

MSc in Radiation Biology

Course Handbook

2020–2021

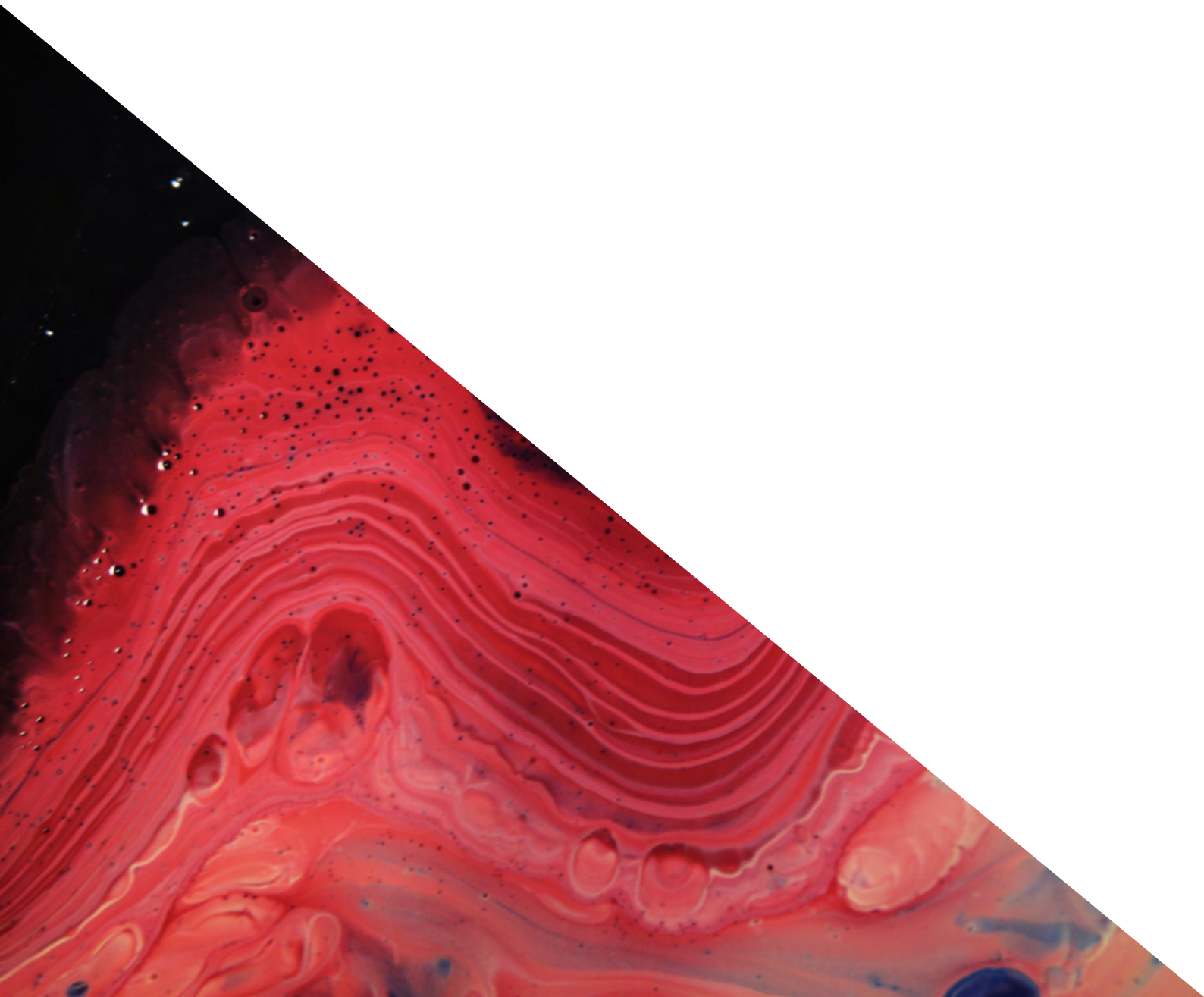


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Foreword

1.1 The Handbook

This handbook applies to students starting the MSc Radiation Biology course in Michaelmas Term 2020. The information in this handbook may be different for students starting in other years.

1.2 Version Number

Version 2020/1.0

1.3 Examination Regulations

The Examination Regulations relating to this course are available at [Examination Regulations](#). If there is a conflict between information in this handbook and the Examination Regulations then you should follow the Examination Regulations. If you have any concerns please contact Jane Johnson at the Department of Oncology at graduate.studies@oncology.ox.ac.uk.

The information in this handbook is accurate as at 1st October 2020; however it may be necessary for changes to be made in certain circumstances, as explained [here](#). If such changes are made, the department will publish a new version of this handbook together with a list of the changes and students will be informed.

1.4 Welcome from the Course Director

I would like to offer you a warm welcome to the MSc in Radiation Biology and the Department of Oncology. The MSc in Radiation Biology is an established course entering its twelfth year and attracts students from around the globe. The course is a one-year, full-time, taught course that will equip you with the scientific knowledge and cutting edge technical skills to become either a scholar, teacher or researcher for the next generation of radiation biology specialists. The MSc may form the first year of training of students interested in continuing on to a DPhil in Radiation Oncology. Many of our graduates have gone on to study for a PhD/DPhil, continued in research, applied to study medicine or returned to finalise their medical training.

The MSc in Radiation Biology consists of a five-month core taught course based on lectures covering the emerging areas of fundamental radiation physics and biology for oncology, with implications for the treatment of cancer by radiotherapy and applications to radiation protection. This is followed by a six-month high-quality research project. In addition to the lectures, the course will comprise demonstration sessions, sessions on critical review of scientific papers and opportunities to develop oral presentation skills.

The taught content of the course is reviewed and updated annually to include new information. Students who qualify for the MSc degree will have obtained a high level of knowledge of Radiation Biology principles, information, and practical techniques. The purpose of the handbook is to inform you of the key information required for your graduate studies and to outline the facilities available to you in the Department, and the wider University.

I wish you the very best for the forthcoming year.

Tim Humphrey
MSc Course Director



1.5 Useful department contacts

Prof Tim Humphrey, Course Director

Email: timothy.humphrey@oncology.ox.ac.uk

Tel: 01865 617327

Oncology Graduate Studies Office:

Mrs Jane Johnson, Research Training and Development Manager

Email: jane.johnson@oncology.ox.ac.uk

Tel: 01865 617017

Charonne Prosser, Graduate Studies Administrator

Email: graduate.studies@oncology.ox.ac.uk

Tel: 01865 617410

Old Road Campus Research Building Reception

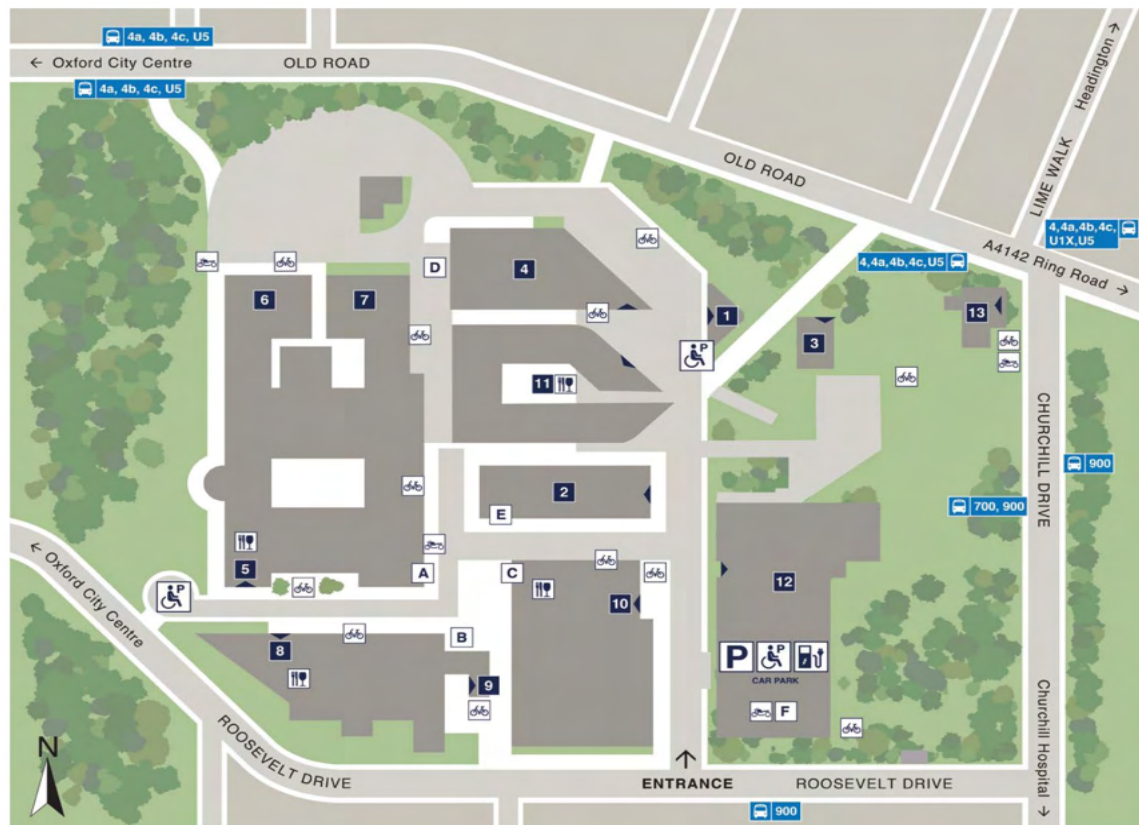
Email: orcrb.reception@ndm.ox.ac.uk

Tel: 01865 617300

Link	Description
Department of Oncology	Department of Oncology website
MSc Canvas site	The Virtual Learning Environment for the Course (VLE), Canvas. All the course specific content can be found on here
Oncology Student Canvas Site	Canvas site for all Oncology Students. Department specific information, guidance, and training can be found on here
University Student Handbook	General information and guidance to help you to make the most of the opportunities on offer at the University of Oxford. It also provides you with formal notification and explanation of the University's codes, regulations, policies and procedures
Disability Advice Service	Learn about the Disability Advisory Service, how to make an appointment or attend a drop in session, and find contact details for disability contacts across the University. Departmental Disability Lead contact: Jane Johnson
Oxford Libraries	Information about The Bodleian Libraries at the University of Oxford and useful contacts. Search Oxford Libraries online (SOLO) - the main search engine for library collections across Oxford The Medical Sciences outreach librarians are: Nia Roberts Eli Harriss

1.6 Teaching locations

Teaching takes place at the Old Road Campus Research Building, Roosevelt Drive, Oxford OX3 7DQ. Further teaching locations are the New Richards Building, Boundary Brook House and the Richard Doll Lecture Theatre. Numbers 3, 13 and 8 below.



