

PROGRAMME SPECIFICATION

Awarding body/institution:	Queen Mary, University of London
Teaching institution (if different from above):	n/a
Name of the final award and Programme title:	Postgraduate Diploma in Clinical Microbiology MSc in Clinical Microbiology
Duration of Study/Period of Registration	1 year full time 2 years part time
UCAS code:	
QAA Benchmark Group	
Academic Department/s involved in programme delivery	Centre for Immunology and infectious Diseases, Blizard Institute of Cell and Molecular Science QMUL

If accredited by a professional/statutory body, please give the name, date of last accreditation visit, approximate date of next visit and details of exemptions that will be given to QMUL graduates.	<p>Accredited by the Association of Clinical Microbiologists. Completion of an accredited degree is compulsory for Clinical Scientists to complete their training for State Registration with the Health Professions Council but does not provide credit towards the qualification.</p> <p>Application will be made for accreditation by the Institute of Biomedical Science but the course does not provide credit towards a qualification proposed or organised by them.</p>
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Criteria for admission to the programme

Qualification requirements for the course are MB BS or basic medical degree or a BSc honours degree in biomedical science from universities recognised by the University of London. The award must be at least a 2:2.

Candidates with degrees in dentistry, veterinary science, microbiology, biological sciences or nursing with relevant experience in clinical microbiology, may also be accepted on the course.

At the discretion of the course organiser a candidate for the course with alternative qualifications (such as Fellowship of the IBMS) and relevant experience in clinical microbiology, can be accepted on the Diploma course and can register for the MSc if progress during the course is satisfactory.

Applicants for part time study must hold a full-time appointment or attachment in a medical microbiology department of a medical school, hospital, HPA or other appropriate institution for the duration of their studies.

Full-time students will be attached to the Centre for Immunology and Infectious Disease at Barts and the London School of Medicine and Dentistry. This is not a clinical attachment.

Applicants may be interviewed prior to acceptance and course entry may be competitive.

Students must have access to a suitable computer and broadband access to the internet. Availability of minimum system specifications for using 'Blackboard CE8' is required.

Non-native speakers must achieve a minimum of IELTS 7.0; TOEFL paper 610, internet 100 and provide certification of this. Students are required to achieve a minimum of 6.0 in their written element (or equivalent in TOEFL). Students must be able to sit examinations at a British Council Centre, or a similar approved centre, under invigilation or be able to attend examinations in the UK.

If the offer of a place diploma is conditional upon achieving the above standard in an English language test and the student has achieved IELTS 6.5; TOEFL paper 580, internet 92 within the last 12 months they can be offered the opportunity to attend the preessional course for at least 1 month instead of taking IELTS or TOEFL again. At the end of the preessional course the student will be assessed by the Queen Mary Language and Learning Unit to confirm that the student has the language skills to complete the course.

Aims of the programme

Postgraduate Diploma

The postgraduate diploma in Clinical Microbiology is designed both as a complete curriculum in Clinical Microbiology for new entrants into these fields and as an update and extension for those already in it. The course provides clinicians and scientists with theoretical, laboratory and clinically applied aspects of their discipline and associated subjects.

The course aims to:

- develop the service careers of clinicians, clinical scientists, biomedical scientists and other professionals interested in working in clinical microbiology.
- enable students to develop a network of contacts with their peers and with the internal and specialist external lecturers, to enable them to seek appropriate specialist clinical and laboratory advice during their future practice in clinical microbiology
- equip students with the skills to conduct literature searches, and evaluate original published research, to enable the student to continue their learning after completion of the degree.
- provide the student with a comprehensive knowledge of practical methods used in clinical microbiology and the skills (through extensive hands-on practicals) to work in and/or manage a routine clinical laboratory.
- enable students to use this knowledge to evaluate critically current and new techniques in a routine laboratory.

In addition to a solid theoretical and practical knowledge of clinical microbiology, students will also develop a range of transferable and specialised skills appropriate to a postgraduate level course. These skills include the ability to:

- structure and communicate ideas effectively both orally and in writing
- manage time and work to deadlines
- participate constructively in groups and work independently
- reason critically and assess the relevance and importance of the ideas of others.
- identify problems, formulate objectives, develop solutions and review possible outcomes.
- present data using oral and written techniques (including the use of computer software).

