Postgraduate courses in Cancer Therapeutics

- MSc Cancer Drug Discovery
- MSc Cancer Pharmacology
- MSc Drug Toxicology and Safety Pharmacology
- PhD Research
# Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Welcome to the Institute of Cancer Therapeutics</td>
<td>1</td>
</tr>
<tr>
<td>Our Courses:</td>
<td></td>
</tr>
<tr>
<td>MSc Cancer Drug Discovery</td>
<td>2</td>
</tr>
<tr>
<td>MSc Cancer Pharmacology</td>
<td>3</td>
</tr>
<tr>
<td>MSc Drug Toxicology and Safety Pharmacology</td>
<td>4</td>
</tr>
<tr>
<td>PhD Research</td>
<td>5</td>
</tr>
<tr>
<td>Special Features</td>
<td>6</td>
</tr>
<tr>
<td>The Student View</td>
<td>8</td>
</tr>
<tr>
<td>Admissions Requirements</td>
<td>10</td>
</tr>
<tr>
<td>Student Support</td>
<td>11</td>
</tr>
<tr>
<td>On and around Campus</td>
<td>12</td>
</tr>
<tr>
<td>City of Bradford and surroundings</td>
<td>14</td>
</tr>
<tr>
<td>City Campus map</td>
<td>16</td>
</tr>
<tr>
<td>How to find us</td>
<td>17</td>
</tr>
</tbody>
</table>

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**POSTGRADUATE ADMISSIONS OFFICE**

Institute of Cancer Therapeutics
University of Bradford
Bradford
West Yorkshire
BD7 1DP
fls-postgradcourse-admissions@bradford.ac.uk
tel: 01274 234706
www.cancer.brad.ac.uk

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**GENERAL COURSE ENQUIRIES**

Tel: 0800 073 1225 or 0300 456 2666 from mobiles
Fax: 01274 235585
Email: enquiries@bradford.ac.uk

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2249/100/10/2015
Welcome to the Institute of Cancer Therapeutics

The Institute of Cancer Therapeutics (ICT) is based in the science quarter at the heart of the University of Bradford campus. Our state-of-the-art building is configured to enable all the elements of the drug discovery process, in keeping with our mission to research and develop new treatments with a focus on cancer and other proliferative diseases.

It is a perfect setting for you to take advantage of our research and drug discovery expertise through the research programme or advanced courses we offer. You can choose to undertake advanced courses and research degrees that resonate with modern concepts in Cancer Pharmacology, Drug Toxicology and Safety Pharmacology, and Cancer Drug Discovery. Our taught courses in particular reflect the growing need to address specific areas of expertise within the pharmaceutical sector.

All taught courses and research degrees will require from you self-motivation in learning, enthusiasm for laboratory endeavour and a keen interest in the pharmaceutical and clinical relevance of your studies. Take full advantage of the research environment that this learning experience will allow, and you can exit with a qualification that will provide a strong basis for further career opportunities in academia and industry.

Our courses:
- MSc Cancer Drug Discovery
- MSc Cancer Pharmacology
- MSc Drug Toxicology and Safety Pharmacology
- PhD research

30 years of cancer research at Bradford
Cancer Drug Discovery
MSc

Course overview
Greater understanding of the molecular aspects of disease progression is continually providing new opportunities for chemical intervention in disease. Cancer Drug Discovery combines the expertise required in translating that understanding to the identification of suitable chemical entities, and the process of optimisation that ultimately leads to the discovery of new medicines.

This course is designed to provide you with a practice-based education in modern drug discovery, which meets the demand of employers in the pharmaceutical industry and equips you for further postgraduate and doctoral study in this field. Opportunities to learn the latest innovations in drug discovery are provided in the course, including rational and computer-aided drug design, and techniques in parallel synthesis.

The course uses modern teaching strategies such as computer-based courseware and assessment to encourage independent study as an integral component of advanced scholarship. A wide range of opportunities are provided to consolidate personal transferable skills particularly in oral and written presentation and informatics. In addition, an extended project in drug discovery will provide you with both a first-hand experience of the challenges in original research, as well as giving you an opportunity to put into practice the knowledge you have gained in drug discovery.