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|---|---|---|
| <p>1 The Triangle Nursery
Kennedy Institute</p> <p>3 New Richards Building</p> <p>4 NDM Research Building
Target Discovery Institute
Centre for Tropical Medicine and Global Health</p> <p>5 Wellcome Centre for Human Genetics (WHG)</p> <p>6 Henry Wellcome Building for Molecular Physiology
Offices of the Nuffield Professor of Medicine
ENTRANCE VIA BUILDING 5</p> <p>7 Henry Wellcome Building for Particle Imaging
ENTRANCE VIA BUILDING 5</p> <p>8 Richard Doll Building
Nuffield Department of Population Health
Cancer Epidemiology Unit
Clinical Trial Service Unit
National Perinatal Epidemiology Unit
Regius Professor</p> | <p>9 Old Road Campus Estates Annexe
EMCOR</p> <p>10 Old Road Campus Research Building
Department of Oncology
CRUK/MRC Oxford Institute for Radiation Oncology
Institute of Biomedical Engineering
Jenner Institute
Bodleian Knowledge Centre (Library Services)
Ludwig Institute for Cancer Research
Structural Genomics Consortium
Nuffield Department of Surgical Sciences</p> <p>11 Big Data Institute
Nuffield Department of Population Health</p> <p>12 Innovation Building
- Multi-storey car-park (authorised users only)
- Kitchen facilities
Bioescalator
Novo Nordisk
Oxford University Security Services</p> | <p>13 Boundary Brook House
Joint Research Office
- Research Services, Medical Sciences Division
- Clinical Trials and Research Governance
- Human Tissue Governance
- Medical Sciences Division Business Development
Nuffield Department of Primary Care Health Sciences
Medical Sciences Divisional Safety Officers
Medical Sciences Division IT Services</p> |
|---|---|---|

Loading and Delivery Bays

- | | |
|---|------------------------------|
| A Wellcome Centre for Human Genetics | F Innovation Building |
| B Richard Doll Building | Cycle Racks |
| C Old Road Campus Research Building | Motor Bike Parking |
| D NDM Research Building | Café |
| E Kennedy Institute | Entrances |

1.7 Key dates

University Term dates 2020/21:

	Start	End
Michaelmas Term	Sunday 11 October	Saturday 5 December
Hilary Term	Sunday 17 January	Saturday 13 March
Trinity Term	Sunday 25 April	Saturday 19 June

Please note that some MSc teaching activities take place outside these dates, so please check the course timetable for more details.

Assessments and Examinations:

Formative assessments (do not contribute to final mark):

	Deadline
Assessment 1	Week 3, Term 1
Assessment 2	Week 5, Term 1
Assessment 3	Week 7, Term 1
Assessment 4	Week 3, Term 2
Assessment 5	Week 5, Term 2

Summative assessments (do contribute to final mark):

	Deadline
Qualifying examination (Multiple choice questions) – Pass required	Week 9, Term 1
Essay (15%)	Week 7, Term 2
Examination (25%)	Week 9, Term 2
Dissertation (60%)	Mid-August
Viva voce (component of dissertation grade)	Early September

Details of the above assessments will be uploaded to the student portal MSc Radiation Biology [Canvas](#) site.

2

The Course Content and Structure

2.1 Overview

The University Awards Framework (UAF) is an overarching description of the qualifications and awards which the University offers. It positions those qualifications at the appropriate level of The Framework for Higher Education Qualifications of UK degree awarding bodies in England, Wales and Northern Ireland (FHEQ) and takes into account the qualification characteristics which form part of the Quality Code. Further details are available [here](#).

This handbook covers the one year, full-time Master of Science in Radiation Biology, FHEQ Level 7.

2.2 Course aims

The MSc in Radiation Biology offers a one year training programme in the areas of fundamental radiation biology, translational radiation biology, and radiation protection. The course content has been developed to align with the priorities for radiation biology training programmes as outlined by the International Atomic Energy Agency (IAEA).

On completion of this course students will be prepared to progress to the DPhil in Oncology at the University of Oxford working with one of the research groups within the Oxford Institute for Radiation Oncology. It will also provide a Master's level qualification for individuals who wish to continue in academic research in radiation biology elsewhere, or to start a career in other professions that require knowledge of radiation biology e.g. academic personnel associated with radiation protection issues.

2.3 Course learning outcomes

On completion of the course students will be able to demonstrate a knowledge and understanding (A) of:

- Fundamental radiation biology; linking the temporal and spatial distribution of physical interactions with ionising radiation and associated chemistry, with the ultimate response of the cell and key factors modulating this response
- The pathogenesis of cancer and normal tissue toxicity associated with exposure to ionising radiation, and the dependence of the response on the microenvironment and intercellular communication
- Physical, chemical, and biological techniques used in radiotherapy to enhance tumour control probability while minimising normal tissue toxicity



- The use of clinical trials in radiation oncology along with the rationale for, and application of, state-of-the-art and novel approaches to improve cancer care.
- The risk and underlying biological basis of the hazards associated with typical environmental, occupational and medical exposures to ionising radiation, associated legislation and their practical implementation to reduce risk to individuals and populations
- The application of the scientific method to address research questions within the field of radiation biology.

In addition, students will acquire intellectual skills (B) such as:

- Critical assessment, including sourcing, appraisal, and evaluation of published material
- Scientific writing, including the development of reasoned and well supported arguments
- Data handling and interpretation, including use of statistical methods.

Students will acquire practical skills (C):

- Laboratory practical skills; both specific to radiation biology and transferable to other areas of scientific laboratory research
- Independent execution of experiments, data analysis, and evaluation.

They will also acquire transferable skills (D):

- Use of information technology to support scientific research and the production of academic reports
- Time and resource management commensurate with an active team environment
- Familiarity with laboratory safety and health and safety at work
- Written and oral communication and presentation skills.

The dissertation will cover additional knowledge outcomes dependent on the content of the research project selected.

2.4 Course structure/description

The MSc in Radiation Biology will run for one academic year and is composed of two segments. Starting in week 0 of Michaelmas Term, the first segment (five months) forms the 'core' theoretical and practical component of the course. The second segment (six months) provides the students with an opportunity to undertake a research project in a University research group. Both segments are compulsory.

The modules for study will be:

1. Physics and Chemistry of Radiation Action
2. Molecular Radiation Biology
3. Cellular Radiation Biology
4. Normal Tissue and Applied Radiation Biology
5. Whole Body Exposure and Carcinogenesis
6. Radiation Epidemiology
7. Imaging Technologies
8. Tumour Microenvironment
9. Applications of Radiation Therapy
10. Translational Radiation Biology
11. Clinical Radiation Biology
12. Radiation Protection

Areas to be covered in each term are as follows:

Michaelmas Term: Material delivered as six Modules (Modules 1–6) running from the beginning of October (week 0) to early December (week 8). Students will sit a qualifying examination in week 9 based upon Modules 1–6. This examination will normally be in the form of a multiple choice question (MCQ) examination. Students must pass this examination to proceed with the course. One resit only will be offered in the second term (week 0 of Hilary Term).

Hilary Term: Material delivered as six modules (Modules 7–12) running from early January (week 0) to late February (week 6). Students will submit an extended essay of 3000 words in week 6. Only one resubmission will be offered (week 8 of Trinity Term).

Students will sit a second written examination in week 9 of Hilary Term based upon Modules 1–12. This examination will be in the form of essay questions. One resit only will be offered in the third term (week 0 of Trinity Term).

Hilary Term, Trinity Term and Long Vacation: Laboratory research project in radiation biology or a related area. This starts after the end of the taught part of the course, sometime in March, and runs until August. A research dissertation of no more than 10,000 words must be submitted by the given date in August. The students will present their preliminary findings in an oral presentation towards the end of June.



Approximately two weeks after the dissertation hand-in date, students will also face a short *viva voce* with the Board of Examiners. One resit only will be offered at the time the dissertations are examined during the following academic year.

2.5 Syllabus

The full syllabus can be found on the course [Canvas](#) site along with information relating to teaching staff, dates and times of lectures, demonstrations, Module information, and reading lists.

3

Teaching and Learning

3.1 Organisation of teaching and learning

Fundamental radiation biological science and laboratory methods are taught in the first term (Michaelmas) and the first half of Hilary Term, over a series of 12 modules. Each module is delivered over a period of one or two weeks and together the 12 modules comprise the ‘core content’ of the course. The course is overseen by the Course Director who provides general advice throughout the entirety of the course. Lectures will be given by departmental scientists and clinicians and a range of national and international experts, with demonstration sessions given by local staff, to give students a wide knowledge and understanding of radiation biology. Demonstration sessions will enable students to observe particular techniques that are used in this speciality subject area.

The remaining half of Hilary Term, the whole of Trinity Term and until August, a period of approximately six months, is allowed for a high quality laboratory research project. This six-month practical project will give the student experience of laboratory research, and an appreciation of scientific research and how results are analysed and presented. Each student will be supervised by a senior member of staff in their laboratory during this project.

Teaching is a combination of the following methods, the full teaching timetable is available on Canvas.

Lectures: Formal one to two hour lectures will be delivered by senior staff in the department. Each Module consists of 6–12 lectures, and each module will take one week or more to complete. Lectures are designed to introduce concepts and related background material and to highlight recent developments and current issues. Lecturers are experts in their fields from within the University of Oxford and other institutions.

For Michaelmas Term, there will be a mixture of face-to-face and remote learning. Students (divided into smaller groups) will have the opportunity to attend lectures delivered in person by University of Oxford staff. External lecturers will be delivering their lectures remotely.

The policy on the recording of lectures and other formal teaching sessions can be found [here](#).

Laboratory demonstrations: Some modules include demonstrations that provide students with important knowledge about laboratory and research skills relevant to the course theory.



Self-Directed Learning (SDL) sessions/Journal Clubs: During a module, students will be given a collective topic to research individually in their own time without facilitation.

Tutorials and Revision Sessions: Each module will include a small group tutorial; in addition tutorials will be available on an individual basis for those who require additional assistance in understanding central concepts or to fill in details for students with varying scientific backgrounds. Revision sessions will be scheduled to aid students in their preparation for examinations.

Laboratory research project: During the second half of Hilary Term and during Trinity Term and the Long Vacation, students will be seconded to a research group working in a radiation biology area to undertake a research project. Secondments will normally be arranged with Institute researchers although some projects may be offered in other departments within the Division, Oxford Brookes University, or Public Health England (PHE) at Harwell. Students will be supervised by a senior member of the research group concerned and will gain valuable experience in a host of research skills such as: experimental design and execution, statistics, data analysis and scientific writing/presentation.

