



## MSc Cancer Biology and Therapeutics

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### Programme Specification

<b>1. Programme title</b>	MSc Cancer Biology and Therapeutics
<b>2. Awarding institution</b>	Middlesex University
<b>3a. Teaching institution</b>	Middlesex University / Hendon
<b>3b. Language of study</b>	English
<b>4a. Valid intake dates</b>	Sept
<b>4b. Mode of study</b>	FT/PT
<b>4c. Delivery method</b>	<input checked="" type="checkbox"/> On-campus/Blended <input type="checkbox"/> Distance Education
<b>5. Professional/Statutory/Regulatory body</b>	n/a
<b>6. Apprenticeship standard</b>	n/a
<b>7. Final qualification available</b>	MSc/PGDip/PGCert Cancer Biology and Therapeutics PGCert Biomedical Science

<b>8. Year effective from</b>
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<b>2022</b>
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### **9. Criteria for admission to the programme**

Candidates must meet at least one of the first two criteria below:

- i. A good honours degree (minimum 2.ii) or equivalent qualification, in an appropriate subject.
- ii. Applicants with other qualifications and / or substantial work experience in biomedical science will also be considered under the Recognition of Previous Learning (RPL) scheme. Past learning or experience will be mapped against existing programme modules within the programme and the mapping will be considered by the Faculty RPL Sub-committee.
- iii. Overseas Candidates should also be competent in English and have achieved, as a minimum, one of the following standards: IELTS 6.5 (with minimum 6.0 in all components); TOEFL 84.

Applicants with a disability can enter the programme following assessment to determine if they can work safely in the laboratory. The programme team have experience of adapting teaching provision to accommodate a range of disabilities and welcome applications from students with disabilities.

### **10. Aims of the programme**

The MSc programme aims to:

1. Prepare students for independent research careers in academia, diagnostic laboratories or the biotechnology sector in cancer diagnostics and treatments field.
2. Equip students with a mastery of the fundamental principles and recent advances in cancer diagnostics and anti-cancer drug delivery.
3. Give students a thorough grounding in the fundamental mechanisms underpinning the major pathological processes in common malignancies.
4. Provide students with sufficient detailed information about the modern technologies used in cancer diagnostics and research to enable them to apply these to complex problem solving in the investigation of cancers.
5. Enable students to understand and use the principles of laboratory management, safety, quality control, research, and statistical methods in their professional lives.
6. Enable students to critically evaluate legal requirements for human and animal experiments and ethical issues relating to cancer research with human subjects and human tissue.
7. Provide students with the tools to acquire the essential facts, concepts, principles, and theories relevant to their chosen research project.
8. Give students the ability to critically evaluate current research literature in cancer diagnostics and management, and an acquisition of the skills for lifelong learning

9. Allow students to develop mastery of management, leadership and communication skills, teamwork, writing and presentation skills.

In addition, on completion of the MSc project the successful student will:

10. Have acquired the design, critical analysis, and practical skills necessary to carry out an individualised experimental research project.

11. Have developed the skills to evaluate literature in context to their current cancer research and propose new hypotheses relevant to their research.

## **11. Programme outcomes**

### **A. Knowledge and understanding**

On completion of this programme the successful student will have acquired mastery of:

A1. The aetiology and pathology and treatment of common cancers

A2. Ethics issues in biomedical science

A3. Diagnostic techniques in various cancers

A4. Research methods

A5. Leadership and laboratory Management

### **Teaching/learning methods**

Students gain knowledge and understanding through lectures, seminars and laboratory work, self-study (both directed and self-directed) and online learning.

### **Assessment Method**

Students' knowledge and understanding is assessed by both summative and formative assessments, which include seminar presentations, written assignments including laboratory reports.

### **B. Skills**

On completion of the MSc programme the successful student will be able to:

B1. Develop ideas through the evaluation of appropriate literature, concepts, and principles

- B2. Analyse, present, interpret and critically evaluate biomedical data
- B3. Develop a research project
- B4. Competently perform advanced biomedical laboratory techniques in accordance with health and safety guidelines. In addition, on completion of the MSc project, the successful student will be able to:
- B5. Propose new hypotheses relevant to discipline
- B6. Critically evaluate their research findings in the context of the literature research
- B7. Carry out research experiments

### **Teaching/learning methods**

Students learn skills through analysis of research literature and undertaking a research project that they have designed themselves, including consideration of the inherent ethical and health and safety implications.

### **Assessment Method**

Students' skills are assessed by written work, presentations, and a research project. Students' practical skills are assessed by laboratory reports and dissertation.

## **12. Programme structure (levels, modules, credits and progression requirements)**

### **12. 1 Overall structure of the programme**

#### **MSc Cancer Biology and Therapeutics (Full-time)**

##### **Autumn Term (Oct)**

BMS4887 Experimental Design and Statistics (15 credits)

BMS4977 Bioanalytical Techniques (15 credits)

BMS4507 Advances in Tumour Diagnosis (15 credits)

BMS4327 Haemato-oncology (15 credits)

**Winter Term (Jan)**

BMS4477 Bioethics (15 credits)

BMS4677 Leadership and Management (15 credits)

BMS4547 Cancer Therapeutics (15 credits)

BMS4227 Cancer (15 credits)

**Summer Term (June-Sept)**

BMS4997 Research Project (60 credits)

**MSc Cancer Biology and Therapeutics (Part-time)****Year One****Autumn Term (Oct)**

BMS4507 Advances in Tumour Diagnosis (15 credits)

BMS4327 Haemato-oncology (15 credits)

