

St George's, University of London

Scheme of Assessment and Grade Criteria - MSc Clinical Genomics
For students entering the programme in 2016

Approved by TPPC (TBC)

1 Overall

- 1.1 The Scheme of Assessment is presented to meet the requirements of section 7 of the General Regulations for Students and Programmes of Study which stipulates that each programme shall have a Scheme of Assessment for each major stage (e.g. year) or module, as defined in its Regulations. This Scheme of Assessment pertains to the:
- MSc in Clinical Genomics
 - PgDip in Clinical Genomics

2 Module Assessments

- 2.1 Students must complete the following compulsory modules:

Module 1	Understanding genetic technologies	15 credits
Module 2	Clinical interpretation of genomic data	15 credits
Module 3	Communication of genetic information and ethics	15 credits
Module 4	Personal and professional development portfolio	15 credits
Module 5	Research module	60 credits

- 2.2 Students must also complete four option modules from the following:

Module 6	Omics techniques; their application to genomic medicine	15 credits
Module 7	Molecular pathology of cancer and application in cancer diagnosis, screening and treatment	15 credits
Module 8	Application of genomics in infectious disease	15 credits
Module 9	Pharmacogenomics and stratified healthcare	15 credits
Module 10	Bioinformatics, interpretation and data quality assurance in genome analysis	15 credits
Module 11	Ethical, legal and social issues in applied genomics	15 credits
Module 12	Cardiovascular genetics and genomics	15 credits
Module 13	Teaching and learning skills	15 credits

- 2.3 For each module there will be an assessment scheme setting out how many assessments are required for the module and the weighting of each assessment.
- 2.4 Topics for assessments will be devised by module leaders, in consultation with the Course Director and the teaching team, which reflect the content and learning outcomes contained in the module descriptor.
- 2.5 Deadlines for submission will be given in the relevant module handbook.
- 2.6 Word limits will be set in accordance with the type of assessment elements and module credit rating.
- 2.7 Module leaders can set pre-conditions for entry to the summative assessments such as submission of observation of procedure forms and attendance at communications skills workshops. Where this is the case, the pre-conditions will be outlined in the relevant module
- 2.8 The schemes of assessment for the modules available within the Clinical Genomics programme are summarised in the following table. The detailed assessment scheme will be set out in the module handbook and will adhere to the validated module descriptors.

Table 1: Overview of module assessments

CORE MODULES						
Module Title	Credits at Level 7	Formative Assessment	Summative Assessment	Weighting %	Examination Date(s)	ACHIEVING A PASS:
Understanding genetic technologies	15 credits	Feedback on performance in laboratory	15 minute oral presentation	60%	Year 1: May	50% pass mark overall
		Feedback on assignment preparation	MCQ/SBA Test	40%	Year 2: July	
Clinical interpretation of genomic data	15 credits	Discussion on progress with educational supervisor	5000 word essay	100%	Year 2: September	50% pass mark
Communication of genetic information and ethics	15 credits	Discussion on progress with educational supervisor	OSCE role play	60%	Year 2: November	50% pass mark overall
			Patient resource material	40%	Year 2: February	
Personal and Professional development	15 credits	Patient log to be presented to educational supervisor	Variant interpretation based on 5 cases	40%	Year 2: July	50% pass mark overall
			Reflective case report	30%	Year 2: July	
			Observation of 3 clinical consultations	30%	Year 2: July	