MSc

The Masters course in Clinical Microbiology shares the aims and objectives of the Postgraduate Diploma and in addition aims to:

- develop the research careers of clinicians, clinical scientists, biomedical scientists and other professionals interested in working in clinical microbiology.

- prepare students with appropriate qualifications for the membership examinations (theory and practical) of the Royal College of Pathologists (FRCPath).
- develop skills in clinical audit
- evaluate epidemiological or research data using a range of relevant techniques, including the appropriate use of statistical methods.
- Enable the student to focus on a piece of original research – this may be prospective and involve basic science or clinical skills and techniques or may focus on a detailed review of an area within the curriculum.

Learning outcomes for the programme

By the completion of the course, the student will be able to:

- Demonstrate their achievement of the specific learning outcomes detailed in each of the modules of the course.
- Describe the basic sciences and research techniques underpinning the practice of clinical microbiology.
- Search and interpret the literature to apply results from the relevant clinical sciences to the management of the patient.
- Review evidence, apply the correct use of statistics and critically appraise the scientific literature to draw conclusions about infectious disease and clinical care
- Demonstrate a broad knowledge of common and important infectious diseases at a level appropriate to underpin clinical experience and support independent practice.
- Demonstrate knowledge of, and skills in and appropriate attitudes towards the diagnosis, investigation and management of patients with infectious diseases.
- Utilise problem-solving skills in the clinical and research settings which will enable independent practice as a specialist.

Most students will use this course to undertake the MSc in clinical microbiology.

Students who are studying for the Postgraduate diploma in clinical microbiology (120credits) do not undertake a project or follow the advanced clinical microbiology module.

Students undertaking the MSc (180 credits) will complete an independent

research project. This could be either laboratory or clinically-based, or in certain circumstances (for example the performance of a meta-analysis of existing trial evidence), library-based. Before undertaking such a project, the student must be able to demonstrate that their home institution can host the 30 credit project and that a suitable on-site supervisor can be identified who is willing to act in this capacity. The student must be able to demonstrate by the approval of the project supervisor and / or lab supervisor that the work done was that of the student. The project proposal together with the above aspects must be approved by the course organiser or designated faculty member / supervisor. The approval process will include the submission of a 400-word project outline covering background, aims and methods, together with the CV and letter of support from the on-site supervisor, and the signed agreement of the host institution that the relevant facilities are available. The student will agree to provide regular emailed updates of the project progress to the designated QMUL faculty member / supervisor.

We anticipate that most students are clinicians or scientists completing higher medical or laboratory training in this field in the UK following the course part time. For these students the modules of the taught course will complement the clinical training they receive at their host institution.

Most fulltime students are recent graduates in biomedical science or are overseas clinicians and these students receive extra tuition from departmental and NHS staff to enable them to put the taught material in context.

Teaching, learning and assessment strategies

The course aims to promote teaching and learning enriched by original scholarship and scientific research, in order to encourage students to become independent learners.

Formal teaching comprises lectures, workshops, practicals and demonstrations. The lecturers are specialists in their field and are invited from many institutions in the UK.

The practical classes are an important component of the course and are designed to give the student maximum hands-on experience, particularly in basic clinical microbiology. Students are encouraged to relate current practices in their sponsoring institution to their studies, and to discuss and critically evaluate these techniques with their colleagues in the light of their formal teaching. The practical classes are taught in the purpose-built teaching laboratory, which is well equipped with all necessary materials.

In addition to the formal face to face teaching students use on line learning materials in the university's electronic classroom (currently Blackboard CE8). These materials include discussion threads, chat rooms, lecture notes (PDF documents) and quizzes

Self-directed learning, by reading and reviewing literature to supplement the lectures, is essential and students are encouraged to use the library facilities of the department and the University. All students have access to the library and computing facilities of the University.

To enable the full-time students to participate fully in discussions about laboratory techniques and clinical cases with their part-time colleagues who are attending by day-release, additional tuition is provided during the attachment to the Centre for Immunology Infectious Disease. The additional tuition provides further hands-on practical experience using material designed to reflect the clinical samples and laboratory procedures in a routine hospital laboratory. The students are encouraged to complete the practical work as individuals to gain maximum experience, but discussion within the group and with the tutor is encouraged.