If necessary, desk-based research projects will be offered in the event of changes to government advice on social distancing and reduced access to facilities.

Students are encouraged to raise any issues or concerns about their teaching or supervision as soon as possible so that they can be addressed promptly. Please refer to Section 7.

3.2 Practical demonstrations

Demonstration sessions are timetabled into the modules and are used to demonstrate specific principles of radiation physics, radiation biology, cancer biology and the treatment of cancer. Students work in small groups to observe a wide variety of scientific techniques/apparatus. All aspects of health and safety in the laboratory will be explained before any practical work, and will be overseen by the Department's Health and Safety manager. The timetabling of these demonstrations will depend on safe access to the laboratory and it is expected that these sessions will take place in Hilary Term. Alternative arrangements will be made, e.g. filmed demonstrations, if restrictions preclude in-person demonstrations from taking place.

3.3 Fieldwork

Visits to clinics and other facilities are part of the wider provision and will be offered, if possible, dependent on restrictions. These visits complement the lecture material. They are not compulsory but attendance is advised as aspects of the material covered may be subject to examination. The visits are provided at no cost to the students. All aspects of health and safety in the laboratory will be explained before the visits, and will be overseen by the Department's Health and Safety manager.

3.4 Research project and dissertation

Available projects are circulated to the students no later than the end of Michaelmas Term. The students are encouraged to discuss these projects with the project supervisors prior to making ranked choices by the end of week 2 of Hilary Term. Project allocations will be distributed by the end of week 6 of Hilary Term.

Each student will be assigned to a Supervisor throughout the duration of the MSc laboratory research project. The Supervisor will be a senior member of the Oxford Institute for Radiation Oncology, active in either research, teaching or clinical sectors, or a close collaborator in a recognised laboratory of the University or PHE. The Supervisor will meet with his/her assigned student throughout the project and will be responsible for general guidance, academic support, examination preparation and careers advice. The Supervisor will be available to discuss challenging issues and comment on the first draft of the dissertation and other written work. The Supervisor will provide a written report on the progress of the project and the performance of the student to the Examination Board.

If necessary, desk-based research projects will be offered in the event of changes to government advice on social distancing and reduced access to facilities.

Guidance on the preparation of the dissertation is provided in the Examination Conventions.

3.5 Expectations of study

The course is full time. In addition to lectures, tutorials and other activities, students are expected to spend time in private study. It is generally expected that students will spend at least between 15-20 hours a week on study. It should be noted that the lectures only provide core material, which will allow students to achieve 'pass' grades in the assessments. To pass the MSc with distinction, students will need to provide the examiners with evidence of comprehensive knowledge and understanding, which often can only be achieved through additional background reading and practice.

Following the Written Exam at the end of Hilary Term, the work pattern during the dissertation project time is determined by the requirements of the research and must be in agreement with the project Supervisor. It is normal to expect full time but flexible hours, some experimental work may require late or weekend working. This is a guide only and will vary between different students. Students are responsible for their own academic progress.

3.6 Responsibilities of the student

1. The student must accept his or her obligation to act as a responsible member of the University's academic community.
2. The student should take ultimate responsibility for his or her work programme and endeavour to develop an appropriate working pattern, including an agreed and professional relationship with the supervisor(s). The student should discuss with the supervisor the type of guidance and comment which he or she finds most helpful, and agree a schedule of meetings.
3. The student should make appropriate use of the teaching and learning facilities available within the University, as well as facilities for career guidance and development.
4. It is the student's responsibility to seek out and follow the regulations relevant to his or her course, and seek clarification from the Course Director, Graduate Studies Administrator(s), Supervisors, and elsewhere, if this is necessary.
5. The student should not hesitate to take the initiative in raising problems or difficulties, however elementary they may seem. He or she should ensure that any problems regarding the course are drawn to the attention of the supervisor so that appropriate guidance may be offered.



6. The student should seek to maintain progress in accordance with the plan of work agreed with the supervisor, including in particular the presentation of the required written material in sufficient time for comment and discussion. Both the student and supervisor will want to keep a record of all formal, scheduled meetings. They may well want to agree a record of what has been discussed and decided.

7. The student should recognise that a supervisor may have many competing demands on his or her time. The student should hand in work in good time to the supervisor and give adequate notice of unscheduled meetings. The need for adequate notice also applies to requests for references from the supervisor.

8. The student should be aware that the provision of constructive criticism is central to a satisfactory supervisory relationship, and should always seek a full assessment of the strengths and weaknesses of his or her work.

9. If the student feels that there are good grounds for contemplating a change of supervision arrangements, this should first be discussed with the supervisor or, if this seems difficult, with the Course Director or the College Advisor.

10. Where problems arise, it is essential that a student gives full weight to any guidance and corrective action proposed by the supervisor.

Refer to the paid work guidelines [here](#).

4

Assessment

4.1 Assessment structure

Students will be assessed by various methods during the course that will allow both formative and summative assessment of student progress ([Examination regulations](#)).

There are five formative assessments in the first two terms.

The summative assessments are weighted as follows:

- Qualifying examination (Multiple choice questions) – Pass required
- Essay (15%)
- Examination (25%)
- Dissertation (60%)

Summative assessment methods: All summative assessments contribute to the final mark.

1. The first summative assessment will be towards the end of Michaelmas Term in the form of a multiple choice question (MCQ) examination based upon material presented in Modules 1–6. Students will need to achieve the pass mark of 50% in this qualifying examination to be allowed to proceed with the course. One resit will be offered in week 0 of Hilary Term and appropriate remedial teaching offered. Students who fail the resit will not be allowed to continue with the course. This exam does not contribute to the final mark.
2. During Hilary Term students will be required to prepare a 3,000 word assignment. It should be a well-researched scholarly presentation on the subject area covered by the assignment title to which it relates. The titles will be given to the students during Michaelmas Term and the final piece of work should be uploaded to an online authorised submission platform (details of which will be notified to the students by the Course Administrator) by the end of week 7 of Hilary Term for formal assessment. This work will be graded according to a mark scheme formulated by the Board of Examiners and approved at the annual meeting of the Advisory Committee. This will count towards the final evaluation, representing 15% of the final course mark. The aim of the assignment is to provide students with an opportunity to develop their knowledge and understanding of key course material, and to use the skills developed in the essays written in Michaelmas Term and the analysis skills developed in the statistics teaching throughout the course. Only one resubmission will be offered in week 8 of Trinity Term. Students who fail the resubmission will not be allowed to continue with the course.

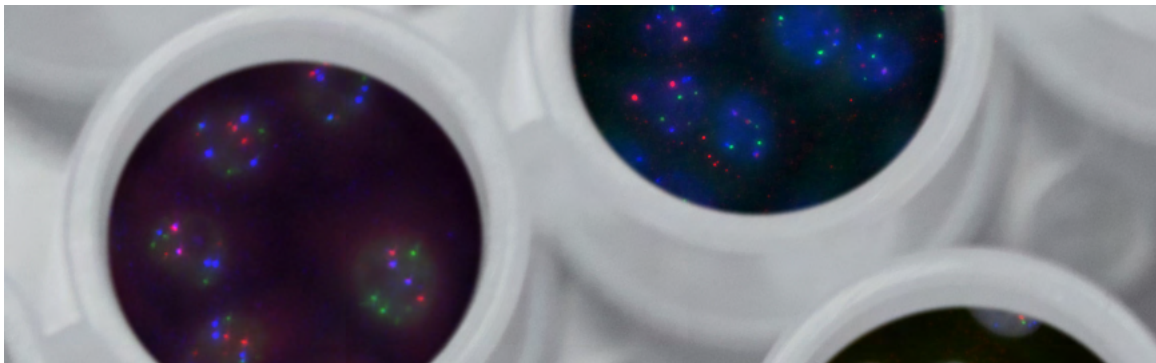
3. At the end of Hilary Term (week 9) students will be required to sit a three hour written examination paper. This paper will be essay based and will cover all 12 modules. This work will be graded according to a mark scheme formulated by the Board of Examiners and approved at the annual meeting of the Advisory Board and will count towards the final evaluation for the award of an MSc in Radiation Biology, representing 25% of the final course mark. One resit only will be offered in week 0 of Trinity Term following appropriate remedial teaching. Students who fail the resit will not be allowed to continue with the course.
4. Students will also undertake an original laboratory research project in the second half of the year (six months, from March until August) in Institute laboratories, or the laboratories of collaborating departments, which will be subsequently submitted to the Examination Schools as a written dissertation (10,000 words maximum) by a given date in August. If circumstances require it, a purely library-based project will be acceptable. Students will present their work to Institute members (with the examiners excluded) in the form of an oral/slide presentation followed by discussion in June. Students will be given a short viva voce in early to mid-September by the Board of Examiners. Examiners will grade the dissertation/ viva voce as a whole, against previously determined criteria and this will count towards the final evaluation of the award, representing 60% of the final course mark. One resit only will be offered at the time the dissertations are examined during the following academic year and students must pass this part of the course for the award of an MSc in Radiation Biology.

4.2 Feedback on learning and assessment

Formative assessment methods and feedback: Students will be required to submit five assessments during Michaelmas and Hilary Terms. These will test knowledge and understanding of critical/fundamental aspects of the module(s), along with the ability to collate relevant information from primary scientific literature and present it in a scholarly fashion. Feedback will be provided for each assessment.

Students may keep laboratory books, containing write-ups of all laboratory demonstrations, but this is not compulsory. Much use will be made of Canvas-based teaching materials. This, together with Journal Clubs, will allow the development of critical review and understanding of key scientific papers covering the fundamental concepts, and allow creative discussion between the students and departmental staff. (Further information on feedback can be found in the Teaching and Learning section above.)

Summative assessment feedback: Written feedback is provided on the dissertation project by the supervisor and after the viva by the Chair of the Examiners. If you have any issues with teaching or supervision please raise these as soon as possible so that they can be addressed promptly. Details of who to contact are provided in section 7.2, complaints and appeals.



4.3 Examination conventions

Examination conventions are the formal record of the specific assessment standards for the course or courses to which they apply. They set out how your examined work will be marked and how the resulting marks will be used to arrive at a final result and classification of your award. They include information on: marking scales; marking and classification criteria; scaling of marks; progression; resits; use of viva voce examinations; penalties for late submission; and penalties for over-length work.

The MSc in Radiation Biology Examination Conventions can be found on [the MSc Canvas site](#).

The definitive version is at the link above. Modifications will be published to prospective candidates not less than one whole term before the examination takes place or, where assessment takes place in the first term of a course, at the beginning of that term.