Table of modules

<table>
<thead>
<tr>
<th>Semester 1</th>
<th>Semester 2</th>
<th>Semester 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Critical Appraisal of a Current Topic in Drug Discovery</td>
<td>Principles of Drug Discovery</td>
<td>Research Project in Drug Discovery</td>
</tr>
<tr>
<td>Principles of Drug Discovery</td>
<td>Case Studies in Drug Discovery</td>
<td></td>
</tr>
<tr>
<td>Molecular Basis of Cancer and Cancer Therapy</td>
<td>Chemical Toolbox for Drug Discovery</td>
<td></td>
</tr>
<tr>
<td>Toxicology and Safety Pharmacology</td>
<td>Molecular Mechanisms of Toxicity</td>
<td></td>
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<tr>
<td>Research and Analytical Methods</td>
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Cancer Pharmacology
MSc

Course overview
This is an exciting time to be involved in cancer therapeutics. Our understanding of the molecular basis of cancer has dramatically altered the way in which cancer drugs are developed and evaluated. In both the laboratory and the clinic, cancer pharmacology has had to adapt to this changing face of drug development by establishing new experimental and target-orientated models.

This course provides an expert view of the available cancer medicines and development of new cancer therapies. It will meet the demands of employers and students at taught postgraduate level. The course uses a range of teaching strategies to promote independent study and research to develop a systematic and critical understanding of the molecular basis of cancer and cancer drug actions and fate.

The course will benefit from the multidisciplinary team of researchers in the field of anti-cancer drug design, synthesis, screening and pharmacology both at Bradford and through our extensive links with experts at other universities and industry.

Students will benefit from excellent research laboratories in a research-focused environment.

In addition to lectures and tutorials, it includes practical laboratory-based study and seminars. You will also undertake case studies, a critical appraisal of a current topic in cancer biology and a research project.

Table of modules

<table>
<thead>
<tr>
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<th>Semester 2</th>
<th>Semester 3</th>
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<td>Critical Appraisal of a Current Topic in Cancer Biology</td>
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<td>Research Project in Cancer Pharmacology</td>
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<td>Cancer Pharmacology</td>
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<tr>
<td>Preclinical Models for Drug Evaluation</td>
<td>Experimental Design</td>
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<td>Research and Analytical Methods</td>
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Drug Toxicology and Safety Pharmacology
MSc

Course overview
Discovery and development of new drugs and medicines is a complex and multidisciplinary process. In order to successfully develop these therapeutics we must first understand both their mechanism of action, and more importantly assess their potential to cause adverse or damaging effects upon the body. Assessment of these effects and characterisation of their mechanistic basis is a central and legal requirement within drug discovery and development.

This is a very dynamic and current discipline involving profiling of both known and novel mechanisms of secondary drug action, which in principle can lead to the success or failure of new therapeutics.

Our aim is to provide an industry-relevant course and equip students for careers or research in the development and safety assessment of new medicines. The course will address key aspects of preclinical drug evaluation through the study of drug discovery and development; safety pharmacology; mechanisms of drug-induced toxicities; regulatory affairs; and bioanalytical sciences.

In addition to lectures and tutorials, it includes practical laboratory-based study and seminars provided by scientists from regulatory agencies and pharmaceutical companies. You will also undertake case studies, a critical appraisal of current drugs or techniques appropriate to this discipline and a research project.

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Research
PhD

Overview
We welcome applications from motivated research students. We pride ourselves in being highly research active, with a truly global outlook. We have a strongly collaborative, interdisciplinary focus to our research. We attract funding from research councils, charities and other partnerships.

Research areas include:
- Design and synthesis of novel cancer medicines
- Cancer target exploration and drug development
- Development of model systems to investigate drug action and efficacy
- Metabolism and fate of cancer medicines
- Cancer proteomics
Staff Expertise
Multidisciplinary team of researchers in the field of:
- Drug design
- Synthesis
- Screening
- Pharmacology

Our teaching emphasis is on practical approaches to understanding drug design, development and pharmacology.

Focus on Practical Skills
- Practical, hands-on experience in research methods focused on discovery and use of cancer medicines using the specialist facilities and resources available in-house and at collaborating institutes.