Research Project	60 credits	Regular feedback from supervisor including comments on drafts	10,000 word report 15 minute oral presentation Supervisor Report	80% 15% 5%	Year 4: August Year 4: August	50% pass mark for each element (the supervisor's report does not have to be passed but does contribute to the final mark)
ELECTIVE MODULES (Can in completed in Years 1-4)						
Omics techniques and technologies; their application to genomic medicine	15 credits	Online quizzes/questions Feedback on plan of data analysis	MCQ/SBA/SAQ Test 1500-2500 word essay critically comparing technologies	30% 70%	TBC	50% pass mark
Molecular pathology of cancer and application in cancer diagnosis, screening and treatment	15 credits	Online quizzes/questions Discursive tutorials	MCQ/SBA/SAQ Test 1500-2500 word critical essay relating to cancer genomics	30% 70%	TBC	50% pass mark
Pharmacogenomics and stratified healthcare	15 credits	Online quizzes/questions	MCQ/SBA/SAQ Test 1500-2500 word methodological evaluation of biomarkers	30% 70%	TBC	50% pass mark
Application of genomics in infectious disease	15 credits	Online quizzes/questions Feedback on draft essay	MCQ/SBA/SAQ Test 1500-2500 word essay critically appraising the role of genomics in a specific infection	30% 70%	TBC	50% pass mark
Bioinformatics, interpretation and data quality assurance in	15 credits	Online quizzes/questions	NGS pipeline design	100%	TBC	50% pass mark

genome analysis		Feedback on draft of project work	Bioinformatics assignment report			
Ethical, legal and social issues in applied genomics	15 credits	10 min case analysis presentation	3500 word essay (including 1500 word case analysis)	100%	May	50% pass mark
Cardiovascular genetics and genomics	15 credits	Online quizzes/questions Feedback on draft case analysis	MCQ/SBA/SAQ Test 1500-2500 word case analysis	30% 70%	April	50% pass mark
Teaching, Learning and Assessment in Healthcare & Science Education	15 credits	Peer and tutor feedback on microteaching	Microteaching session Extended reflective report	30% 70%	TBC	50% pass mark overall

3 Coursework assignments

3.1 Coursework assignments will be marked out of 100 with the significance given below:

70-100	A	Excellent
65-69	B+	Very good
60-64	B	Good
55-59	C+	Satisfactory
50-54	C	Pass
40-49	D	Fail
0-39	E	Serious fail

- 3.1.1 Zero marks will be awarded where plagiarism or other academic dishonesty is demonstrated, and for non-submission or non-attendance.
- 3.1.2 Students who submit work after the authorised extension deadline will be given a zero for that attempt.
- 3.1.3 Students who submit work which breaks patient/client or practice environment confidentiality will receive zero for that attempt.
- 3.2 The percentage marks for individual module assessments will be weighted according to the formula given in the module handbooks to give a single percentage mark for the module. Candidates who receive a mark of at least 50% overall for the module will pass the module.

Examinations

- 4.1 The type and duration of each examination will be specified in the module handbooks. Written examinations will include multiple choice questions. An objective structured clinical examination (OSCE) will also be held.
- 4.2 Examination questions/OSCE stations will be devised by module leaders and course faculty and reviewed by the relevant module team. The External Examiner(s) will review draft papers before each examination is held and will be invited to observe the OSCEs.
- 4.3 *OSCE(Module 3)*
The modified Angoff method of standard setting will be used to define the pass mark for OSCE examination. A standard setting committee will normally consist of the course directors and at least two other examiners on the communications module. ,
- 4.4 For OSCEs a score of percentage of total possible marks will be calculated. These will be mapped onto the grade scale as defined as below:

Score	Grade
85+	Distinction
75-84	Merit
Anghoff passmark (approx. 50+)	Pass
Below Anghoff passmark	Fail

- 4.5 *Multiple Choice Questions Examination*
For questions for which there is a defined single answer (i.e. MCQs) a single examiner will be responsible for determining the final marks and a second examiner will check a small sample of scripts for accuracy. MCQ examinations which are held online are automatically marked and do not require this manual moderation.
- 4.6 Candidates who achieve a mark of $\geq 70\%$ for the Module 1 only MCQ shall be deemed to have passed the examination.
- 4.7 Candidates who achieve a mark of less than the passing mark in the MCQs at the first attempt will fail the examination and will normally be expected to re-take the examination on the next occasion on which it is held. Marks for second attempts will be capped at the passing grade. Candidates who fail the examination at the second attempt will fail the module concerned and will have their registration on the Certificate terminated.

