Programme Specification for the MSc in Molecular Medicine

This specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. This specification provides a source of information for students and prospective students seeking an understanding of the nature of the programme and may be used by the College for review purposes and sent to external examiners. More detailed information on the learning outcomes, content and teaching, learning and assessment methods can be found in the course handbook online at http://www.imperial.ac.uk/medicine/teaching/postgraduate/molecularmedicine/. The accuracy of the information contained in this document is reviewed by the College and may be checked by the Quality Assurance Agency.

1. Awarding Institution: Imperial College London
2. Teaching Institution: Imperial College London
3. External Accreditation by Professional / Statutory Body: N/A
4. Name of Final Award (BEng / BSc / MEng, MSc, MRes etc.): MSc and DIC
5. Programme Title (e.g. Biochemistry with Management): Molecular Medicine
6. Date of production / revision of this programme specification October 2013
7. Name of Home Department: Medicine
8. Name of Home Faculty: Medicine
9. UCAS Code (or other coding system if relevant): A3TX
10. Relevant QAA Subject Benchmarking Group(s) and/or other external/internal reference points N/A
11. Level(s) of programme within the Framework for Higher Education Qualifications (FHEQ) http://www.qaa.ac.uk/Publications/InformationAndGuidance/Pages/quality-code-A1.aspx

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<tr>
<th>Master’s (MSc)</th>
<th>Level 7</th>
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12. Mode of Study: Full Time – 1 calendar year
13. Language of Study: English
14. Educational aims/objectives of the programme

The programme aims/objectives are to:

- Provide postgraduate students with backgrounds in either basic science, medicine, dentistry or veterinary science with an advanced academic and laboratory research training in modern cellular and molecular medicine, with emphasis on the interface between the basic and clinical aspects of the subject.
- Produce postgraduates equipped to pursue careers in molecular medicine, in academia, in hospitals, in industry, the public sector and non-governmental organisations;
- Provide a solid foundation for those who intend to go on to study for a PhD;

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• Develop understanding of processes at the molecular and cellular level;
• Provide a training in laboratory and research skills;
• Provide a supportive learning environment;
• Attract highly motivated students, both from within the UK and from overseas;
• Develop new areas of teaching in response to the advance of scholarship and the needs of vocational training.

At the end of the taught element students should have a good understanding of:

• The molecular and cellular mechanisms involved in the development and regulation of cells and tissues under normal and disease states
• Advanced molecular and cellular biology methodology
• Gene Expression and its role in disease
• Molecular Genetics and its application to study disease
• Practical techniques in molecular and cellular biology and medicine.

At the end of the seven months research component the students will have:

• Experienced a thorough training in the methods and ethos of laboratory research including:
• The design of a good research project
• Designing and planning of experiments
• Trouble shooting for experimental problems
• Data presentation, analysis and interpretation
• Literature searching
• Critical review
• Preparation and presentation of work for publication (in the form of a written report)
• A clear understanding of good laboratory practice, including safety.

15. Programme Learning Outcomes Knowledge and Understanding

1. Knowledge and Understanding

Knowledge and Understanding of:

1.1. Fundamental principles of molecular and cellular biology;
1.2. Modern technologies of molecular biology;
1.3. Molecular biology applied to investigation of disease, including infectious diseases, genetic diseases, cancer, haematology;
1.4. Practical research techniques, including essential molecular biology methodologies; Southern blotting, library screening, isolation of recombinant DNA, PCR and DNA sequencing technologies;
1.5. Detailed knowledge and understanding of the essential facts, concepts, principles and theories relevant to the student’s chosen research project;
1.6. Management and communication skills, including problem definition, project design, decision processes, teamwork, written and oral reports, scientific publications.

Teaching/learning methods and strategies:

Acquisition of 1.1 to 1.4 is through a combination of lectures, seminars, tutorials and laboratory work, and coursework, (October to February).

Acquisition of 1.5 is through the full-time, individual, supervised research project (March to September).
Acquisition of 1.6 is through a combination of lectures, laboratory exercises, coursework, small group projects linked to workshops with group and individual presentations.

