

## PROGRAMME SPECIFICATION

**Awarding body/institution:** Queen Mary, University of London

**Teaching institution (if different from above):**

**If accredited by a professional/statutory body, please give the name, date of last accreditation visit and approximate date of next visit:** Not applicable

**Name of the final award:** BMedSci (Hons)

**Programme title:** BMedSci Molecular Therapeutics

**UCAS code:** Not applicable

**Criteria for admission to the programme:**

Medical undergraduates should have completed 4 years of an MBBS degree programme and have met the extant School criteria of academic attainment for acceptance on an Intercalated degree course.

**Aims of the programme:**

The highest academic achievers within the MBBS programme have always been encouraged to intercalate for a year to pursue an Honours degree in an aspect of Medicine with a particular research focus. BMedSci (Hons) has always proved popular in this regard. The primary aim of this pathway through the existing BMedSci programme is to provide students with the opportunity to specialise in Pharmacology to first-degree level as an adjunct to their medical studies, and as a preparation for a potential future career in academic Medicine. The field of clinical therapeutics is becoming increasingly scientific, molecular and mechanistic in approach, with new therapies based upon strategic intervention in well-defined biological pathways. Practitioners and researchers therefore require increasingly specialist knowledge in molecular and cellular biology, biochemistry and chemistry. This one-year Intercalated degree will provide a framework of expertise in this discipline and practical experience in clinical and basic science laboratory research.

Departments within the William Harvey Research Institute have an international reputation in the field of molecular therapeutics, particularly in the areas of cardiovascular disease and inflammation. There is a good existing track-record in teaching on Intercalated degrees, as all the above-named departments already contribute option modules to the existing BMedSci programme pathways, and play a significant part in the core teaching module.

The proposal fits within College and School strategies to provide places for our best students in order that they be retained during their Intercalating year, and also eventually to attract suitable candidates from other institutions.

**Learning outcomes for the programme:**

At the conclusion of the course, the students will have the ability to:

- understand fundamental physiological and biochemical processes relating to immunity, inflammation, stress responses, cardiovascular and musculo-skeletal function
- appreciate the mechanisms of common inflammatory, autoimmune diseases with particular reference to those with cardiovascular and musculo-skeletal implications
- discuss the molecular basis of therapeutics and common drug modalities associated with cardiovascular and autoimmune diseases
- explain novel chemical and biologic agents being developed for the treatment of such diseases
- provide an ethical framework for the pursuit of clinical and laboratory research and for therapeutic intervention
- achieve proficiency in basic laboratory skills and safety
- exhibit an understanding of information & communication technology and statistical competence to allow analysis and reporting of results
- study a research area in depth by pursuing a research project and disseminating the results and conclusions of that work in an appropriate manner

***Teaching, learning and assessment strategies:***

Overall Course Timetable:

Autumn Term:	Core Module	9.5 weeks
	Core Module Assessment	1 week
Spring Term:	Option Module teaching	3 weeks
	Assigned Project	10 weeks
Summer Term:	Assigned Project	4.5 weeks
	Revision time	1 week
	Examination period	3 weeks

Students undertaking BMedSci (Mol Ther) will undertake the core module (10.5 weeks) of the programme in the Autumn Term and an option module in the Spring / Summer terms (21.5 weeks) exactly as within the existing programme.

In order to be awarded the BMedSci (Hons) Molecular Therapeutics degree, students will be required to undertake the following course units:

1. Bioanalysis / Basic Pharmacology / Statistics / IT
2. Molecular Pharmacology
3. Clinical Pharmacology
4. Molecular Medicine
5. Option Module / Ethics and Law applied to research
6. 7. 8. Laboratory Project

The students would also have to choose one of the following option modules:

1. Clinical Pharmacology
2. Inflammation Science
3. Vascular Pharmacology
4. Immunotherapeutics

Assessment methods:

Students will undertake a 3 hr written examination in December of the Autumn term (week 11) and will submit an integrative assignment at the end of the first term. It is envisioned that each BMedSci pathway will have its own discrete section of the examination paper. Thus a

section of the written paper will relate specifically to molecular therapeutics and will be directed only to those students undertaking this course.

The integrative assignment will relate to an area of therapeutics. Practicals will undergo continuous assessment and marks will contribute to the final core mark according to the current protocol.

Option module assessments will proceed in exactly the same way as at present with no alteration. Students will be assessed on their project write-ups, an integrative assignment to be completed during the Spring term, and by a 3-hour written examination in the Summer term.

### ***Programme structure and requirements, levels and courses***

#### General Scale of Assessment

70% or above	1st Class Honours
60 – 69.99%	2 <sup>nd</sup> Class Honours, Upper Division
50 – 59.99%	2 <sup>nd</sup> Class Honours, Lower Division
45 – 49.99%	3 <sup>rd</sup> Class Honours
40 – 44.99%	Pass degree
< 40%	Fail

All modules are at Level 3.

#### Core Module (Autumn term) 4 units:

2 units of core components shared with all BMedSci students

*Marks contribute 10% each = 20% of final degree*

2 units of molecular and clinical therapeutics

*Marks contribute 10% each = 20% of final degree*

#### Option Module (Spring and Summer terms) 4 units:

1 unit of ethics (shared with all BMedSci students) / option module teaching (unique to option)

*Marks contribute 25% of final degree*

3 units of experimental research

*Dissertation and oral examination contribute 35% of overall degree marks*

#### Core Courses

*Molecular Therapeutics (1 unit)*

Basis of cell biology

Introduction to immunity

Endothelial biology

Signal transduction

Mechanisms of drug action

Receptor theory

Pharmacogenetics

Pharmacokinetics

Drug development and testing-

+ 4 practical classes

*Clinical Therapeutics (1 unit) + 4 practical classes*

Cardiovascular disease – mechanisms and clinics

Bone and joint diseases –mechanisms and clinics

Clinical monitoring

Adverse drug interactions

Novel therapeutic strategies

Gene therapy

Other biologics

+ 4 practical classes

*Shared Core Components (2 units)*

Biosciences and informatics

Molecular Medicine

Statistics

Ethics and Law applied to Medical Research

***Indicators of Quality***

*(Please include details of: SSLC meetings, student feedback mechanisms, personal tutor arrangements, programme induction, programme review and monitoring.)*

Student representatives attend the BMedSci Committee and planning meetings, and give oral feedback on course progress and student opinion. There is a student feedback form provided for all core module lectures and practicals. In 2003-04 there was a 72% response rate for returns. Student responses are fed back to tutors and lecturers to inform and shape the subsequent year's programme.

Each student is allocated to a personal tutor at the beginning of the academic year.

The first week of the course is set aside for programme induction of new students. At the end of the core module there is a staff – student review meeting held to discuss issues that have arisen during the module.

***Employers Links***

*Please provide details of any links with employers e.g.*

- *Details of advisory panels that include current or potential employers;*
- *Organisations that regularly employ graduates from this programme and the roles that graduates undertake.*
- *Student prizes donated by organisations that may offer employment to graduates from this programme.*

This Intercalated medical degree course is a special case as far as employers are concerned as > 95% of students will occupy jobs within the NHS on graduation.

Prizes for BMedSci students are donated by the Drapers Company and by the British Society for Pharmacology. The latter, whilst not offering employment to graduates, is a professional body for co-ordinating clinical pharmacology practice and research.

Person Completing Programme Specification	Professor NJ Goulding
Person responsible for management of programme	Professor NJ Goulding
Date programme specification agreed by Department or teaching and learning committee	
Date of completion of programme specification:	

Date of approval by Faculty Board/EB:	
Date of update/amendment:	20 <sup>th</sup> October 2004