a set of short reports (three reports per unit, each of length 4 pages including figures and tables). This assessment method ensures that the range of separate topic areas in these units are covered and that students can apply</p>	<ul style="list-style-type: none"> • Knowledge of engineering techniques that can be applied to address challenges in clinical settings, including diagnostics and medical devices; • Understanding the value of a mixture of healthcare technology in

<p>techniques in a healthcare setting, and use their technical competence to identify scope for improvement in healthcare practice.</p>	<p>design implementation for clinical purposes;</p> <ul style="list-style-type: none"> • Expertise to apply engineering knowledge and methodology in the complex multi-professional systems; • Ability to identify the space to improve diagnosis, treatment, management and policies in clinical practice with a strong advanced technical competence.
<p>Research project assessment</p> <p>The assessment of the research project will include a planning report of up to 3,000 words and a dissertation of between 10,000 and 12,000 words in length including footnotes but excluding appendices and bibliography. As well as demonstrating the ability to plan a research project, the planning document will require students to put their research into the context of future trends, and demonstrate a good understanding of how a systems approach affects the ability to innovate. The research dissertation will require students to have a synoptic overview of the course units in executing their project plan, using a more comprehensive knowledge and application of the methods taught in units 1 to 6.</p>	<ul style="list-style-type: none"> • Ability to plan a research project, incorporating the relevant background and literature and identifying appropriate research goals and research methodology; • Ability to identify the future trends in healthcare provision, biomedical interventions and use of healthcare data; and communicate to appropriate groups to support the implementation of change; • Skills to use the relevant tools to execute systems approaches in healthcare improvement projects; • More in-depth knowledge and application of the methods taught in units 1 to 6 as applied to healthcare innovation via the MSt thesis practice, which must address a topic in the space of scientific, medical, social or business innovation under the general theme of healthcare support.

Progression and Career Destinations

Please describe the opportunities for the students' personal and professional development (including transferable and employability skills). Please include information relating to successful graduates' prospects for employment.

Preparation for employment in general is provided in the opportunities for the acquisition of relevant transferable and employability skills outlined in this programme specification.

The structure of the course will allow significant opportunities for students to adjust and refine their career goals. The course awards provide a direct route to career enhancement. During the course, networking opportunities will be offered, exposing students to a wider range of career opportunities both from their fellow students but also their Course Advisor, mentors on the course, including clinicians, clinical engineers and industrial colleagues.