Facilities and Resources
Extensive links with other university departments nationally and internationally to deliver the most current thinking in these subjects:
- Students will benefit from excellent dedicated laboratories in a research-focused environment
- Molecular Modelling
- Synthetic and Medicinal Chemistry
- Molecular Pharmacology
- Cell and Tissue Culture
- Drug Metabolism and Pharmacokinetics
- Mass Spectrometry and Proteomics
- Good Clinical Laboratory Practice

Industrial Links
- Extensive links with Leeds Medical School and NHS Trust Hospitals
- We are part of the Leeds-Bradford Cancer Research Centre and the Experimental Centre for Cancer Medicines
- Extensive commercial collaborations to facilitate the progression of new therapies and experimental delivery systems
- Major sponsorship from cancer charities and national funding
- Strong links with biotechnology and pharmaceutical companies

Financial Support
We attract funding from Yorkshire Cancer Research and other charities. The University of Bradford also has a range of scholarships and bursaries for alumni and self-financing students. [www.bradford.ac.uk/postgraduate/fees-and-funding/]

Close collaborations with clinicians in Bexley Oncology Wing, St James’s Hospital, Leeds
The Student View

**SHRUTI IYER**  
*MSc Cancer Pharmacology*

I looked at many universities online but the thing that attracted me to the University of Bradford was my subject. The MSc in Cancer Pharmacology was unique.

On my course I learned a lot about pharmacology, which wasn’t my area before as I did my Bachelor’s degree in genetic engineering. The project I did for my Master’s was wonderful and very interesting.

My course was very hands on and met industry requirements. It gave me the skills I needed for certain jobs. I was also taught research training methods and how to write a thesis - something I will never forget.

My teachers all had doctorates - every one of them was a researcher. They were all highly experienced and very knowledgeable. I felt blessed to have lived in that atmosphere surrounded by this knowledge.

The facilities were everything my research required - the building from the outside looked like any other office building but inside it was full of labs and people in lab coats and equipment.

I want to become a cancer researcher ultimately - I’ve wanted to do that since I was 13. I saw people around me suffering and dying in India and I wanted to help.

**FIRAS ALI MOHAMMED RAHOUM**  
*MSc Cancer Pharmacology*

It was a great pleasure to study here in the ICT building with all the amazing staff and workers. I was looking forward to improving the outcome and understanding of cancer as it is a major cause of mortality worldwide.

As a doctor I couldn’t achieve that by only treating the patients and waiting for somebody else to enhance and develop treatment for them without participating in the process myself. I therefore decided to combine my expertise in the medical field together with an understanding of the molecular biology of cancer and how to improve the treatment of cancer, and it was one of the wisest decisions I have made in life.

I would definitely recommend others to study at the ICT.

In the future I would like to continue my work as a physician as well as participating in both in vitro an in vivo studies to achieve a better life for cancer patients.
I wanted to enhance my career prospects as a teacher and I felt completing an MSc would set me apart from other candidates to become the Head of Science in a few years’ time.

I liked how the course incorporated current research into the field of cancer but did not solely revolve around it, thus providing a more generalised, rather than specific, field of learning. The course addressed key aspects in the safety pharmacology of drugs throughout preclinical and clinical settings and the underlying mechanisms of how drugs can cause specific toxicities.

The course has the perfect balance between theoretical learning in lectures and hands-on experience by putting our theoretical learning into practice, in the form of lab practicals.

I was taught by a variety of lecturers from the Institute of Cancer Therapeutics who are involved in various research projects revolving around anticancer therapy. As part of the programme we had a variety of guest lecturers from a diverse range of backgrounds in science.

My course has helped spark a greater in-depth interest and knowledge into science and science-related research, which I feel will help me teach chemistry with a greater passion and enthusiasm. The numerous presentations have also enabled me to continue developing my public speaking.

I would strongly recommend the University of Bradford for undergraduate or postgraduate study. The facilities alone are exceptional and after personally visiting other university campuses, they did not compare to the modern facilities of Bradford. In addition, the small size of the campus and variety of sports and societies to join creates a close community feel which makes learning and socialising a memorable experience.

The campus is very big and offers a wide range of places for food, drinking and studying individually or in teams. The campus also has a fitness area “unique gym” and that saves a lot of time to enjoy exercising while being on the campus.

The knowledge and the lab experience I gained from this course, allowed me to get a very good job in a respected university back in my country as an organic lab lecturer.
Admissions

Applicants should have a 2:2 degree or above in a relevant scientific discipline.

Applications are welcome from candidates with non-standard qualifications, who have significant relevant experience; each case will be considered on its merits.

Course Starting

September.

Fees

For up-to-date information about our postgraduate course fees please see www.bradford.ac.uk/fees-and-financial-support/

English Language Requirements

If your native language is not English, you will need to pass a test in English approved by the University before you can be admitted. The International English Language Testing System test (IELTS) administered by the British Council is the test which is preferred by the University. You will need to achieve an overall score of at least 6.0, with at least 5.5 in each of the four sub-tests (speaking, listening, reading, writing). Testing facilities are available at most British Council overseas offices. When you take the test, you should ask for a copy of your Test Report Form to be sent to the University.