4.4 Good academic practice and avoiding plagiarism

University definition: *“Plagiarism is presenting someone else’s work or ideas as your own, with or without their consent, by incorporating it into your work without full acknowledgement. All published and unpublished material, whether in manuscript, printed or electronic form, is covered under this definition. Plagiarism may be intentional or reckless, or unintentional. Under the regulations for examinations, intentional or reckless plagiarism is a disciplinary offence.”*

The Oxford Students’ website guidance on plagiarism can be found [here](#).

Students are encouraged not to rely on heavy reuse of review articles as this can lead to a high similarity index score detected by Turnitin, and the development of habits not in accordance with good scientific and academic integrity. Instead students are encouraged to read widely from many primary sources and to synthesise their own arguments and opinions. This requires good time management, note taking, referencing, research and library skills and information literacy: please use the Oxford Students’ [skills webpage](#).

Further explanatory material is provided in Annex F of the [Policy and Guidance for Examiners](#).

4.5 Entering for University examinations

The Oxford Students' website for examination entry and alternative examination arrangements can be found [here](#).

4.6 Examination dates

There are two formal examinations for the MSc Radiation Biology: the Qualifying Exam in Week 9 of Michaelmas term and the Written Examination. The written paper will take place as an online open-book examination. The actual date and time will be confirmed in Hilary term.

4.7 Sitting your examination

Information on (a) the standards of conduct expected in examinations and (b) what to do if you would like examiners to be aware of any factors that may have affected your performance before or during an examination (such as illness, accident or bereavement) are available on the [Oxford Students' website](#).

4.8 External examiner and examiners' reports

A list of the examiners responsible for this course can be found in the Examination Conventions. Students are strictly prohibited from contacting examiners directly. If students are unhappy with any aspect of their assessment(s) then they may make a complaint or appeal (refer to Section 7.2).

Examiners' reports are normally available for courses with sufficient numbers of candidates to allow anonymity to be maintained. When candidate numbers are low the Examiner's reports are withheld. Some reports may be located on the MSc Canvas site.

4.9 University student prizes

There are no student prizes allocated to this course. A central list of all University student prizes can be found [here](#).

5

Skills and Learning Development

5.1 Academic progress

Overall responsibility for monitoring and reporting on students' academic progress is held by the Course Directors.

Formal termly reporting is via the Graduate Supervision Report system (GSR) and is undertaken by the dissertation project supervisor for Trinity Term and the Long Vacation.

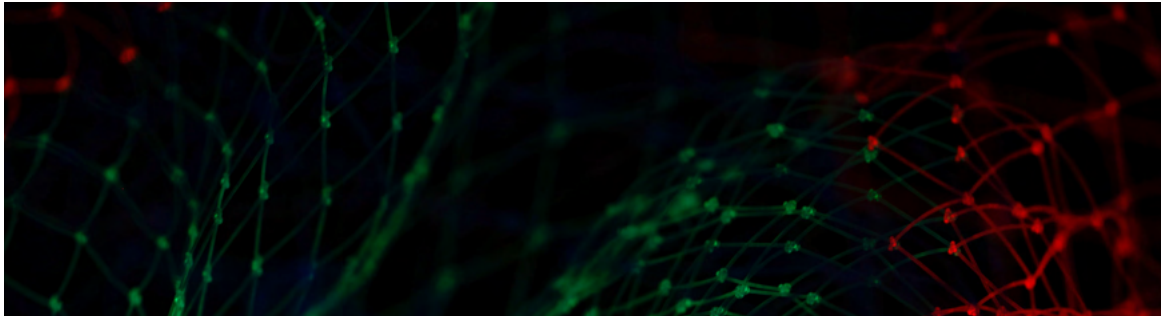
Students may seek advice by email or in person from members of the department who are not directly involved in their teaching or supervision.

5.2 Learning development and skills

Alongside your core subject area lectures, there will also be the opportunity to develop transferable skills applicable to future careers and to support your academic development.

Within the Department of Oncology there is a programme of Academic and Professional Skills (APS) workshops designed to support skills development throughout the year. Details of all scheduled APS sessions can be found in the dedicated space on [Canvas](#).

Students can also take part in the Divisional Skills Training Programme and attend Divisional seminar days. Support in this area will be sought primarily from the Medical Sciences Division Skills & Training Initiatives, particularly with regard to online skills training. Courses available at the present time include business and commerce, communication skills, computing skills, copyright/patents/intellectual property, critical appraisal, data protection, library skills, statistics training, writing skills, ethics, publishing in science, and career planning. In addition, a wide range of information and training materials are available to help you develop your academic skills through the Oxford Students' [website](#).



5.3 Induction

The Department provides a comprehensive induction for all new students during Week 0 prior to the start of Michaelmas term (October). This runs in parallel with induction events organised by colleges and the Medical Sciences Division.

5.4 Opportunities to engage in the department research community

There are many research seminars available within the Department and the wider University. Attendance at relevant seminars is encouraged to enable engagement with the research students and the University researchers and their visiting speakers.

5.5 Careers information and advice

In addition to advice from the Course Directors and your dissertation supervisor more information on careers can be found at the [University Careers Service](#). There is an extensive range of support for students including workshops and one-to-one appointments.

6

Student Representation, Evaluation and Feedback

6.1 Department representation

The MSc students elect a student representative at the start of Michaelmas Term. This student representative is a member of the termly MSc Course Directors' Meeting (Course Committee), the Oncology Graduate Studies Committee and the Divisional Graduate Joint Consultative Committee (GJCC). Course representative contact details can be found on the course Canvas site. An outline of the student representative's role is summarised in Annexe 1.

6.2 Division and University representation

Student representatives sitting on the Divisional Board are selected through a process organised by the Oxford University Student Union (OUSU). Details can be found on the [OUSU website](#) along with information about student representation at University level.

6.3 Opportunities to provide evaluation and feedback

The Department recognises that regular student feedback is an essential part of the ongoing development of the course. Feedback will be regularly obtained from a variety of different sources.

Individual feedback:

- All students will be asked to complete a detailed survey at the end of each MSc module. This will be reviewed by the Course Director. A summary report of feedback will be reviewed by the termly Course Directors' Meeting (Course Committee). Student Representatives will be in attendance at these committees where they will also be able to give a verbal report.
- All students are asked to provide individual feedback via termly reports in the Graduate Supervision Report system (GSR).
- All students will be asked to complete an end of course survey after they receive their examination results.
- Dissertation supervisors will complete a report on each student at the end of the research placement. This is reviewed by the Examinations Board alongside the dissertation and the viva.
- The Chair of Examiners and the External Examiner will provide an annual report on the examination process to the University. These reports are available to students on the MSc Canvas site.

The day-to-day running of the MSc course is overseen by the Course Director(s) and through the termly MSc Course Director's (Course Committee) meetings involving the Course Director(s), Research Training and Development Manager, Graduate Studies Administrator, and student representative. The minutes from the committee are reviewed at the Oncology Graduate Studies Committee.

University wide feedback:

Students on full-time and part-time matriculated courses are surveyed once per year on all aspects of their course (learning, living, pastoral support, college) through the Student Barometer. Previous results can be viewed by students, staff and the general public [here](#).

7

Student Life and Support

7.1 Who to contact for help

Although the Department primarily provides academic support and pastoral support is primarily provided through College Advisors, the department would like to positively support students with their graduate studies wherever we can. Students are encouraged to speak to a member of the course team if they are experiencing any difficulties.

Colleges: Every college has their own system of support for students, so students are encouraged to contact their college academic office for more information on who to contact and the services available.

If students are ill and unable to attend departmental classes, lectures or demonstrations they should advise the Graduate Studies Office, as soon as possible (Refer to 1.6 for contact details).

Details of the wide range of sources of support which are available more widely in the University can be found on the [Oxford Students' website](#), including items on mental health, physical health and disability.

The [Oxford Student Union](#) is the representative body for all University of Oxford students and their direction and ideas are led by their student members.

7.2 Complaints and academic appeals within the Department of Oncology

A student can raise a complaint with the Proctors in relation to the following:

- University administrative and support services (including departmental facilities and central facilities such as libraries, counselling etc.)
- University academic services and support (departmental teaching, supervision etc.)

The Proctors will consider complaints raised by students under the University Student Complaints Procedure.

Please note: any concerns about the decision made by an academic body (e.g. board of examiners) should be pursued under the University Academic Appeals Procedure; if the complaint relates to admissions, college services, staff and/or student conduct, Oxford SU, research integrity or public interest disclosure, the student needs to make their complaint under one of the University's other complaints procedures.

Complaints

Before the student makes a formal complaint you should try and resolve the matter with the person or body responsible.

Libraries: If the matter relates to one of the Bodleian Libraries or another University library, you should raise it with staff in the library in the first instance and thereafter with the Head of the Library in question. If the matter relates to a college library, you should pursue it via the college's procedures, as with any other college matter.

University Admission and Services (UAS): Write to the head of the respective section

Department facilities: Write to the Departmental Administrator ([Liz Barnes-Moss](#)) or Head of Department ([Professor Mark Middleton](#))

Teaching: If they feel able to do so, the student can take up their concerns with the member of staff directly. If not, they can take it up with their Director of Graduate Studies ([Professor Eric O'Neill](#)). If the matter involves one of these individuals and the student wishes to raise it with somebody else, they must speak to the Head of Department ([Professor Mark Middleton](#)).

The student may wish to take advice about their concerns from their College Advisor. They can also contact the Proctors' Office and speak to a caseworker (in confidence and without committing themselves to any action) if they consider making a formal complaint.

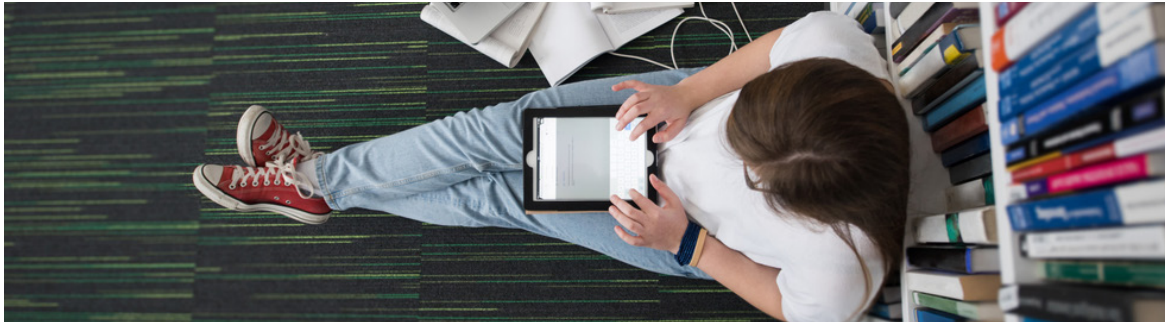
Usually, the initial raising of a complaint is successful in resolving a problem. If, the student feels that it hasn't, or that there's a serious problem that needs to be addressed in the University system, then they can make a formal complaint to the Proctors under the [University Student Complaints Procedure](#).

