

Programme Specification

MSc Cancer Drug Discovery

<https://www.bradford.ac.uk/courses/pg/cancer-drug-discovery/>

Academic Year:	2026/27
Degree Awarding Body:	University of Bradford
Partner(s), delivery organisation or support provider (if appropriate):	N/A
Final and interim award(s):	Framework for Higher Education Qualifications (FHEQ) level 7 MSc Postgraduate Diploma Postgraduate Certificate
Programme accredited by (if appropriate):	N/A
Programme duration:	12 months full time
QAA Subject benchmark statement(s):	N/A
Date last confirmed and/or minor modification approved by Faculty Board	April 2025 May 2026

Please note: This programme specification has been published in advance of the academic year to which it applies. Every effort has been made to ensure that the information is accurate at the time of publication, but changes may occur given the interval between publishing and commencement of teaching. Any change which impacts the terms and conditions of an applicant's offer will be communicated to them. Upon commencement of the programme, students will receive further detail about their course and any minor changes will be discussed and/or communicated at this point.

Introduction

Based upon a greater understanding of the molecular aspects of cancer progression, new opportunities for chemical intervention in this disease have emerged. Medicinal chemists provide the expertise required in translating that understanding to the identification of suitable chemical entities, and to the process of optimisation that ultimately leads to the discovery of new cancer medicines. This programme is designed to provide students with a state-of-the-art education in modern cancer drug discovery, which meets the demand of employers in the pharmaceutical industry and has a strong track record in graduates progressing to employment in the field or to PhD study.

Opportunities to learn the latest innovations in drug discovery, including computer-aided drug design and techniques in drug synthesis as well as electronic data management are

provided in the programme. In addition, an extended project in drug discovery will not only provide students with first-hand experience of the challenges in original research but also gives students an opportunity to put into practice the knowledge gained.

This programme is run by the Institute of Cancer Therapeutics (ICT), which is situated in purpose-built facilities at the heart of the University campus. The Institute has an international reputation as a centre of excellence and a track record in drug discovery. It is a multidisciplinary organisation incorporating a broad spectrum of skills ranging from chemistry through preclinical studies to early clinical trials, being one of the few centres nationally that has all the necessary research tools and expertise in-house to progress anticancer medicines and biomarkers from concept to the clinic.

Throughout the MSc Cancer Drug Discovery programme, you will develop desirable hands-on experience and have access to various Continued Professional Development (CPD) opportunities through seminars and workshops. These include, but are not limited to, weekly seminars from external researchers and seminars guiding you through career opportunities outside of academia and applying for PhDs, to provide you with as much information as possible so you can tailor your career ambitions accordingly.

There are several workshops and interactive lectures on the development of students' scientific (and non-scientific) skills such as presentation skills, critical appraisal and extracting information from scientific journal articles, which are all key qualities for employment. The development of transferable skills is a core component of the programme, further enhancing your employability in the future.

The programme uses a range of teaching strategies to promote independent study and research to develop a systematic and critical understanding of drug toxicology and safety pharmacology and enhance students' autonomous learning and development. This programme facilitates the development of the skills required for careers in academia, industry and further research as well as scientific-related roles such as pharmaceutical sales or project management. Enhancement of independent learning skills during the programme will equip students with the skills to succeed as lifelong learners.

Programme Aims

The programme is intended to:

- A1 Enable students to develop a systematic understanding and critical awareness of, and skills in, selected disciplines within the field of cancer biology and pharmacology.
- A2 Enable students to develop practical skills in selected disciplines within the field of drug discovery.
- A3 Develop within the context of cancer drug discovery, a comprehensive understanding of communication, research and scientific method.
- A4 Provide a strong knowledge base in the theory, experimental methods, legislative regulations, and practical skills of chemistry and biology, and their application in cancer drug discovery.

Programme Learning Outcomes

On successful completion of the programme, students will be able to:

- LO1 Critically evaluate specialised areas of cancer drug discovery.
- LO2 Critically evaluate scientific literature and communicate scientific data.
- LO3 Write and interpret scientific reports.
- LO4 Demonstrate knowledge of experimental laboratory techniques relevant to the process of drug discovery.
- LO5 Demonstrate critical thinking through ability to independently: recognise limitations and strengths in research data and approaches.
- LO6 Critically evaluate the process of drug discovery including sources of leads, protocols for lead optimisations, criteria for drugability, routes for commercial exploitation of drug agents.
- LO7 Develop autonomy in learning required for continuing professional development within scientific research.
- LO8 Critically evaluate the success and failures of the anticancer drug discovery process through a study of case histories.
- LO9 Demonstrate an understanding of research through discussions with different audiences.
- LO10 Critically evaluate elements of pre-clinical screening strategies in vitro and in vivo.
- LO11 Demonstrate a conceptual understanding of research and scientific methods, leading to the formulation of scientific conclusions based on generated data.
- LO12 Safely plan, design and execute practical investigations, from the problem recognitions stage through to the evaluation and appraisal of results and findings.
- LO13 Make decisions in complex and unprecedented situations.
- LO14 Exercise initiative and personal responsibility.
- LO15 Engage in scientific discussions with scientific professionals.

Curriculum

The curriculum for students starting in September and in January is outlined in the tables below. The curriculum has been carefully developed to ensure an equivalent student experience regardless of entry point. In Semester 2 modules underpin the Cancer Therapeutics Research Project which runs in Semester 3. The modules in semester 1 are 'standalone' modules and are taken at the start or end of the programme depending on the entry point. Semester 1 content ties the other content within the programme together by providing background and the progression to the regulatory side of drug development.

For each intake, new students are introduced to members of the previous intake of students and paired up with a "buddy". The buddy system facilitates peer interaction with students who are already familiar with the course and the university who can offer advice or guidance as new students are settling in. The buddy system has shown significantly enhanced student experience and reduced settling in time for new students, particularly international students.