Throughout the students are encouraged to undertake independent reading both to supplement and consolidate what is being taught/learnt and to broaden their individual knowledge and understanding of the subject.

Assessment of the knowledge base is through a combination of unseen written examinations (1.1-4, 1.6) and assessed coursework (1.1 - 4, 1.6) in the form of laboratory write-ups (1.1 - 4), essays (1.1 - 4), and the individual research project report and viva (1.5 - 6).

2. Skills and other Attributes

Intellectual Skills: able to

2.1. Understand the nature of disease in terms of molecular and cellular biology
2.2. Integrate and evaluate information from a variety of sources
2.3. Formulate and test hypotheses
2.4. Be creative in the solution of problems and in the development of hypotheses
2.5. Plan, conduct and write-up a programme of original research.

Teaching/learning methods and strategies

Intellectual skills are developed through the teaching and learning methods outlined above and in section 17.

Analysis and problem solving skills are further developed through the tutorials.

Experimental design and research skills are developed in lectures and course practical work in the course and subsequently in the individual research project. Individual formative feedback is given to students on all work produced including oral presentations. The Exams, held in February, provides important feedback on student progress.

Assessment of thinking skills is partly achieved through coursework, unseen written examinations and the individual research project but also in assessed practicals and course work.

Practical Skills: able to

3.1. Plan and execute safely a series of experiments;
3.2. Use laboratory equipment to generate data;
3.3. Analyse experimental results and determine their strength and validity;
3.4. Prepare technical reports;
3.5. Give technical presentations;
3.6. Use the scientific literature effectively;
3.7. Use computational tools and packages.

Teaching/learning methods and strategies

Practical skills are developed through the teaching and learning programme outlined above (and in section 17).

Practical experimental skills (3.1 to 3.3) are developed through laboratory practicals and project work.

Skills 3.4 and 3.5 are taught and developed through feedback on reports written and presentations made as part of coursework.

Skill 3.6 is developed through lectures, coursework reports and essays, and the individual supervised research project.

Skill 3.7 is taught and developed through coursework exercises and project work.

Practical skills are assessed through laboratory experiment write-up and the research project dissertation.
**Professional Skills Development:** able to

4.1. Communicate effectively through oral presentations, computer processing and presentations, written reports and scientific publications;

4.2. Apply statistical and modelling skills;

4.3. Management skills: decision processes, objective criteria, problem definition, project design and evaluation, risk management, teamwork and coordination, extension needs;

4.4. Integrate and evaluate information from a variety of sources;

4.5. Transfer techniques and solutions from one discipline to another;

4.6. Use Information and Communications Technology;

4.7. Manage resources and time;

4.8. Learn independently with open-mindedness and critical enquiry;

4.9. Learn effectively for the purpose of continuing professional development

*Teaching/learning methods and strategies*

Transferable skills are developed through the teaching and learning programme outlined above and in section 17.

Skill 4.1 is taught through coursework and developed through feedback on reports, essays and oral presentations. Skill 4.2 is taught through lectures and practical work and developed, as appropriate, during individual research project.

Skills 4.3 to 4.5 are developed through group project work. Skill 4.6 is developed through computer-based exercises, projects and other coursework activities and individual learning. Skill 4.7 is developed throughout the course within a framework of staged coursework deadlines and the split examination system.

Although not explicitly taught, skills 4.8 and 4.9 are encouraged and developed throughout the course, which is structured and delivered in such a way as to promote this.

Skill 4.1 is assessed through coursework, workshop presentations, written examinations and the oral examination. Skill 4.2 is assessed through coursework, written examinations and project work. Skills 4.3 to 4.5 are assessed in workshops. The other skills are not assessed formally.

In addition to the training embedded in the programme, the Graduate School runs a Professional Skills Development programme for Master’s level students. The programme, consisting of the “MasterClass” workshops and e-learning modules, aims to help students develop the skills needed both in their academic studies and in obtaining and progressing in their future careers. The Careers Advisory Service also provides training and support for students on career options, job seeking and interviews.