Additional theoretical tutorials are also used throughout the year to broaden the students' experience of clinical microbiology. These tutorials include case presentations to and by the students, workshops, discussion sessions, question-and-answer sessions, and oral presentations by the students. Full-time students receive additional assignments to be completed throughout the year to allow them to monitor their own progress. Full-time students are also encouraged to attend the regular clinical journal club and research meetings within the Centre.

Assessment strategy

Formative Assessment

Postgraduate Diploma

Formative assessment will be given in the form of short quizzes and essays with online feedback based on the learning activities completed that week.

MSc

In addition to the assessments outlined for the postgraduate diploma formative assessment will be given via regular emailed updates on project progress from the student together with planned online update meetings between student and designated course tutor who can also discuss any challenges faced in execution of the project.

Summative Assessment

Postgraduate Diploma

There will be a variety of assessment tasks used during the course including essay writing, abstract writing, poster and oral presentations, MCQs and practical assessments. See each module for exact details of assessment. Online feedback for these assessments will be provided and students are welcome to discuss individual results with the relevant course organiser.

MSc

The in addition to the taught course which is assessed as described above. There will be an end-of-course summative assessment after completion of the taught course. This is the assessment for the Advanced clinical microbiology

module. The written assessment format will be a number of longer essay style questions. The students will also undertake a 15 minute viva in the presence of one internal and one external examiner. The viva will contribute 10% of the marks for this summative assessment.

The independent research project is 30 credits and is assessed by the presentation of a dissertation. The student can be asked about their project during the summative viva.

Programme structure(s) and requirements, levels and modules

The Postgraduate Diploma comprises a one-year (full time) or two-year (part time attending one day a week) taught course of 7 modules (6 x 15 credit modules and 1 x 30 credit module).

All of the modules are core to the Diploma and are studied in order of presentation.

There are no optional modules or alternative pathways, as the course seeks to ensure comprehensive coverage of the 'Royal College of Pathologists' (RCPATH) syllabuses for specialist training in medical microbiology or virology <http://www.rcpath.org/index.asp?PageID=117>

We do not anticipate a demand for study of stand-alone modules at this stage.

The MSc course comprises the taught course modules outlined above in addition students follow a further taught module (30 credits) and undertake a 30 credit independent research project (30 credit). This project may be either laboratory or clinically-based, or in certain circumstances (for example the meta-analysis of data from existing research trials) be library-based. The hypothesis and study design are proposed by the student and are carried out in the student's home institution. Before undertaking such a project, the student must be able to demonstrate that their home institution can host the 30 credit project and that a suitable on-site supervisor can be identified who is willing to act in this capacity. The student must be able to demonstrate by the approval of the project supervisor and / or lab supervisor that the work done was that of the student.

Taught Programme Structure.

Part time diploma students:

Semesters 1-3: Consists of 3 x 15 credit modules, each with formative assessments and final summative assessments at the end of semester 3.

Semesters 4-6: Consists of 2 x 15 credit modules and 1x 30 credit module each with formative assessments and final summative assessments at the end of term 6.

The 15 credit module "Clinical microbiology research and presentation skills" is taught and assessed over the two years.

Part time MSc students In addition to the taught programme above in semesters 4-6 students undertake a further module “advanced clinical microbiology and laboratory management” this has a formative assessment during the year and a formative assessment and viva at the end of the year. Students undertake a project to be completed under the supervision of host institution with co-supervision / oversight by named tutor on course. At the end of semester 6, submission of dissertation on project approx 7,000 words to be marked by 2 internal examiners.

Fulltime diploma/MSc students.

Follow the above teaching but study the semesters 1 and 4, 2 and 5 and 3 and 6 concurrently. Semesters 1,2 and 3 are taught on Tuesdays and semesters 4,5 and 6 are taught on Thursdays.