Academic appeals

An academic appeal is an appeal against the decision of an academic body (e.g. boards of examiners), on grounds such as procedural error or evidence of bias. There is no right of appeal against academic judgement.

If a student has any concerns about their assessment process or outcome it is advisable to discuss these first informally with their Course Director ([Dr Tim Humphrey](#)) or Director of Graduate Studies ([Professor Eric O'Neill](#)). They will be able to explain the assessment process that was undertaken and may be able to address the concerns. Queries must not be raised directly with the examiners.

If students still have concerns they can make a formal appeal to the Proctors who will consider appeals under the [University Academic Appeals Procedure](#).



7.3 Student societies

Suggestions for students' societies relevant to this course include:

[ARR \(Association for Radiation Research\)](#)

[BACR \(British Association for Cancer Research\)](#)

[BIR \(British Institute of Radiology\)](#)

7.4 Policies and regulations

The University has a wide range of policies and regulations that apply to students. These are easily accessible through the A-Z of University regulations, codes of conduct and policies available on the [Oxford Students' website](#).



Facilities

8.1 Social spaces and facilities

The Old Road Campus Research Building (ORCRB) has a ground-floor café. Other campus cafés serving a wider selection of hot foods are available in the Richard Doll Building, the Li Ka Shing Centre for Health Information and Discovery (known as the BDI building) and the Wellcome Trust Centre for Human Genetics. All the buildings are a short walk from the ORCRB.

Hot desk spaces are available to everyone in the Atrium.

These facilities are subject to change as a result of the Covid pandemic and the requirement for social distancing.

8.2 Workspace

MSc students are not provided with individual desk space during the taught element of the course but are given desk space/lab space when they start their research placement. There is a quiet work space in the Knowledge Centre located on the ground floor of the building.

The Department has its own team of IT support staff to support students if there are problems with connectivity. Difficulties with personal hardware may need to be taken to the central ITS team on the Banbury Road in Oxford.

8.3 Libraries/Museums

The Committee for Libraries and other Information Services coordinates library and IT provision within the Division of Medical Sciences. The ORCRB has its own library and the MSc Committee ensures that there are copies of each of the books on the reading list for the MSc in the dedicated study room. Other library facilities are available within the University and the Colleges.



8.4 IT

There is an extensive network of IT resources and associated support in the Institute, and generally across the University of Oxford. The IT systems within the Institute are supported by the Oncology IT Services.

Colleges all provide excellent IT resources and Support Officers who are readily available to train and assist students.

IT Services (ITS), is a dedicated University resource which provides training and facilities for students at a variety of IT levels, from beginners to those wishing to learn sophisticated programming languages. IT Services also provides discounted software and virus protection/security packages. Our students will undertake training with IT Services early in their first term, as part of their ongoing professional development. Familiarity with IT systems will be crucial as the MSc Course in Radiation Biology will use Canvas, the University of Oxford's Virtual Learning Environment (VLE).

The Division has two senior academics responsible for the development of IT resources in teaching, and for educating and encouraging other staff in the use of IT in their teaching methodology.

If you have problems with your IT accounts, the first place to go for help should be the IT Support Staff in your college or department. Departmental IT help contacts: [Greg Blow & Tom Lewis](#)

8.5 Experimental facilities/laboratories

Laboratory facilities are provided within some research groups offering MSc research projects. Access to restricted areas of the building will be arranged, where necessary, at the beginning of the projects in March.

ANNEXE 1: STUDENT REPRESENTATIVE - ROLE DESCRIPTOR

The University welcomes the engagement of students and encourages participation in the governance, evaluation and development of their course of study on such matters as:

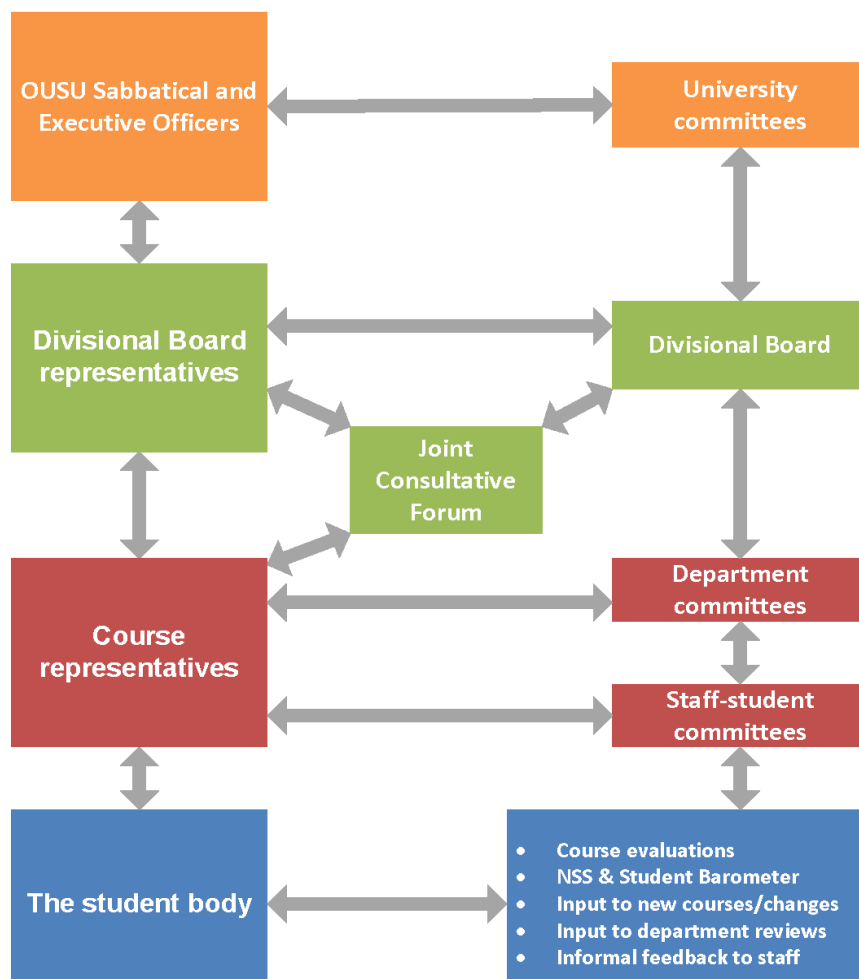
- a. changes in regulations;
- b. the review of examiners' reports;
- c. student feedback;
- d. course delivery and design;
- e. student support, including advice, guidance, facilities, training, and study skills;
- and
- f. appropriate approaches to individual student concerns.

An elected MSc Student Representative is required to provide feedback to the termly MSc Organising Committee/Course Committee and the Oncology Graduate Studies Committee. Participation need not involve attendance at meetings, although this is preferred for full-time students, written submission and responses to papers are welcomed.

The structure of the student representation system within the University is as follows:

Representatives

Structures and mechanisms



Duties of Student Representatives

Each accredited course should invite the student body to identify a representative [1] to:

1. Act as the focus for feedback from students
 - encourage high response rates to evaluation questionnaires
 - summarise key points raised
 - bring to Course Director's attention matters not covered in questionnaires or other formal mechanisms
2. Participate in Course Committee meetings [2]
 - comment on completed modules/units
 - advise on plans for future modules/units
 - comment on future offerings of the course (changes in regulations, course delivery and design)
3. Liaise with student representatives from other programmes/courses, in particular those who are members of the Departmental Committees.
4. Act as a focus for communications from the University or Department on matters relating to student representatives.
5. Report back to the students on their course the results of any representations made.

[1] The mechanism for this needs to be appropriate to the course concerned. Formal elections are not required but the invitation should be as inclusive as possible and shared representation encouraged where the duties are unfeasible or too burdensome for any individual student.

[2] Terms of reference need to reflect student participation, with appropriate arrangements for reserved business where confidential matters (such as reviews of student progress) are under discussion. Participation need not involve attendance at every meeting. Written submissions and responses to papers should be welcomed.

Where the information given in these Examination Conventions differs from information in Examination Regulations or handbooks, please treat these Conventions as the up-to-date source of information. Please contact graduate.studies@oncology.ox.ac.uk if you have any questions about teaching or assessment arrangements for your course.

Please note that it may be necessary to make changes to your course during the academic year, as a result of the Covid-19 pandemic. Should any such changes be required, all relevant students will be informed and a revised version of these Conventions will be published.

Examination Conventions for the Master of Science in Radiation Biology: 2020-21

1. Introduction

Examination conventions are the formal record of the specific assessment standards for the course or courses to which they apply. They set out how examined work will be marked and how the resulting marks will be used to arrive at a final result and classification of an award.

Approval and Distribution of Examination Conventions

These examination conventions have been approved for use in this academic year by the Course Committee for the MSc in Radiation Biology and ratified by the Head of Department and by the Medical Sciences Division Audit Sub-Committee, which has delegated authority from the Medical Sciences Board. (This is the supervisory body in this instance, according to the *Examination Regulations* and the Education Committee's *Policy & Guidance for examiners and others involved in University Examinations* <https://academic.admin.ox.ac.uk/examiners>)

These examination conventions were approved by the Course Committee in May 2020.

These examination conventions were approved by the Audit Sub-Committee in Michaelmas Term 2020.

These conventions are available on the Course Canvas site <https://canvas.ox.ac.uk/courses/58733>

Approved conventions are supplied to each candidate via circulars from the Chair of Examiners according to the deadline as stipulated in the *Examination Regulations*: 'not less than one whole term before the Examination takes place or, where assessment takes place in the first term of a course, at the beginning of that term'.¹

Candidates are notified of any approved changes to the examination conventions according to the deadline stipulated in the *Examination Regulations* (see above).

Approved conventions are supplied to each examiner/assessor, and to the Proctors' Office.

¹ See: *Examination Regulations*, Section I: Regulations for the Conduct of University Examinations, Part 8, Approval of Conventions and Submission of Papers to Examiners, cl. 8.1.

Sources of Information on Examinations for All Candidates

In addition to these examination conventions, candidates should be familiar with the following rules and regulations in relation to being examined on this course.

1. The regulations for the MSc in Radiation Biology: <https://examregs.admin.ox.ac.uk/>
2. *Examination Regulations*²: Section I: Regulations for the Conduct of University Examinations, and in particular, Parts 1, 9-14, and 16-20.
3. *The University Student Handbook*³, and in particular, Section 9, Examinations and course requirements.