16. The following reference points were used in creating this programme specification

MSc in Molecular Medicine Handbook and Course Standard Operating Procedure

17. Programme structure and features, curriculum units (modules), ECTS assignment and award requirements

**Year One:**

The programme is only offered as a full-time, one year course and leads to the MSc degree. The course is comprised of two parts, a taught component, which is given from October to February, and a research component that will be given over the remainder of the year, ~7 months.

The taught component will include lectures, laboratory practicals, tutorials and student presentations. Laboratory based practicals are held throughout the taught component.

All students attend a core induction week, followed by a module of core basics of molecular and cellular biology, together with molecular biology technologies, including molecular genetics, DNA sequence analysis and polymerase chain reaction (PCR). Gene regulation and cellular development, and signalling mechanisms are then covered.
This is followed by specific programmes centred on cancer, haematology and infectious diseases, molecular genetic diseases (diabetes, cystic fibrosis, muscular dystrophy, complex trait analysis and gene mapping), transgenic research and microarray analysis.

Practical sessions cover isolation and preparation of genomic DNA, Southern blotting, screening of bacteriophage libraries, plasmid cloning, restriction enzyme mapping, PCR and DNA sequencing, bioinformatic analysis of DNA sequence data, and protein expression and western blot analysis.

Tutorials and student presentations are held every 1 - 2 weeks.

There are three written examinations, one essay paper, one paper critique paper, and one practical data analysis paper. These are held in the last two weeks of February.

A full time laboratory based research project will be carried out, in one of the Departments associated with the MSc course, from the beginning of March until the end of September (approximately 7 months). The titles of the research projects, offered by prospective supervisors will be made available in December/January. On completion of the project a written report will be produced and submitted for an examination followed by a viva in September with an internal and external examiner.

The overall pass mark is 50%, and the written examinations and coursework element and the research project element contribute 50% and 50%, respectively.

In addition to the formal teaching sessions (approximately 20 lectures and/or two days of practicals per week), students are expected to undertake private study (approximately 20 - 25 hours per week) to supplement the lectures and practicals and to explore areas in greater depth. During the research component students are expected to work full-time in the laboratory and to undertake private study.

**Assessment**

In February, at the end of the taught component there are written examinations. These consist of:

a) Paper 1 Specialised Topics – Essays (3 hours)

b) Paper 2 General Topics - Paper Critique (2 hours)

c) Paper 3 Practical Data Analysis (3 hours - written paper testing knowledge of laboratory techniques, technical understanding and the ability to present and interpret data)

These examinations test both the breadth of knowledge of the candidate (Papers 2) and their ability to go into depth on some subjects (Paper 1) as well as their ability to understand laboratory techniques and to present and interpret data (Paper 3).

The coursework components consist of a Poster presentation (in January) an oral Research presentation of their project (in July), together with Lab practical write-ups.

In September, students are examined on their research projects. This is on the basis of their written report and viva voce. The viva voce examines both the research project and thesis and is conducted by two examiners.

In order to obtain the MSc., it is necessary to pass each Element of the course: Element 1 – written examination Papers 1 – 3 and Coursework, and Element 2 – thesis and viva voce examination. Each Element is independent in that a failure in either Element requires the student to retake the failed Element, but not the Element they have passed. For each paper the pass mark is 50%. Candidates achieving an overall mark of between 50% and less than 60%, in both Elements, will be recommended for a Pass. Candidates achieving an overall mark of between 60% and less than 70%, in both Elements, will be recommended for a Pass with Merit. Candidates achieving an overall mark of 70% or greater in both Elements will be recommended for a Pass with Distinction. The overall mark is obtained with Elements 1 and 2 contributing 50% each. No mark of less than 40% will be accepted as a condoned failing mark for any component e.g. any of the written papers, thesis or viva voce. An overall grade of Pass, Merit or Distinction in the MSc. is awarded at the discretion of the examiners based on performance in both Elements.