Alternative English language tests include:

- The Pearson Test of English Academic (PTE-A), for which you will need to achieve an overall score of at least 55, with at least 51 in each of the four sub-tests; or
- TOEFL, for which you will need to score at least 80 on the internet-based test, with sub-tests not less than Speaking 20, Listening 17, Reading 18, Writing 17.

Please note we no longer accept the TOEIC test.

English Language Test providers:

Web: IELTS - www.ielts.org
Web: TOEFL - www.ets.org
Web: Pearson PTE Academic - www.pearsonpte.com

For more information, see

www.bradford.ac.uk/english-language-requirements

How to Apply

Please apply online at www.bradford.ac.uk/postgraduate/how-to-apply/
International Office
We have a long-standing tradition of welcoming students from overseas and we are used to making newcomers to Bradford quickly feel at home. The International Office is here to help you both before and when you arrive. They also arrange regular trips throughout the year to places of interest such as historic cities, famous towns, castles and stately homes, as well as the beautiful countryside in the surrounding area.

Students with Disabilities
The Faculty of Life Sciences has always encouraged applications from students with disabilities, whose applications are considered on the same academic grounds as are applied to all candidates. We make special provisions to provide a suitable learning environment wherever possible. For more information, help and advice, please contact the Disability Service.

English Language Support
We offer a range of courses for applicants who require English language support. All students have access to free English language support classes for the duration of their studies. There are also drop-in sessions for students, as well as a full programme of English Language/Academic Skills workshops. Please visit our website for details: www.bradford.ac.uk/international/english-language-support/ and www.bradford.ac.uk/study/languages
Bradford

On and around Campus

We’ve invested over £150 million in our bustling City Campus and Emm Lane Campus to make sure you get the most out of your time here - whether you’re studying, working, relaxing or playing.

Located just five minutes’ walk from Bradford city centre, the centrepiece of our refurbished campus is the three-storey Student Central building – the heart of student activity and home to University of Bradford Students’ Union.

Our new developments are among the most environmentally-friendly buildings in the world, and have seen us win numerous awards including the Chartered Institution of Building Services Engineers (CIBSE) Carbon Champion of Year 2012.

Around Campus

You can choose from a wide range of places to eat and drink, including the Global Food Market Atrium Restaurant, which offers vegan and halal options, and many other bars and cafés where you can catch up with your coursemates over a cappuccino or celebrate with friends on a night out. The campus also boasts its own theatre, library, art gallery and music centre.

Student Central

The Ents Mall houses four bars, a patio terrace and a 1,300-capacity nightclub. The Union Mall has open spaces for group study, student advice centres and a well-stocked shop. You’ll also find plenty of social and study spaces around the central atrium, with teaching rooms, a 130-seat lecture theatre, student services and a computer cluster.

Award-winning Facilities

Our award-winning £40 million student accommodation, The Green, opened in September 2011.

Our Fitness & Lifestyle sports centre boasts a range of top facilities including a gym, swimming pool and climbing wall, with a packed programme of classes, beauty treatments and children’s activities available at hugely competitive prices (visit www.bradford.ac.uk/unique for more details).

There’s also plenty of open green space for you to enjoy on campus, including the grass amphitheatre outside Student Central which plays host to everything from sunbathing in summer to sledging in winter.

Students studying Management or Law-related subjects study at the dedicated Emm Lane parkland campus, two miles (25 minutes’ walk) from the city centre, where beautiful historic buildings stand side by side with the latest state-of-the-art facilities. A dedicated free bus service takes students between the Emm Lane Campus and the City Campus.

Accommodation

During your first year you will be guaranteed a place at our £40m award-winning eco-friendly student village, The Green. Buildings are arranged as a small village, with rooms available in apartments or townhouses. Every building meets the highest standards of sustainability, meaning it costs very little to heat and light. The Green has a real community feel. It is set in beautiful landscaped gardens, with places to relax and socialise. For more details about what’s available for our students, and for costs, visit www.bradford.ac.uk/accommodation.

In subsequent years most students choose to live in privately rented accommodation. Student accommodation is cheaper, easier to find and more conveniently located in Bradford than in most other university cities. Many students live within five minutes of their lectures! Unipol Student Homes (www.unipol.org.uk/bradford) offers a free advice service to students, and is a good way of finding a good-quality, safe place to live at a reasonable cost.
£40m
award-winning, eco-friendly
student accommodation,
The Green

120+
student societies and sports clubs

City of Bradford and surroundings

Bradford is a vibrant, friendly, creative and cosmopolitan city with a population of over half a million people speaking around 70 different languages.