Indicative Curriculum: Module topics

Module titles are as follows:

Semester	Module title	Credit value	assessment(s)	% weighting
1,2 and 3	Clinical microbiology: Pathogens and commensals	15	Formative	25
			Summative	75
1,2 and 3	Diagnostic microbiology and diagnostic methods	15	Formative	30
			Summative	70
1,2 and 3	Molecular biology, microbial pathogenesis and the host immune response	15	Formative	25
			Summative	75
4	Antimicrobials	15	Summative	100
4 and 5	Public Health and Communicable Disease Control	15	summative	100
5 and 6	Clinical micro: Diagnosis and management of human disease and control of hospital infection	30	Formative	15
			summative	85
1-6	Clinical microbiology research and presentation skills	15	Formative	100
4-6	Advanced clinical microbiology and laboratory management (MSc students only)	30	Formative	25
			Summative	75
	Project (project title and research format will be agreed between the candidate and the course organiser.)	30	Dissertation	100

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Quality assurance mechanism (please include details of: SSLC meetings, student feedback mechanisms, personal tutor arrangements, programme induction, programme review and monitoring.)

Induction

- At the start of the course all students will receive a course handbook including information about the taught course, how to use the electronic classroom and advice on independent learning.
- Mechanisms for student support (academic, technical, administrative and pastoral) are all in place and information about this will be available during the induction day, in the course handbook and online.

Personal Tutor arrangements

- There are no specified personal tutors for the postgraduate students however the course director and teaching associate aim to know each student and monitor their progress. In addition the teaching associate occupies an office area beside the teaching laboratory and has an open door policy; any student can drop in to discuss any problem either academically or pastorally. The course director also operates an open door policy.
- For the part time students the teaching associate and/or the course director is present in every practical class and so have contact with every student usually every day the students are in attendance.
- For full time students the course director and/or the teaching associate is leading a session with the students 4 days a week so these students are well known to them.

Feedback

- Informal feedback from students will be sought throughout the course, both in discussion, and via the message-board system or via the student representative.
- Formal feedback from students will be sought at the end of each module in the form of a questionnaire.
- Feedback will be sought about a number of areas including:
 - i. course content
 - ii. course delivery
 - iii. technical aspects of accessing the learning experiences
 - iv. quality of associated materials
- This feedback will be used to make alterations to the forthcoming modules as well as to the course overall for the following year.
- More detailed formal feedback about course structure will be sought at the end of each term and at the end of the year.

Monitoring.

The programme is managed by a Programme Management Committee (PMC) comprising the course organiser, teaching associate and module conveners. The PMC will meet termly. The student representative is invited to attend the PMC.

Programme Review

All activities will be monitored by the PMC to maintain the quality of the course. In addition to ongoing review, content and delivery will be reviewed formally annually and together with outcomes of student assessment and student feedback and changes made to the programme accordingly.

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.**

If there are no links with employers consider the learning outcomes and transferable skills and explain how these might be used to inform employers about the qualities and skills a graduate from this programme might be expected to have.

The majority of our students are sponsored by their employers to attend the course by day release however there are no formal links with employers although the modules are developed with reference to the FRCPPath curriculum for clinicians and the Modernising Scientific Careers pathways for Clinical and Biomedical Scientists.

There are several ways in which such a qualification might inform employers about graduates' qualities and skills:

- An opportunity for rigorous clinical microbiology/virology teaching with a structured syllabus with a significant practical element is welcomed by employers as a means of supporting "in house" training. The course is planned so that the course will cover the curriculum in microbiology/virology outlined in the 'Royal College of Pathologists Training Board' (RCPath) and "Modernising Scientific Careers". This should therefore help the performance of students in the work-place based assessments, knowledge-based assessments and practical examinations, set by the Royal College of Pathologists.
- Some recent graduates in biomedical science may wish to use this type of qualification to demonstrate their commitment to the specialty and provide an advantage when applying for posts as scientists within the NHS.
- Achievement of the MSc is also be desirable for overseas students to enhance their training and job opportunities. Some overseas students use the course as preparation for the FRCPPath. For some overseas candidates, exposure to the practical and theoretical material covered

by the curriculum may be both valuable in itself as a qualification, as well as a useful way of working through the exam syllabus.

- For students who complete the full MSc, the completion of the independent research project may provide an entry point and pathway into higher research training.
- The majority of our students are sponsored by their employers to attend the course by day release

Person Completing Programme Specification	Professor Armine Sefton
Person responsible for management of programme	Professor Armine Sefton
Date programme specification agreed by Department or teaching and learning committee	25 th June 2010
Date of approval by Faculty Board/SMD Education Board	
Date of update/amendment	