**ECTS Assignment**

<table>
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<tr>
<th>Element</th>
<th>ECTS</th>
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<tbody>
<tr>
<td>Element 1 – Written Examinations and Coursework</td>
<td>35</td>
</tr>
<tr>
<td>Element 2 – Research Project and Viva</td>
<td>55</td>
</tr>
<tr>
<td>Total</td>
<td>90</td>
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18. **Support provided to students to assist learning (including collaborative students, where appropriate).**

**Departmental/Course Induction Programme:**
- Induction programme for orientation, introduction to library and information technology, and to Campus
- MSc Student Handbook, which includes lecture timetable and practical protocols
- An MSc course committee which includes staff and students (1 student representative/10 students on the course), which meets twice per year.
- A large community of postgraduate research students and postdoctoral research workers who work on immunology at the Hammersmith Campus.
- Seminars given by visiting and internal speakers. ‘Work in progress’ and ‘journal club’ sessions presented by PhD students, Post-Docs and principal investigators.
- Access to College English Language Support Programme
- Safety lecture given in first week core programme.

**Departmental Facilities:**
- Library and other learning resources and facilities at the Hammersmith Hospital Campus
- Computing facilities within the Division, library and teaching areas.
- Well equipped teaching and research laboratories
- Opportunities for students to conduct their research projects at a wide range of internal laboratories at Imperial College, and possibly at external institutions and companies.
- Employer needs and opinions feed into the programme through frequent guest lecturers from industry and possible student placements in relevant industries and industry-based research projects.

**Departmental/Course Feedback Policy:**
- Feedback on coursework and examination performance given verbally to all students in individual meetings with the Course Director
- Feedback on coursework by course tutors to their tutees.

**Welfare and Pastoral Care:**

College student welfare services are the responsibility of the Director of Student Affairs who manages the Head of the Student Counselling Service, the Senior Disability Officer, the College Tutors and the Hall Wardens. The Director of Student Affairs acts as liaison between the College and the College Health Centre (NHS) and the Chaplaincy and works closely with the ICU Deputy President (Welfare) to enhance welfare, advice and support.
- In addition to the Course Director, who has overall responsibility for student welfare and guidance, all students are allocated personal tutors whose role is to assist them with personal problems and to advise on pastoral and academic issues.
- Student email and open personal access to tutorial staff including the Course Director.
- Small tutorial groups (4 - 6 students : 1 staff)

**The Library**

There are libraries at all Imperial College campuses; with print collections, PCs, study space and other amenities. The Library has extensive electronic resources, including electronic databases, electronic books and full text electronic journals. Students are able to search for electronic resources, using the on-line library catalogue and web pages, and access them from anywhere on and off campus.

**English Language Support Unit**

The English Language Support Unit (ELSU) offers classes, the majority of which are free of charge, to students and members of Imperial College London who are not native speakers of English.
19. Criteria for Admission
The minimum qualification for admission is normally a Lower Second Class Honours degree in a Science-based subject from an UK academic institution or an equivalent overseas qualification. Where an applicant has a lesser degree qualification but has at least three years work experience in biology, chemistry or a related discipline, a special cases for admission may be submitted to the Graduate School Master’s Quality Committee.

20. Processes used to Select Students
All applications are reviewed by the Course Director and applicants are either selected or rejected, on the basis of their BSc degree result, the Institution at which they studied and their references. Candidates with 2nd or 1st class degrees from a Russell Group Universities are normally made a direct offer. All candidates are welcome to visit the Hammersmith Hospital Campus and discuss the course with the Course Director.

21. Methods for Evaluating and Improving the Quality and Standards of Teaching and Learning
a) Methods for review and evaluation of teaching, learning, assessment, the curriculum and outcome standards:
• Questionnaire about the classes is completed by all students. These are seen and discussed by the Course Committee and Divisional Teaching Committee (See below)
• Individual feedback sessions with all students in May with the Course Director.
• Periodic staff appraisal and peer teaching observations
• Two-three yearly review of the course by an Imperial College London academic staff member from outside the Division with a report and grading to the Graduate School Master’s Quality Committee (See below)
• MSc in Molecular Medicine Course Committee, with feedback from student representatives, with report to Divisional Teaching Committee (See below)
• External Examiner reports (See below)

The external examiner system and Boards of Examiners are central to the process by which the College monitors the reliability and validity of its assessment procedures and academic standards. Boards of Examiners comment on the assessment procedures within the College and may suggest improvements for action by relevant departmental teaching Committees.