5. Assessment Criteria and marking schemes

- 5.1 Detailed Assessment Criteria explaining how different levels of achievement by students will be rewarded through the allocation of marks will be developed by the course team and made available to internal and external examiners.
- 5.2 Marking schemes explaining how marks are allocated to each piece of assessed work (for a question, a group of questions or a section in an examination paper or presentation) will be developed by the course team and made available to internal and external examiners.

6. Internal moderation

- 6.1 Arrangements for internal moderation will comply with requirements of General Regulation 11.7 which stipulates that written assessments, whether conducted under supervised or unsupervised conditions, shall be marked in detail by one Internal Examiner or Assessor, with at least one other Internal Examiner or Assessor having an overview of the work submitted for assessment.
- 6.2 Module assignments will normally be marked independently by two examiners who will then compare their marks and arrive at an agreed mark. Both first, second and agreed marks should be recorded on the mark sheet. Where an agreed mark cannot be reached, the course director will be asked to moderate. The course director may seek an additional opinion from another member of staff with suitable expertise, or from a member of the Exam Board.
- 6.3 Following internal moderation, candidates who receive a mark of $\geq 50\%$ for an assignment will pass the assignment.
- 6.4 Candidates who receive a mark of $\leq 49\%$ will fail the assignment and will be given a deadline for resubmission, normally four weeks after receiving the fail mark. Marks for any resubmission or resit will be capped overall at 50%. External examiners will be asked to review both attempts before marks are confirmed by the Board of Examiners.

7 Re-entry to assessments

- 7.1 A student will, as of right, be permitted one re-entry for all failed assessment components. The second attempt for examinations will normally be on the next occasion when the examination is held.

8 Progression

- 8.1 There are no progression points with the MSc in Clinical Genomics. Notwithstanding the absence of progression points, the Board of Examiners will determine at the end of the year whether a part-time student's progress in the preceding year's assessments is sufficient to permit continuation of study to the subsequent year of the course. Where assignments are outstanding due to agreed extensions, continuation of study within the subsequent year would be contingent on passing the assignment at the agreed revised deadline.

9 Research Project (60 credits)

- 9.1 Candidates will submit a research dissertation in the form of a scientific report. They will be allocated an individual supervisor to enable them to progress the work. The topic of study should be approved by the Course Director or the Research Project module lead.
- 9.2 The 60 credit ~~option~~-dissertation will be limited to a maximum of 10,000 words. Deadlines for submission will be given in the module handbook. Candidates who miss this submission date will normally be required to wait until the next examination cycle before receiving a mark for the project.

9.3 The Research Projects will be marked by independent two markers. If the marks allocated are within a band of 8, marks will then be averaged to give the final mark. If the marks are further apart than this, or if one mark is a pass and the other a fail, markers will be required to discuss their marks to see if they can agree on a mark. If, for any reason, agreement cannot be reached, the final mark will be allocated by the Board of Examiners after the dissertation has been reviewed by the Course Director and/or the Chair and at least one external examiner.

9.4 The examiners shall award a mark out of 100 with the significance as follows:

70-100	A	Excellent
65-69	B+	Very good
60-64	B	Good
55-59	C+	Satisfactory
50-59	C	Pass
40-49	D	Fail
0-39	E	Serious fail

Zero marks will be awarded where plagiarism or other academic dishonesty is demonstrated, and for non-submission.

9.5 Candidates who achieve a mark of $\geq 50\%$ will be deemed to have passed the Research Project.

9.6 The Board of Examiners may determine that any pass mark agreed should be subject to specific amendments to be made within a given time period (normally four weeks and not longer than twelve weeks) of receiving notification of this requirement.