2. Rubrics for individual papers

Schedule:

1. Physics and Chemistry of Radiation Action
2. Molecular Radiation Biology
3. Cellular Radiation Biology
4. Normal Tissue and Applied Radiation Biology
5. Whole Body Exposure and Carcinogenesis
6. Radiation Epidemiology
7. Imaging Technologies
8. Tumour Microenvironment
9. Applications of Radiation Therapy
10. Translational Radiation Biology
11. Clinical Radiation Biology
12. Radiation Protection

Examination/Assessment Requirements & Marking Scales/Criteria

This section details the criteria against which candidates will be assessed by the examiners for each summative (formally assessed) component, for the award of this degree.

Generalised disruption as a result of the COVID-19 pandemic will be taken into consideration at the marking stage as well as at the exam board stage; individual candidates' mitigating circumstances as reported using the University's mitigating circumstances process will be considered at the exam board stage.

2 <http://www.admin.ox.ac.uk/examregs/>

3 <https://academic.admin.ox.ac.uk/proctors-office>

Assessment 1: Qualifying Examination

1. Assessment Requirements:

Each candidate must pass a qualifying examination at the end of Michaelmas Term. The examination shall be on modules 1-6 in the schedule. Candidates who fail the qualifying examination once shall be permitted to re-take it on one further occasion only in Week 0 of Hilary Term.

2. Assessment Explanation / Description

The Qualifying Examination will be in Week 9 of Michaelmas Term. It will last for two hours. The format is online multiple choice questions. There are approximately 50 questions to be answered in two hours. Each question shows the number of marks available. There is no negative marking of incorrect answers. Questions are answered by choosing an option from a list provided.

3. Marking Scheme (numerical) and Marking Criteria (qualitative)

50% is the pass mark for the Qualifying Examination. Candidates will receive zero marks for any question, or part of a question, that they fail to answer.

Assessment 2: Extended Essay

1. Assessment Requirements:

Each candidate will be required to submit to the examiners an assignment of 3,000 words (excluding figures and figure legends, tables and bibliography) by uploading it to an authorised online submission platform (details of which will be notified to students by the Course Administrator) by noon, Friday of Week 7 of Hilary Term. A choice of assignment titles will be provided to students by Week 8 of Michaelmas Term. Candidates must pass this assignment in order to proceed with the course. Those who fail the assignment shall be permitted to re-take it on one further occasion only. The assignment should be re-submitted by noon, Friday of Week 8 of Trinity Term. The assignment will account for 15 per cent of the final marks.

2. Assessment Explanation / Description

Each essay should be no more than 3,000 words, exclusive of figures and figure legends, tables, bibliography and any necessary appendices, and should include a word count on the title page. It should be a well-researched scholarly presentation on the subject area covered by the assignment title to which it relates. The essays should be the student's own synthesis of the primary data: excessive dependence on secondary sources in essays will result in being marked down.

If you are in doubt as to the essay style, format or content for any particular area, you are strongly advised to ask the Graduate Studies Administrator, the Scientific Teaching Fellow or an appropriate module leader(s) for advice in good time before writing the essay.

3 Marking scheme (numerical) and Marking criteria (qualitative)

Domain/ score	Organisation, presentation and clarity	Breadth of coverage (from a variety of sources) and relevance to the title	Evidence of understanding and degree of critical assessment	Deficiencies of the essay, including any major points omitted or incorrectly presented
100-90	Very clearly presented in highly logical order; no grammatical or typographical errors	Comprehensive coverage with good balance of use of primary articles and review articles; integration of material from a variety of sources; highly relevant to title	Clearly demonstrates excellent level of understanding; sound critical assessment of the material; significant originality/ novelty of thought evident	No major points omitted, no conceptual or factual errors
89-80	Clearly presented in logical order; very few grammatical and typographical errors	Shows wide coverage with good balance of use of primary articles and review articles; integration of material from a variety of sources; highly relevant to title	Clearly demonstrates very good level of understanding; critical assessment of the material; originality/novelty of thought evident	No major points omitted, no major errors
79-70	Clearly presented in logical order; some grammatical and typographical errors	Shows breadth of coverage with good balance of use of primary articles and review articles; well integrated material; relevant to title	Clearly demonstrates good level of understanding; some attempt at critical assessment but limited originality/novelty of thought	No major points omitted, no major errors, some minor errors which do not affect conclusions
69-60	Reasonable clarity of pre- sentation and an attempt to present in a logical order or structured way; some grammatical and typographical errors	Shows reasonable breadth of coverage with more use of review articles than primary articles; well integrated material; relevant to title	Good level of understanding; little evidence of critical involvement with the material and no originality/novelty of thought	Some major points omitted, no major errors; some minor errors which do not affect overall conclusions
59-50	Adequate clarity of pre- sentation but somewhat defective in organisation; some grammatical and typographical errors	Adequate coverage with more use of review articles than primary articles; at least half the essay relevant to the title	Adequate level of understanding; no critical involvement with the material and no originality/ novelty of thought	Some major points omitted, no major errors, some minor errors which affect overall conclusions

49-40	Some deficiencies in clarity of presentation and defective in organisation; multiple grammatical and typographical errors	Some deficiencies in coverage with review articles mainly used with few primary articles; less than half the essay relevant to the title	Some deficiencies in understanding; no critical involvement with the material and no originality/ novelty of thought	Some major points omitted, a few major errors and some minor errors which affect conclusions
39-30	Major deficiencies in clarity of presentation and organisation; multiple grammatical and typographical errors	Major deficiencies in coverage with review articles mainly used with few primary articles; less than a third of the essay relevant to the title	Major deficiencies in understanding; no critical involvement with the material and no originality/ novelty of thought	Most major points omitted; a few major errors and some minor errors which affect conclusions
29-20	An unclear and disorganised essay; inadequate length; multiple grammatical and typographical errors	Limited coverage, with very few primary articles used; limited relevance to the title	Limited evidence of understanding; no critical involvement with the material and no originality/ novelty of thought	All major points omitted; a few major errors and multiple minor errors which affect conclusions
19-10	A poorly written, disorganised essay; inadequate length; multiple grammatical and typographical errors	Contains only small amounts of relevant material using inadequate bibliography; very limited relevance to the title	Very limited evidence of understanding; no critical involvement with the material and no originality/ novelty of thought	All major points omitted; several major errors and multiple minor errors which affect conclusions
9-0	A very poorly written, disorganised essay; inadequate length; standard of English makes essay very difficult to understand	Contains no relevant material using inadequate bibliography; essay content not relevant to the title	No evidence of understanding; no critical involvement with the material and no originality/ novelty of thought	All major points omitted; multiple major errors which affect conclusions

A numerical score is awarded for each of the four domains; these are then averaged to give the final overall score.

50% is the pass mark for the Extended Essay.

Assessment 3: Written Examination

1. Assessment Requirements:

Each candidate must pass a three-hour online open-book examination (plus one hour of technical time) at the end of Hilary Term (normally in Week 9). The examination shall be on the modules set out in the Schedule. In order to proceed with the course, candidates who fail the examination shall be permitted to re-take it on one further occasion only in Week 0 of Trinity Term. The examination will account for 25 per cent of the final marks.

2. Assessment Explanation / Description

The Written Examination is in Week 9 of Hilary Term. It will last for three hours with an additional one hour of technical time. The format is written essays. The rubric states:

“Answer THREE questions, not more than TWO per section

Please start the answer to each question on a separate sheet.”

3. Marking Scheme (numerical) and Marking Criteria (qualitative)

100-90	An absolutely outstanding essay, showing comprehensive coverage, integration of material from a variety of sources and a sound critical assessment of this material. Demonstrates reading outside the lecture course and originality/novelty of thought.
89-80	A very good essay indeed. Shows wide coverage, integration of material from a variety of sources (including non-lecture material) and critical assessment of this material.
79-70	A very good essay, showing breadth of coverage (including some examples from outside the lecture course), well integrated material and some attempt at critical assessment.
69-60	A good essay, showing breadth of coverage (including some examples from outside the lecture course) and well integrated material, but little evidence of critical involvement with the material.
59-50	A satisfactory essay, basically well supported by materials from the lectures, but somewhat defective in organisation or breadth of coverage
49-40	An unsatisfactory essay, which includes the major points from the lectures, but little else.
39-30	A weak essay that omits several major points.
29-20	A very poor essay that omits considerable areas of the subject specified in the title.
19-10	An inadequate essay that contains only small amounts of relevant material.
9-0	An essay that contains no relevant material.

50% is the pass mark for the Written Examination.

Candidates will receive zero marks for any part or parts of questions which they have not answered, but which they should have answered.

Assessment 4: Dissertation

Deadline for Dissertation is midday Tuesday 17th August 2021.

1. Assessment Requirements:

Each candidate shall undertake an original laboratory research project of approximately six months. Candidates will be examined on their project in three ways:

- a. Each candidate will be required to submit to the examiners an electronic copy of their dissertation by uploading it to an authorised online submission platform (details of which will be notified to students by the Course Administrator) no later than midday Tuesday 17th August 2021. The dissertation should be no more than 10,000 words (excluding figures and figure legends, tables, bibliography and appendices) based on the research project.
- b. Each candidate will be expected to give a presentation to the examiners and assessors on his or her research project after submission of the dissertation.
- c. Each candidate will be examined *viva voce*.

The marks for the dissertation (written thesis and *viva voce*) will be combined to give a single dissertation mark, which will make up 60% of the final grade for the course. The written thesis will account for 75% of the overall mark for the dissertation and the *viva voce* the remaining 25%. Candidates must achieve a mark of 50% or higher on both the dissertation overall and the written thesis in order to pass.

Those who fail the written thesis (a mark of less than 50%) will be permitted to re-submit at the time these elements are examined in the following academic year, and they will be re-examined *viva voce* based on the re-submitted thesis.

When a student fails the overall dissertation (mark less than 50%) but passes the written thesis (50% or higher), the student would be permitted to re-take the *viva voce* at the time these elements are examined the following academic year.

2. Assessment Explanation / Description

Each candidate for the MSc in Radiation Biology is required to upload an electronic copy of their dissertation to an authorised online submission platform (details of which will be notified to students by the Course Administrator).

Each dissertation should be not more than 10,000 words in length, exclusive of figures and figure legends, tables, bibliography and any necessary appendices, and should include a word count on the title page. Dissertations which exceed this length may be marked down as a consequence (as detailed below). In principle, the dissertation should be prepared as a research thesis. There should be separate, headed sections for the abstract, introduction, methods, results, discussion and bibliography.

If there is some reason for wishing to use a different format, permission should be sought from the MSc Directors' Committee, giving reasons, at least three weeks before the deadline, to give time for the request to be considered and leave time for you to complete the write-up. The request should be supported by the project supervisor.