**Summer Term (June-Sept)**

BMS4547 Cancer Therapeutics (15 credits)

BMS4227 Cancer (15 credits)

**Year Two****Term 1 (Oct)**

BMS4887 Experimental Design and Statistics (15 credits)

BMS4977 Bioanalytical Techniques (15 credits)

**Terms 2 (Jan)**

BMS4477 Bioethics (15 credits)

BMS4677 Leadership and Management (15 credits)

**Term 3 (June-Oct)**

BMS4997 Research Project (60 credits)

If students attained at least 60 credits, they will be eligible for a PGCert. To attain a PGCert in Cancer Biology and Therapeutics, they must pass all the specialist modules. If they did not pass all specialist modules, they will be eligible for a PGCert in Biomedical Science. Completion of all core and specialist taught modules, but non-completion of the 60-credit dissertation module will lead to the award of PGDip Cancer Biology and Therapeutics.

## **12.2 Levels and modules**

### **Level 7**

#### **COMPULSORY**

For the MSc, students must take all of the following:

BMS4507 Advances in Tumour Diagnosis  
BMS4227 Cancer  
BMS4327 Haemato-oncology  
BMS4547 Cancer Therapeutics  
BMS4477 Bioethics  
BMS4677 Leadership and Management  
BMS4887 Experimental Design and Statistics  
BMS4977 Bioanalytical Techniques  
BMS4997 Research Project

#### **OPTIONAL\***

None

#### **PROGRESSION REQUIREMENTS**

To progress onto the project/MSc stage, students must pass 105 credits including BMS4887.

\*Please refer to your programme page on the website re availability of option modules

## **12.3 Non-compensatable modules**

**Module level:** Level 7

**Module code** *BMS4507 BMS4227 BMS4327 BMS4547 BMS4887 BMS4997*

## **13. Information about assessment regulations**

This programme will run in line with general University Regulations:

#### **14. Placement opportunities, requirements and support (if applicable)**

Not applicable

#### **15. Future careers / progression**

Graduates could pursue a scientific career in cancer related research, academia, or in the field of biotechnology and pharmaceutical industries focusing on developing novel cancer diagnostic tool and discovering potential anti- cancer drugs.

#### **16. Particular support for learning (if applicable)**

We have specialist laboratory facilities for the development of practical skills. Our laboratories for research and postgraduate teaching are based at Hendon. These include a molecular biology lab for techniques such as DNA sequencing, real-time PCR, electrophoresis, Tissue Culture facility, Accuri C6 flow cytometer as well as a fully equipped proteomics facility. Access to specialist journals will be provided by Middlesex University Library. For ease of access for students based at Hendon, the library has facilities for inter-library photocopying of any articles required. Other articles may be obtained from the British Library in London where a similar arrangement for photocopying articles exists. Applicants with a disability can enter the programme following an assessment of their needs to determine if they can work safely in the laboratory.

The programme team have experience of adapting the programme to accommodate a range of disabilities in students on the biomedical science programmes and welcome applications from such students. This will be administered by the Dyslexia and Disability Service in conjunction with the programme leader. Learning resource services and facilities at Middlesex include a CAL suite and internet access as well as English learning and Language Support Learning resources and other support for modules is delivered via MyUniHub.

**17. HECos code(s)** CAH01-01-01

**18. Relevant QAA subject benchmark(s)** Biomedical Sciences

#### **19. Reference points**

The following reference points were used in designing the programme.

Internal Documentation:



Middlesex University (2021) Middlesex University Regulations. London, MU

External Documentation:

1. Quality Assurance Agency (2020) QAA Master's Degree Characteristics. London, QAA

## **20. Other Comments**

N/A

Please note programme specifications provide a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve if s/he takes full advantage of the learning opportunities that are provided. More detailed information about the programme can be found in the rest of your programme handbook and the university regulations.

## **21. Curriculum map for MSc in *Cancer Biology and Therapeutics***

This section shows the highest level at which programme outcomes are to be achieved by all graduates, and maps programme learning outcomes against the modules in which they are assessed.

### **Programme learning outcomes**

#### **Knowledge and understanding**

A1 The aetiology, pathology and treatment of common cancers

A2 Ethical issues in biomedical science

A3 Diagnostic techniques in various cancers

A4 Research methods

A5 Leadership theories and laboratory management

#### **Skills**

B1 Develop ideas through the evaluation of appropriate literature, concepts, theories and principles

B2 Analyse, present, interpret and critically evaluate biomedical data

B3 Develop a research project

B4 Competently perform advanced biomedical laboratory techniques in accordance with health and safety guidelines

B5 Propose new hypotheses relevant to discipline

B6 Critically evaluate their research findings in the context of published literature

B7 Carry out research experiments

**Programme outcomes** A1 A2 A3 A4 A5 B1 B2 B3 B4 B5 B6 B7

**Highest level achieved by all graduates** 7 7 7 7 7 7 7 7 7 7 7 7 7

**MSc Cancer Biology and Therapeutics**

Module title	Module code by level	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7
Leadership and Management	BMS4677					x	x						
Bioethics	BMS4477		x				x						
Experimental Design and Statistics	BMS4887				x			x	x				
Advanced Bioanalytical Techniques	BMS4977			x				x		x			
Research Project	BMS4997		x		x			x	x		x	x	x

Cancer	BMS4227	x		x			x	x					
Haemato-oncology	BMS4327	x		x			x	x					
Advances in Tumour Diagnosis	BMS4507	x		x			x	x					
Cancer Therapeutics	BMS4547	x		x			x	x					