The Faculty Studies Committees and the Graduate Schools’ Master’s Quality Committees review and consider the reports of external examiners and accrediting bodies and conduct periodic (normally quinquennial) and internal reviews of teaching provision. Regular reviews ensure that there is opportunity to highlight examples of good practice and ensure that recommendations for improvement can be made.

At programme level, the Head of Department has overall responsibility for academic standards and the quality of the educational experience delivered within the department.

b) Committees with responsibility for monitoring and evaluating quality and standards:
• MSc in Molecular Medicine Course Committee
• Board of Examiners – meets in September to consider awards
• Departmental Teaching Committees
• Divisional Postgraduate Teaching Committee
• Divisional Teaching Strategy Committee
• Graduate School, Master’s Quality Committee
• Imperial College London, Quality Assurance a Committee (See below)
• Imperial College London, Senate (See below)
The **Senate** oversees the quality assurance and regulation of degrees offered by the College. It is charged with promoting the academic work of the College, both in teaching and research, and with regulating and supervising the education and discipline of the students of the College. It has responsibility for approval of changes to the Academic Regulations, major changes to degree programmes and approval of new programmes.

The **Quality Assurance and Enhancement Committee** (QAEC) is the main forum for discussion of QA policy and the regulation of degree programmes at College level. The QAEC develops and advises the Senate on the implementation of College policies and procedures relating to quality assurance, enhancement and internal audit of quality and arrangements necessary to ensure compliance with national and international frameworks and codes of practice relating to academic standards, quality assurance and enhancement.

The **Faculty Studies Committees** and the **Graduate School Master’s Quality Committees** are the major vehicle for the quality assurance of undergraduate / Master’s level courses respectively. Their remit includes: setting the standards and framework, and overseeing the processes of quality assurance, for the areas within their remit; monitoring the provision and quality of e-learning; undertaking reviews of new and existing courses; noting minor changes in existing programme curricula approved by departments; approving new modules, changes in module titles, major changes in examination structure and programme specifications for existing programmes; and reviewing proposals for new programmes, and the discontinuation of existing programmes, and making recommendations to Senate as appropriate.

The **Faculty Teaching Committees** maintain and develop teaching strategies and promote inter-departmental and inter-faculty teaching activities to enhance the efficiency of teaching within Faculties. They also identify and disseminate examples of good practice in teaching.

**Departmental Teaching Committees** have responsibility for the day-to-day oversight of a department’s programmes including the approval of minor changes to course curricula and examination structures and approval of arrangements for course work.

c) **Mechanisms for providing prompt feedback to students on their performance in course work and examinations and processes for monitoring that these named processes are effective:**

- Verbal feedback promptly given to students after their literature presentations;
- Discussion sessions on the laboratory practical sessions;
- Meetings with personal tutees to discuss progress;
- Meeting of individual students with course director to discuss exam performance, research project progress (in May);
- Course questionnaires and Staff-Student Liaison committee;
- External examiners and course committee

d) **Mechanisms for gaining student feedback on the quality of teaching and their learning experience and how students are provided with feedback as to actions taken as a result of their comments:**

Students are invited to participate in surveys so that student feedback on the College and its courses can be obtained and used to enhance provision. External surveys in which students participate include:

- National Student Survey (NSS)
- Postgraduate Research Experience Survey (PRES)
- International Student Barometer (ISB)
Internal surveys include:

- SOLE (undergraduate student online evaluation exercise)
- PG SOLE (Master's student online evaluation exercise)
- TOLE (tutor online evaluation exercise)

Staff-Student committees are the primary arenas for staff-student engagement at a departmental level. Staff-student committees are run slightly differently according to the size and UG:PG ratio of the department. Most departments have separate committees for undergraduates and postgraduates. A range of issues are discussed from SOLE and PG SOLE reports, external examiner reports and curriculum changes to practical issues, such as the availability of computers and pastoral care. Staff-Student Committees elect a Chair each year, which could be either a member of staff or a student. If the Chair is a member of staff, the Deputy Chair should be a student, and vice versa. The Chair will liaise with the department and students to agree an agenda for the meeting in advance.