3. Marking Scheme (numerical) and Marking Criteria (qualitative)

Above 70 (Distinction) A project graded above 70 is of Distinction standard and should be a study that has been carefully conducted and analysed. It is not expected that the idea for the project should have been devised by the candidate, but there should be signs of originality, either in developing the project, or in analysing or interpreting it. The dissertation should be clearly presented and show a depth of understanding of the field. The introduction should present clearly the rationale for the scientific study and the discussion should provide a reasoned, integrative account of the scientific results.

60-69 A project of this standard should also have been carefully conducted and analysed. However, there is less of a requirement for originality. The introduction and discussion should show a good understanding of the field and contain some evaluation of the experimental material, even if that evaluation is not original. There should be no major error in the conduct or analysis of the experimental data.

50-59 A project of this standard should show good evidence of careful attempts to conduct and analyse the material. The write up may be inadequate in one of the following areas: an inadequate presentation of the purpose of the study, an inadequate description of the methods, inadequately labelled traces or diagrams, an inappropriate analysis, errors in the analysis, or a discussion that fails to interpret the results correctly. These problems will be taken as evidence of weakness in basic scientific skills, but they should not be so serious that they call into question the major conclusions from the experiment.

Below 50 A project of below 50 will be of a relatively poor standard and may be inadequate in one or two of the following areas: an inadequate presentation of the purpose of the study, an inadequate description of the methods, inadequately labelled traces or diagrams, an inappropriate analysis, errors in the analysis, or a discussion that fails to interpret the results correctly. These problems are likely to be serious enough that they affect one of the major conclusions from the experiment. There will be evidence of carelessness in conducting and analysing the project. Work of this grade is not necessarily a failure, but is one which indicates that the Examiners will focus on these deficiencies during the *viva voce* exam. If a mark below 50 is not redeemed during the *viva voce* examination it will be marked as a fail and require re-writing and re-examination.

Unsuccessful Projects

No original research can have a guaranteed outcome. The Examiners are aware that the time available is limited, and so any lack of 'success' in achieving the original aims of the project will not in itself be penalised. In particular, no candidate should be blamed for unforeseen difficulties or for a supervisor's over-ambitious plans.

If experiments are limited or disappointing in what they achieve, it is important that they should be written up accurately without claiming more than is justified. Regardless of 'success' or 'failure' with the work, candidates should comment on the reasons for the difficulties encountered, and make sensible suggestions for appropriate further work.

Supervisors will be asked to report to the examiners on any particular difficulties associated with the project.

3. Marking Conventions

3.1 University scale for standardised expression of agreed final marks.

For students starting PGT courses from Michaelmas term 2020, agreed final marks for individual papers will be expressed using the following scale:

70 - 100	Distinction
65 - 69	Merit
50 - 64	Pass
0 - 49	Fail

3.2 Qualitative criteria for different types of assessment.

Refer to Section 2 for details of qualitative criteria.

3.3 Verification and reconciliation of marks

All assessments, except for the qualifying exam which is marked by computer, are marked independently by two markers. The independent marks of the two markers are then compared. Where the two marks are within 10% of each other and do not cross a grade boundary, the two marks will be averaged to produce a final mark for that assessment unit. Where the two marks differ by more than 10%, or in any case where the two marks cross a grade boundary, the two markers will confer to agree a final mark for the assessment unit. If the two markers cannot agree, the Chair of Examiners will make a final decision having taken specialist advice from a third examiner, if necessary.

3.4 Scaling of marks

The Education Committee considers that it is appropriate to scale marks for a paper where it has been established that a paper was more difficult or easy than in previous years.

Scaling may also be used to mitigate against the changes to assessment required in response to the COVID-19 pandemic and any related difficulties faced by candidates.

Examiners need to establish if they have sufficient evidence for scaling. A significantly higher or lower median or mean mark for a paper relative to previous years would not itself constitute sufficient evidence for this. Further evidence should also be identified, for example, via:

- examiners' academic evaluation of the performance of the candidates (possibly guided by qualitative descriptors of each level of achievement);
- a comparison with the questions set in previous years' papers; and/or
- an analysis of the spread of candidates' performance in compulsory papers compared to their performance in the paper in question.

Scaling should not be used mechanistically to fit the spread of results on a paper to historical norms.

(i) Scaling should only be considered and undertaken after moderation of a paper has been completed.

(ii) If it is decided that it is appropriate to use scaling, examiners should review a sample of papers either side of the degree category borderlines to ensure that the outcome of scaling is consistent with academic views of what constitutes a paper in each degree category.

(iii) All scaling of marks must be done in the year in which the paper(s) in question is/are taken.

(iv) Detailed information about why scaling was necessary and how it was applied should be included in the Examiners' Report.

(v) All examiners and boards should seek expert advice on the construction and operation of algorithms, where appropriate.

(vi) All algorithms used for the purposes of scaling must be transparent and justifiable, and must be published as appropriate for the information of all examiners and students.

Examiners should also satisfy themselves that, if a computer algorithm is used in the classification process, its rules are fully consistent with the current conventions, especially if changes are being made to the conventions.

Such scaling is used to ensure that candidates' marks are not advantaged or disadvantaged by the above situation.

3.5 Short-weight conventions and departure from rubric

Where a candidate submits an assessment that is significantly under the specified word count, then the work will still be assessed based on its academic merit.

Candidates will receive zero marks for any part or parts of questions which they have not answered, but which they should have answered.

Refer to section 2 for more details.

3.6 Penalties for late or non-submission of coursework

This section details penalties for the late or non-submission of coursework items. For information on penalties for late submission of open-book examination scripts, see section 3.10 below.

As stated in the Examination Regulations, Section 1: Regulations for the Conduct of University Examinations, Part 14, Late Submission, Non-submission, Non-appearance and Withdrawal from Examinations, if a candidate 'fails to submit a thesis (or other exercise), the candidate will be deemed to have failed the paper as defined in 14.3(1) unless a successful submission under Part 14 has been made'.

The scale of penalties agreed by the Medical Sciences Division in relation to late submission of assessed items is set out below. Details of the circumstances in which such penalties might apply can be found in the Examination Regulations (Regulations for the Conduct of University Examinations, Part 14.)

1. If a candidate submits late, but on the prescribed date of submission, the examiners shall mark the submitted work and impose the following academic penalty:

5 points (marks) will be deducted from the candidate's final agreed mark for the assessment, on the University's 100-point marking scale.

The Proctors will also charge candidates a late submission fee (but this may be waived by them if it appears reasonable to do so).

2. If a candidate submits after the prescribed date of submission and without prior authorisation, the Proctors may give the examiners permission to apply the following academic penalties.

Such penalties will be applied regardless of whether or not the piece of work is submitted over a weekend, public holiday, or fixed closure day etc. after the deadline:

≤ 24 hours late: 5 points (marks) will be deducted from the candidate's final agreed mark for the assessment, on the University's 100-point marking scale;

> 24 hours and ≤ 48 hours late: 10 points (marks) will be deducted from the candidate's final agreed mark for the assessment, on the University's 100-point marking scale;

> 48 hours and ≤ 72 hours late: 20 points (marks) will be deducted from the candidate's final agreed mark for the assessment, on the University's 100-point marking scale;

> 72 hours late: the submission will automatically be deemed a non-submission and will result in failure of the assessment unit with any re-sit capped at the pass mark.

Candidates are advised to contact their course director for advice as soon as possible, in particular if there may be a valid reason for late submission⁴.

The Proctors will also charge candidates a late submission fee (but this may be waived by them if it appears reasonable to do so).

3. When late submission (≤ 72 hours late) results in failure of an assessment unit following the application of an academic penalty, this will be treated as a fail as a result of poor academic performance, with re-sit arrangements as set out in Section 5 of the *Examination Conventions*.

4. The highest degree outcome that can be awarded to a candidate re-taking an assessment under the circumstances described under 3 above is a pass. (i.e. if a candidate fails an assessment unit due to late or non-submission of work, they will not be eligible for a distinction/merit in their overall degree (regardless of the weighting of the failed unit).

⁴ A valid reason for late submission could include mitigating circumstances, such as an acute illness or a bereavement.

3.7 Penalties for over-length work and departure from approved titles or subject matter

<https://examregs.admin.ox.ac.uk/>

Where a candidate submits a dissertation (or other piece of written coursework) which exceeds the word limit prescribed by the relevant regulation, the examiners, if they agree to proceed with the examination of the work, may reduce the mark.

The Medical Sciences Board has agreed the following tariff of marks to be deducted for over-length work:

≤ 5% over word limit	5 marks will be deducted from the candidate's final agreed mark for the assessment, on the University's 100-point marking scale.
>5% and ≤ 10% over word limit	10 marks will be deducted from the candidate's final agreed mark for the assessment, on the University's 100-point marking scale.
>10% and ≤ 20% over word limit	20 marks will be deducted from the candidate's final agreed mark for the assessment, on the University's 100-point marking scale.
> 20% over word limit	the candidate will be awarded zero marks (a fail) for the assessment concerned.

Where a penalty for over-length work results in failure of an assessment item, this will be treated as an academic fail of the assessment item. The policy on resits is set out in Section 5 of the Examination Conventions.

Please refer to section 2 for details of word count for individual assessments.

3.8 Penalties for poor academic practice (Plagiarism)

3.8.1 Penalties for poor academic practice in coursework

The University regards plagiarism in examinations as a serious matter. The University's approach to the prevention and management of plagiarism is set out in the [Plagiarism Strategy](#).

Student specific information about plagiarism is available on the [Oxford Student Web-site](#).

Details of procedure for dealing with cases of poor academic practice and plagiarism in taught degree examinations are available in the [Policy and Guidance for examiners and others involved in University examinations](#)

While it is not permissible to submit work which has been submitted, either partially or in full, either for this qualification or for another qualification of this University or at any other institution, it is permissible to use *formative* work that has been written during the course of a candidate's studies (e.g. formative essays).

The Examination Board shall deal wholly with cases of poor academic practice where the material under review is small and does not exceed 10% of the whole.

Assessors should mark work on its academic merit with the board responsible for deducting marks for derivative or poor referencing.

Determined by the extent of poor academic practice, the board shall deduct between 1% and 10% of the marks available for cases of poor referencing where material is widely available factual information or a technical description that could not be paraphrased easily; where passage(s) draw on a variety of sources, either verbatim or derivative, in patchwork fashion (and examiners consider that this represents poor academic practice rather than an attempt to deceive); where some attempt has been made to provide references, however incomplete (e.g. footnotes but no quotation marks, Harvard-style references at the end of a paragraph, inclusion in bibliography); or where passage(s) are 'grey literature' i.e. a web source with no clear owner.

If a student has previously had marks deducted for poor academic practice or has been referred to the Proctors for suspected plagiarism the case must always be referred to the Proctors

In addition, any more serious cases of poor academic practice than described above should also always be referred to the Proctors.