9.7 Candidates who achieve a mark of $\leq 49\%$ at first attempt will fail the Research Project. Such candidates will normally be required to re-submit the following year. The Board of Examiners shall determine whether the project may be re-written to address any shortcomings or whether a new project is required for the re-submission. The Board of Examiners may also determine who should act as supervisor for the re-submission. Marks for re-submissions will be capped at 50%.

10 External examiners

10.1 At least one external examiner shall be appointed to the MSc in Clinical Genomics. The external examiner(s) shall be invited to participate in the setting of assessments and shall have the right to inspect any assessment material for the MSc. The detailed duties of external examiners are set out in the Quality Manual.

11 Board of Examiners

11.1 There shall be a Board of Examiners constituted in accordance with the General Regulations for Students and Programmes of Study.

12 Determination of Final Degree Mark

- 12.1 The final percentage marks obtained for the 120 credits from taught module assessments weighted for credit value, and the weighted Research Project mark worth 60 credits, will be added together and divided by 12 to arrive at a final degree mark for the MSc. Marks will be calculated to one decimal place, 0.5 being rounded up.
- 12.2 Candidates who achieve a final degree mark of 49.5-59.4% and pass the required combination of core and elective modules and pass the Research Project will pass the degree.
- 12.3 Candidates who achieve a final degree mark of 59.5-69.4% and pass the required combination of core and elective modules and pass the Research Project will pass the degree with merit.
- 12.4 Candidates who achieve a final degree mark of $\geq 69.5\%$ and pass the required combination of core and elective modules and pass the Research Project will pass the degree with distinction. Such candidates will normally be expected to pass each component at first attempt.
- 12.5 Candidates who successfully pass all core modules and the research project but achieve a final degree mark of $\leq 49.4\%$ will fail the MSc degree but may be awarded a Postgraduate Diploma in Clinical Genomics or Postgraduate Certificate in Interpretation and Clinical Application of Genomic Data if they fulfil the conditions for these awards (see 12 and 13 below).
- 12.6 Candidates who fail a core module (taking into account second attempts) will fail the degree and will not be eligible for the award of Postgraduate Diploma in Clinical Genomics or Postgraduate Certificate in Interpretation and Clinical Application of Genomic Data.

13 Determination of Final Diploma Mark

- 13.1 The Final Diploma Mark will be calculated by adding together the final marks for the core modules and the research project weighted according to credit value. The total will then be divided by 8. Marks will be calculated to one decimal place, 0.5 being rounded up.
- 13.2 Candidates who achieve a final diploma mark of 49.5-69.4% will pass the Postgraduate Diploma.
- 13.3 Candidates who achieve a final diploma mark of $\geq 69.5\%$ will pass the Postgraduate Diploma with distinction.
- 13.4 Candidates who have successfully passed all the core modules but have achieved a final diploma mark of $\leq 49.4\%$ will fail the Diploma but may be awarded a Postgraduate Certificate in the Interpretation and Clinical Application of Genomic Data.
- 13.5 Candidates who fail any of the core modules (taking into account second attempts) will fail the degree and will not be eligible for the award of Postgraduate Certificate in Interpretation and Clinical Application of Genomic Data.

14 Determination of Final Certificate Mark

- 14.1 The Postgraduate Certificate will be awarded without merit or distinction to candidates who successfully pass the four core modules to the value of 60 credits. The Final Certificate Mark will be calculated by adding together the marks for 60 credits achieved, weighted for credit value and dividing by 4. Marks will be calculated to one decimal place, 0.5 being rounded up.
- 14.2 Candidates who achieve a final certificate mark of $\geq 49.5\%$ will pass the Postgraduate Certificate in Interpretation and Clinical Application of Genomic Data.
- 14.3 Candidates who fail a module (taking into account second attempts) or achieve a final certificate mark of $\leq 49.4\%$ will fail the Postgraduate Certificate and will be issued with a transcript detailed the credits that have been accumulated.

15 Date of Award

- 15.1 The date of the award of the degree, diploma or certificate shall be the date of the Board of Examiners meeting at which the award is conferred

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