With a lively nightlife and a host of shops, cinemas, sporting venues and cultural attractions, it’s also one of the least expensive student cities in the UK – offering you great value for money too. Social life in Bradford thrives in the multitude of small, independent bars and restaurants dotted around the city centre which, once discovered, will become like a second home. You’ll also find an abundance of art, music and theatre on your doorstep with a wide variety of clubs and venues within a few minutes’ walk of the City Campus.

The National Media Museum is one of the most visited museum attractions outside London, while the Alhambra Theatre is a major touring venue offering top West End shows, contemporary dance and ballet. There’s also a wealth of grassroots culture to explore, from artist sound walks around historic Manningham to the flourishing poetry and local music scenes.

To support student travel around the city, a free bus service links the City Campus to the two railway stations, the bus station and the city centre.

A global city
We’re a multicultural community, hosting a diverse range of dazzling street events and flamboyant festivals such as the annual Bradford Festival, a vibrant, colourful and multicultural programme of theatre, art, music and dance from around the world. The city’s restaurants serve up a delicious menu of world cuisine including Polish, Chinese, Italian and Middle Eastern, while our famous curry houses earned Bradford the title of Curry Capital of Britain for a record-breaking fourth year in a row - 2011, 2012, 2013 and 2014.

Historically, Bradford was at the heart of the Industrial Revolution and its rich Victorian heritage is evident right across the city with an abundance of handsome architecture. More recent introductions include City Park, an award-winning six-acre landscaped space at the very heart of the city centre, featuring a 4,000 square metre mirror pool, spectacular laser light projections and over 100 fountains.

Almost three-quarters of the City of Bradford district is green open space. The beautifully landscaped Lister Park is within walking distance of the city centre, and is situated next to the University’s Faculty of Management and Law.

The surrounding countryside is equally breathtaking. The towns and villages of Saltaire, Ilkley and Haworth are all popular tourist attractions that are well worth a visit in their own right.
74% of the City of Bradford district is made up of green space.
Getting here
Bradford is easy to get to, located right in the middle of the UK with excellent road and rail links and its own international airport. An extensive coach service also connects most parts of the country with Bradford’s Travel Interchange. Postcodes for our sites are BD7 1DP (Sat Nav postcode BD7 1AZ) for the City Campus and BD9 4JL for the Emm Lane Campus.

By road
Bradford is connected to the national motorway network by the M62 and M606, which we recommend you use if arriving from the south, east or west. Use the A629/A650 via Skipton and Keighley if arriving from the north west, or the A1 or A19 if arriving from the north east. The University is clearly signposted on all major routes into the city. Approximate travel distances are:

<table>
<thead>
<tr>
<th>Destination</th>
<th>Distance</th>
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<tbody>
<tr>
<td>London</td>
<td>200 miles (320 km)</td>
</tr>
<tr>
<td>Leeds</td>
<td>8 miles (13 km)</td>
</tr>
<tr>
<td>York</td>
<td>33 miles (53 km)</td>
</tr>
<tr>
<td>Manchester</td>
<td>35 miles (56 km)</td>
</tr>
<tr>
<td>Birmingham</td>
<td>120 miles (192 km)</td>
</tr>
<tr>
<td>Edinburgh</td>
<td>200 miles (320 km)</td>
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By air
Leeds/Bradford International Airport has a range of daily domestic flights to/from destinations across the UK, as well as regular connecting flights to/from Amsterdam and other major European locations. Manchester Airport, 50 miles away, serves a range of international destinations.

By rail
Bradford Interchange has extensive rail links, many of which involve changing at Leeds. There are some direct trains from London to Bradford. The free City Bus service operates between the railway stations and the City Campus. Approximate journey times are:

<table>
<thead>
<tr>
<th>Destination</th>
<th>Journey Time</th>
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<tbody>
<tr>
<td>London (King’s Cross)</td>
<td>3 hours</td>
</tr>
<tr>
<td>Leeds</td>
<td>20 minutes</td>
</tr>
<tr>
<td>York</td>
<td>1 hour</td>
</tr>
<tr>
<td>Manchester</td>
<td>1 hour</td>
</tr>
<tr>
<td>Birmingham</td>
<td>3 hours</td>
</tr>
<tr>
<td>Edinburgh</td>
<td>4 hours</td>
</tr>
<tr>
<td>Glasgow</td>
<td>4 hours</td>
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