3.8.2 Poor academic practice in open-book examinations

Students should familiarise themselves with the University's Honour Code for open-book exams: <https://www.ox.ac.uk/students/academic/exams/open-book/honour-code?wssl=1>

Section 2.1 b) of the Honour Code states that candidates are expected to "indicate clearly the presence of all material they have quoted from other sources, including any diagrams, charts, tables or graphs. Students are not expected to reference, however if you provide a direct quote, or copy a diagram or chart, you are expected to make some mention of the source material as you would in a typical invigilated exam."

While it is not permissible to submit work which has been submitted, either partially or in full, either for this qualification or for another qualification of this University or at any other institution, it is permissible to use *formative* work that has been written during the course of a candidate's studies (e.g. formative essays).

3.9 Penalties for non-attendance

Failure to attend an examination will result in the failure of the assessment. The mark for any re-sit of the assessment will be capped at a pass.

3.10 Penalties for late submission of open-book examination scripts

Candidates should upload their submission within the time allowed for their open book examination. Candidates who access the paper later than the published start time (and who do not have an agreed alternative start time) will still need to finish and submit their work within the originally published timeframe or be considered to have submitted late. Candidates who access the paper on time but who submit their work after the published timeframe will also be considered to have submitted late.

Where candidates submit their examination after the end of the specified timeframe and believe they have a good reason for doing so, they may submit a self assessment mitigating circumstances form to explain their reasons for the late submission. The Exam Board will consider whether to waive the penalties (outlined below) for late submission.

The penalties will be applied at the paper level and are as follows:

Time	Penalty
First 5 minutes	No penalty
6 minutes - 20 minutes	5 marks or 5% of the marks available (if not marked on 100 mark scale)
21 minutes - 40 minutes	10 marks or 10% of the marks available (if not marked on 100 mark scale)
Up to an hour	15 marks or 15% of the marks available (if not marked on 100 mark scale)
After one hour	Fail mark (0)

Penalties will only be applied after the work has been marked and the Exam Board has checked whether there are any valid reasons for late submission.

4. Progression rules and classification conventions

4.1 Quality descriptors of Distinction, Merit, Pass, Fail

Final outcome rules:

For students starting PGT courses from Michaelmas term 2020, agreed final marks for individual papers will be expressed using the following scale:

Agreed final mark	Degree outcome	Degree descriptor
70-100	Distinction	Across all three summatively assessed components the candidate has shown clear signs of critical analysis, originality and an excellent understanding of the field of radiation biology. Work will have been presented clearly in a scholarly fashion, with clear evidence of carefully evaluating data/information and no major errors. The work will also include a significant component of material beyond the scope of the lecture course.
65-69	Merit	The candidate has demonstrated a good understanding of the field of radiation biology. Work will have been presented clearly, in a scholarly fashion with some evidence of careful evaluation of data/information and with no major errors. The work will also include some examples of material beyond the scope of the lecture course.
50-64	Pass	The candidate has demonstrated a reasonable understanding of the field of radiation biology. Although the work should give good evidence of careful attempts to analyse data/information of conduct the project, the presented work may be inadequate in one of the following areas: presentation, content, inappropriate/ errors in analysis or incorrect interpretation.
0-49	Fail	The candidate demonstrates a limited understanding of the field of radiation biology. The submitted work will be inadequate in one or two of the following areas: inadequate/carelessness in the presentation, analysis of interpretation of data/information or conduct of the project. The work will also have significant deficiencies in content and/or contain major errors.

Details of the marking scheme for each of the three summatively assessed components used to generate the final mark and associated classification is detailed above in section 2.

4.2 Classification rules

The Board of Examiners agrees and ratifies the final agreed marks. The Board will consider all borderline cases as detailed below.

- Candidates who receive an overall mark of 70-100 will have successfully passed the degree examination and will be awarded an MSc in Radiation Biology with Distinction.
- Candidates who receive an overall mark of 65-69 will have successfully passed the degree examination and will be awarded an MSc in Radiation Biology with Merit.
- Candidates who receive an overall mark of 50-64 will have successfully passed the degree examination and will be awarded an MSc in Radiation Biology.
- Candidates who receive an overall mark of 0-49 will have failed the degree examination.

Examination & Assessment Outcomes

The table below shows how marks for each examination/assessment in this MSc course contribute to the final degree outcome.

Weighting (% contribution to Degree Outcome / Final Award)

There are three summatively assessed components that candidates must pass for the award of this MSc. These components are weighted as follows:

<i>Assessment</i>	<i>Weighting (% contribution to Degree Outcome / Final Award)</i>
Qualifying Examination	Compulsory Pass
Extended Essay	15%
Written Exam	25%
Dissertation	60%

Candidates must achieve a pass in all components in order to pass the examination overall.

Candidates who have initially failed any element of the examination will not be eligible for the award of a Distinction or Merit.

Moderation

All summatively assessed work is double-blind marked i.e. it is marked independently by two examiners or assessors (or an examiner and an assessor) who do not consult or see each other's marks/comments, except for computer-based examinations, which are marked electronically.

Borderline Marks

For the overall degree, a candidate whose overall mark lies within ≤ 2.5 marks of a particular boundary will be considered as 'borderline'. In such cases, the Board of Examiners will take the following factors into account in deciding the candidates' agreed final mark for the degree:

(i) the overall mean mark, (ii) the overall median mark, (iii) the distribution of assessment marks, (iv) the candidate's performance in practical/laboratory or other (non-examined) course work (iv) special circumstances notified by the Proctors.

4.3 Progression rules

Candidates must pass each element of the assessment in order to progress. Please refer to section 2 for more detail.

4.4 Use of vivas

Each candidate will be examined by *viva voce*.

5. Resits

Should it be necessary for a student to resit an assessment, it is possible to do so as detailed in Section 2: Rubrics for individual papers.

Where a candidate has failed an assessment unit as a result of poor academic performance the mark for the resit of the assessment unit will be awarded on the merits of the work.

Where a candidate has failed an assessment unit as a result of non-submitting an assessment item or as a result of non-attendance at a timed examination the mark for the resit of the assessment unit will be capped at the pass mark.

In this context, an 'assessment unit' can refer to a single timed examination, a submission, other exercise, or a combination of assessment items. Where the assessment unit consists of more than one assessment item, for example a submission and a timed examination, if the candidate passes the submission but fails the timed examination, they are only required to resit the failed assessment item (in this example the timed examination) not all the assessment items for the assessment unit.

6. Consideration of mitigating circumstances

A candidate's final outcome will first be considered using the classification rules/final outcome rules as described above in section 4. The exam board will then consider any further information they have on individual circumstances.

Where a candidate or candidates have made a submission, under Part 13 of the Regulations for Conduct of University Examinations, that unforeseen circumstances may have had an impact on their performance in an examination, a subset of the board (the 'Mitigating Circumstances Panel') will meet to discuss the individual applications and band the seriousness of each application on a scale of 1-3 with 1 indicating minor impact, 2 indicating moderate impact, and 3 indicating very serious impact. The Panel will evaluate, on the basis of the information provided to it, the relevance of the circumstances to examinations and assessment, and the strength of the evidence provided in support. Examiners will also note whether all or a subset of papers were affected, being aware that it is possible for circumstances to have different levels of impact on different papers. The banding information will be used at the final board of examiners meeting to decide whether and how to adjust a candidate's results. Further information on the procedure is provided in the *Policy and Guidance for examiners*, Annex C and information for students is provided at www.ox.ac.uk/students/academic/exams/guidance.

Candidates who have indicated they wish to be considered for a Declared to have Deserved Masters (DDM) degree will first be considered for a classified degree, taking into account any individual mitigating circumstances as notified to the examiners. If that is not possible and they meet the DDM eligibility criteria, they will be awarded DDM.

7. Declaration of Authorship

Candidates must ensure that a completed and signed *Declaration of Authorship* form is included with each piece of coursework which is not submitted electronically for examination.

8. Use of 'Turnitin'

The University reserves the right to use software applications to screen any individual's submitted work for matches either to published sources or to other submitted work.

9. Results

Candidates should refer to:

<http://www.ox.ac.uk/students/academic/exams/results> Students can access their results information using Student Self Help, accessed via: <http://www.ox.ac.uk/students>. Once results have been released by the Examination Board students will automatically be sent an e-mail informing them that their results are available from their Student Self Service account. Students will be able to view their results via eVision.

10. Appeals

Any query or complaint about the content, conduct, or outcome of an examination, whether originating with candidates or their tutors, should be referred by a candidate's College to the Proctors.

11. Feedback to Candidates

Feedback is provided on the formatively assessed work and on the dissertation.

12. Board of Examiners for the academic year 2020-21

Dr Anderson Ryan, the Chair of the Board of Examiners, University of Oxford

Dr Geoff Higgins, Examiner, University of Oxford

Dr Kristoffer Petersson, Examiner, University of Oxford

Prof Stewart Martin, External Examiner, University of Nottingham

Candidates should not under any circumstances seek to make contact with individual internal or external examiners.

Appendix:

Medical Sciences Division-specific note:

Operational information for Exam Boards relating to Section 3.6: Penalties for late or non-submission

1. An academic penalty should only be applied: (a) **after** a candidate's mark for the assessment has been agreed by the Examination Board, based on their academic performance; and (b) **after** marks have been converted to the University's 100-point marking scale (if such conversion is necessary for the assessment concerned).
2. If permitted by the *Examination Regulations* for the course, a candidate may be permitted to re-take an assessment during the same academic year, which they have failed due to the application of an academic penalty for late submission; otherwise, the candidate will not be permitted to re-take this assessment until the next academic year.

MSc BY COURSEWORK IN RADIATION BIOLOGY

DECLARATION OF AUTHORSHIP

Name (in capitals):

Candidate number:

College (in capitals):

Title of [extended essay/project] (in capitals):

Word count: _____

Please tick to confirm the following:

I am aware of the University's disciplinary regulations concerning conduct in examinations and, in particular, of the regulations on plagiarism. _____

The [extended essay/project] I am submitting is entirely my own work except where otherwise indicated. _____

It has not been submitted, either wholly or substantially, for another Honour School or degree of this University, or for a degree at any other institution. _____

I have clearly signalled the presence of quoted or paraphrased material and referenced all sources. _____

I have acknowledged appropriately any assistance I have received in addition to that provided by my supervisor. _____

I have not sought assistance from any professional agency. _____

I agree to retain an electronic version of the work and to make it available on request from the Chair of Examiners should this be required in order to confirm my word count or to check for plagiarism.

Candidate's signature: Date:



**Medical
Research
Council**

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Radiation Oncology