- MSc in Molecular Medicine Course Committee
- Meetings with personal tutees and Course Director
- Course questionnaire evaluation
- Meeting of individual students with course director to discuss exams performance, research project progress and career aims (in May);
- Viva with External Examiner
- Feedback meeting between External Examiners and Students held after the viva exams

**e) Mechanisms for monitoring the effectiveness of the personal tutoring system:**

- MSc in Molecular Medicine Course Committee
- Meetings with personal tutees
- Meeting of individual students with course director to discuss exams, performance, research project progress and career aims (in May each year)
- Course questionnaire evaluation
- Feedback meeting between External Examiners and Students held after the viva exams

**f) Mechanisms for recognising and rewarding excellence in teaching, research supervision, pastoral care and supporting the student experience:**

Staff are encouraged to reflect on their teaching, in order to introduce enhancements and develop innovative teaching methods. Each year College awards are presented to academic staff for outstanding contributions to teaching, pastoral care, supporting the student experience or research supervision. A special award for Teaching Innovation, available each year, is presented to a member of staff who has demonstrated an original and innovative approach to teaching. Nominations for these awards come from across the College and students are invited both to nominate staff and to sit on the deciding panels.

**g) Staff development priorities for this programme include:**

- Active research programme in molecular and cellular biology as applied to medical research;
- Staff appraisal scheme and institutional staff development courses;
- College Teaching Development Grant Scheme to fund the development of new teaching and appraisal methods;
- Updating professional and IT/computing developments.
22. Regulation of Assessment

a) Assessment Rules and Degree Classification:

For Master’s programmes:

• Minimum pass mark is 50% for each module. No mark of less than 40% will be accepted as a condoned failing mark for any component e.g. one of the written papers.
• Assessment details are provided in the MSc Student Handbook.
• To qualify for the award of MSc students must complete all the course requirements and must achieve an overall pass mark in the combined examinations and coursework, Element 1, and in the research project and viva voce, Element 2.
• The weighting of marks contributing to the degree for the examinations and coursework element and the research project element is: 50:50.
• The written examination and coursework element contributes 50% of the total marks.
  Paper 1 Specialised Topics – Essays 15%
  Paper 2 Paper Critique; 10%
  Paper 3 Practical Data Analysis 15%
  Poster Presentation 2.5%
  Research Presentation 2.5%
  Coursework 5%
• The research project element contributes 50% of the total marks

Examiners have the discretion to award a result of merit or distinction to candidates who have fulfilled the requirements for the award of the Master’s degree as specified in the Examination Regulations. Postgraduate Diplomas and Postgraduate Certificates are unclassified and are pass/fail only.

In order to be awarded a result of merit, a candidate must achieve at least 60 per cent in each element; in order to be awarded a result of distinction, a candidate must achieve at least 70 per cent in each element.

Where appropriate, a Board of Examiners may award a result of merit where a candidate has achieved an aggregate mark of 60% or greater across the programme as a whole AND has obtained a mark of 60% or greater in each element with the exception of one element AND has obtained a mark of 50% or greater in this latter element.

Where appropriate, a Board of Examiners may award a result of distinction where a candidate has achieved an aggregate mark of 70% or greater across the programme as a whole AND has obtained a mark of 70% or greater in each element with the exception of one element AND has obtained a mark of 60% or greater in this latter element.