September Start

FHEQ Level	Module Code	Module Title	Type	Credits	Semester
7	INC7014-B	Principles of Drug Discovery	Core	20	1
7	INC7023-B	Cancer Pharmacology and Regulatory Toxicology	Core	20	1
7	INC7001-B	Preclinical Models for Drug Evaluation	Core	20	1
7	INC7011-B	Case Studies in Drug Discovery	Core	20	2
7	INC7024-D	Research Skills for Postgraduate Students	Core	40	2
7	INC7019-E	Cancer Therapeutics Research Project	Core	60	3

January Start

FHEQ Level	Module Code	Module Title	Type	Credits	Semester
7	INC7011-B	Case Studies in Drug Discovery	Core	20	2
7	INC7024-D	Research Skills for Postgraduate Students	Core	40	2
7	INC7019-E	Cancer Therapeutics Research Project	Core	60	3
7	INC7023-B	Cancer Pharmacology and Regulatory Toxicology	Core	20	1
7	INC7001-B	Preclinical Models for Drug Evaluation	Core	20	1
7	INC7014-B	Principles of Drug Discovery	Core	20	1

Learning and Teaching Strategy

A variety of teaching methods appropriate to the learning outcomes of the individual modules are employed throughout the programme and are supported by the virtual learning environment provided by the University. You will experience lectures from the Institute of Cancer Therapeutics (ICT) research/teaching staff, visits from clinicians and industrial researchers, small group workshops, one-to-one tutorials and practical classes. The learning activities have been designed to suit a variety of different learning styles and include but are not limited to group discussions in teams, independent learning through traditional lectures and interactive lectures using learning technologies such as smart quizzes, providing every student an opportunity to develop their skills in a way that suits them best.

You will also attend the ICT Research Seminar programme, which includes weekly research presentations from external researchers who come especially to share their research breakthroughs with members of the ICT. This is a real opportunity to engage and build a network with senior researchers outside the University of Bradford. The seminar series has received consistently positive feedback from previous students and exposes you to the types of research carried out externally.

Self-directed independent learning forms a significant component at MSc level. You will be supported to develop the attributes and skills needed for life-long learning and continued professional development. Self-directed independent study includes a variety of activities, for example, reading of selected textbooks and specified source literature, use of the virtual learning environment, report writing and preparing presentations.

Acquisition of programme learning outcomes will occur gradually and cumulatively through completion of modules employing a mix of lectures, laboratory investigations, coursework, workshops, individual project work and independent research guided by module tutors.

Assessment Strategy

A variety of assessments will take place throughout the programme, supported by formative (unweighted) assessments that allow you to practice your skills and knowledge before the final summative assessments. Assessments are spread across the semesters to reduce burden on students. Students will develop the skills to achieve the programme and individual module learning outcomes in a progressive and cohesive manner through a variety of assessment types.

Assessments test your development of the skills expected within a scientific career, whether this be in academia, industry or a related role within science. Exams test the core knowledge required in the areas of cancer and drug development as well as the ability to link topics to one another in scientific writing.

A wide variety of coursework types, from portfolios to lab reports, to written essays, further support the development of skills that you can transfer into your chosen career:

Portfolios – develop key organisational skills through the assembly of smaller components to form a larger piece of work, resembling an industry-style study folder.

Lab reports – develop scientific writing skills in the format of journal articles and help to train critical analysis.

Written essays – develop deeper thinking and critical appraisal in concisely structure formats.

Oral presentations/discussions form the final assessment style on the programme. These develop your communication skills through various scientific real-life settings. The viva is the final assessment for the research project module where students engage in an in-depth scientific discussion about their project.

Levels of AI at the University of Bradford:

1. Red – No AI – The assessment must be completed with no AI assistance. Any evidence of the use of AI will lead to academic misconduct. AI must not be used at any point during the assessment.
2. Yellow – AI-Assisted Editing – AI can be used for research and to make improvements in the quality of the work. Any AI used must be cited, and if asked, a copy of unedited work must be submitted as an appendix.
3. Green – Full AI – AI can be used as a support to meet the assessment's requirements, acting as a collaborative partner. You may use AI throughout your assessment to support your work and do not need to specify what you have used. Please note that none of the assessments on this programme operate this option.

A more detailed description of the way that learning is related to assessment in the modules that make up this programme can be found in the module descriptors.

Assessment, Continuation and Award Regulations

This programme follows the Assessment, Continuation and Award regulations published on the University's website <https://www.bradford.ac.uk/about/legal-and-governance/governance/regulations/>) for postgraduate courses (Regulation 9).

Admission Requirements

We take into consideration a number of factors when assessing your application. It's not just about your grades; we take the time to understand your personal circumstances and make decisions based on your potential to thrive at university and beyond. Consideration of applications will be based on a combination of formal academic qualifications and other relevant experience.

The standard entry requirements for the programme are as follows:

- An Honours degree or equivalent in a chemical or biological discipline, at 2.2 classification or above.
- Applicants whose first language is not English will need to demonstrate proficiency in English in accordance with University Regulations.

For further details, see <https://www.bradford.ac.uk/international/entry-requirements/>

Applications are welcome from students with non-standard qualifications or significant relevant experience.

Recognition of Prior Learning

If applicants have prior certificated learning or professional experience which may be equivalent to parts of this programme, the University has procedures to evaluate and

recognise this learning in order to provide applicants with exemptions from specified modules or parts of the programme.

Minor Modification Schedule

Version Number	Brief description of Modification
July 2025	Annual Changes for the 2025 academic year, including changes to academic regulation.
May 2026	Annual Changes for the 2026 academic year, including changes to academic regulation.