Further information is available in the Academic and Examination Regulations

The marking scheme for this programme is available at:
http://www1.imperial.ac.uk/medicine/teaching/postgraduate/molecularmedicine/.

b) Processes for dealing with mitigating circumstances:

The College’s Extenuating Circumstances Affecting Academic Performance: Policy and Procedures makes provision for Boards of Examiners to use their discretion where extenuating circumstances are independently corroborated and are judged by the advisory panel to be of sufficient severity to have substantially affected performance.
A candidate for a Master’s degree who is prevented owing to illness or the death of a near relative or other cause judged sufficient by the Graduate Schools from completing at the normal time the examination or Part of the examination for which he/she has entered may, at the discretion of the Examiners,

(a) Enter the examination in those elements in which he/she was not able to be examined on the next occasion when the examination is held in order to complete the examination,

or

(b) be set a special examination in those elements of the examination missed as soon as possible and/or be permitted to submit any work prescribed (e.g. report) at a date specified by the Board of Examiners concerned. The special examination shall be in the same format as specified in the course regulations for the element(s) missed.

Applications, which must be accompanied by a medical certificate or other statement of the grounds on which the application is made, shall be submitted to the Academic Registrar who will submit them to the Board of Examiners.

c) Processes for determining degree classification for borderline candidates:

For Master’s programmes: Candidates should only be considered for promotion to pass, merit or distinction if their aggregate mark is within 2.5% of the relevant borderline. Nevertheless, candidates whom the Board deems to have exceptional circumstances may be considered for promotion even if their aggregate mark is more than 2.5% from the borderline. In such cases the necessary extra marks should be credited to bring the candidate’s aggregate mark into the higher range. Detailed records of all decisions should be recorded in the minutes of the meeting of the Board.

d) Role of external examiners

The external examiner system and Boards of Examiners are central to the process by which the College monitors the reliability and validity of its assessment procedures and academic standards. External examiners’ primary duties are to ensure that the standard of the College’s degrees is consistent with that of the national sector; to ensure that assessment processes measure student achievement rigorously and fairly and that the College is maintaining the threshold academic standards set for its awards in accordance with the frameworks for higher education qualifications and applicable subject benchmarks statements. External examiners gather evidence to support their judgement through the review of course materials, approval of draft question papers, assessment of examination scripts, projects and coursework, and in some instances, through participation in viva voce and clinical examinations. External examiners are members of Boards of Examiners and participate in the determination of degree classifications and student progress.

External examiners submit their reports to the Provost. The reports are scrutinised by the Vice-Provost (Education) and by the Registry QA team to identify any points of concern. These are then referred to the Head of Department and Chairman of the Board of Examiners, with a request to comment on the points raised and to explain how any concerns will be addressed. The reports and departmental comments are subsequently considered by the relevant Faculty Studies Committee or Graduate School Master’s Quality Committees, which may seek further assurances from a department on the resolution of a particular problem. The Committees will also consider examples of good practice raised by the external examiners. Following consideration of the reports, the Registry provides feedback to external examiners. From 2012-13 external examiner reports, and the departmental responses to them, are available on the College’s intranet.

- Approve examination papers;
- Review coursework;
- See all examination scripts and research project dissertations;
- Viva students;
- Attend the Board of Examiners;
• Complete a report to the College.

23. **Indicators of Quality and Standards:**

- Favourable comments and feedback from students.
- Favourable comments by External Examiners.
- First destination data for MSc graduates, showing a high proportion find employment or further postgraduate research training in Molecular and Cellular Biology and related areas.
- Independent review of the quality of the educational provision in Medicine by the Quality Assurance Agency subject review process in 2000 achieving an excellent grading of 21 out of a maximum 24 points.
  
  **Curriculum Design Content and Organisation** = 3  
  **Teaching Learning and Assessment** = 3  
  **Student Support and Guidance** = 4  
  **Student Progression and Achievement** = 4  
  **Learning Resources** = 4  
  **Quality Management and Enhancement** = 3

24. **Key sources of information about the programme can be found in**

- MSc in Molecular Medicine Course handbook (available on course Blackboard web pages)
- Postgraduate Prospectus, Imperial College London (available on-line http://www3.imperial.ac.uk/pgprospectus)
- MSc in Molecular Medicine website (http://www1.imperial.ac.uk/medicine/teaching/postgraduate/taughtcourses/molecularmedicine.html)
- Imperial College Faculty of Medicine (http://www1.imperial.ac.uk/medicine)
- QAA Subject Review Report Imperial College of Science, Technology & Medicine (www.qaa.ac.uk).