



SCHOOL OF ENGINEERING, PHYSICAL AND
MATHEMATICAL SCIENCES

DEPARTMENT OF MATHEMATICS

POSTGRADUATE TAUGHT STUDENT HANDBOOK

2020/2021

Department of Mathematics
School of Engineering, Physical and Mathematical Sciences
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Disclaimer

This document was published in September 2020 and was correct at that time. The department* reserves the right to modify any statement if necessary, make variations to the content or methods of delivery of modules of study, to discontinue modules, or merge or combine modules if such actions are reasonably considered to be necessary by the College. Every effort will be made to keep disruption to a minimum, and to give as much notice as possible.

* Please note, the term 'department' is used to refer to 'departments', 'Centres and Schools'. Students on joint or combined degree courses should check both departmental handbooks.

Contents

1	INTRODUCTION TO YOUR DEPARTMENT	5
1.1	WELCOME	5
1.2	HOW TO FIND US: THE DEPARTMENT	5
1.3	MAP OF THE EGHAM CAMPUS.....	5
1.4	HOW TO FIND US: THE STAFF	6
1.5	HOW TO FIND US: THE SCHOOL OFFICE.....	6
1.6	THE DEPARTMENT: PRACTICAL INFORMATION	7
1.7	STAFF RESEARCH INTERESTS	7
2	SUPPORT AND ADVICE.....	7
2.1	SUPPORT WITHIN YOUR SCHOOL	7
2.2	PGT DEGREE REGULATIONS.....	8
3	COMMUNICATION.....	8
3.1	EMAIL	8
3.2	POST	8
3.3	YOUR CONTACT INFORMATION	8
3.4	PERSONAL TUTORS.....	9
3.5	QUESTIONNAIRES	9
4	TEACHING	9
4.1	DATES OF TERMS	9
4.2	STUDY WEEKS	9
5	DEGREE STRUCTURE.....	9
5.1	DEPARTMENT SPECIFIC INFORMATION ABOUT DEGREE STRUCTURE	9
5.2	MODULE REGISTRATIONS.....	10
5.2.1	List of Modules	10
5.2.2	Module Choices	12
5.3	CHANGE OF PROGRAMME	12
5.4	ADJUSTMENTS TO ATTENDANCE.....	13
6	FACILITIES.....	13
6.1	THE LIBRARY	13
6.2	PHOTOCOPYING AND PRINTING	13
6.3	COMPUTING.....	13
6.4	MOODLE	14
6.5	CALCULATORS IN EXAMINATIONS	14
7	ASSESSMENT INFORMATION	14
7.1	ANONYMOUS MARKING AND COVER SHEETS	14
7.2	SUBMISSION OF WORK	14
7.3	PENALTIES FOR OVER-LENGTH WORK	14
7.4	WHAT TO DO IF THINGS GO WRONG – EXTENSIONS TO DEADLINES	15
7.5	SUPPORT AND EXAM ACCESS ARRANGEMENTS FOR STUDENTS REQUIRING SUPPORT.....	15
7.6	ACADEMIC MISCONDUCT – PLAGIARISM.....	15
7.7	PROGRESSION AND AWARD REQUIREMENTS	15
7.8	EXAMINATION RESULTS.....	16
8	COURSEWORK ESSAYS AND DISSERTATION.....	17
8.1	COURSEWORK	17
8.2	THE DISSERTATION.....	17
8.3	CHOICE OF DISSERTATION TOPIC.....	17
8.4	THE DISSERTATION SUPERVISOR	17
8.5	PROPOSAL.....	18
8.6	CONTENT OF DISSERTATION	18
8.7	PRESENTATION.....	18
8.8	FOOTNOTES.....	19

8.9	BIBLIOGRAPHY	19
8.10	REFERENCING STYLE, ILLUSTRATIONS AND APPENDICES.....	19
8.11	WORD COUNT.....	19
8.12	MARKING CRITERIA.....	19
9	HEALTH AND SAFETY INFORMATION.....	21
9.1	CODE OF PRACTICE ON HARASSMENT FOR STUDENTS	21
9.2	LONE WORKING POLICY AND PROCEDURES	21
10	PRIZES	21
10.1	THE MSC ACHIEVEMENT MEDAL	21
10.2	THE MSC DISSERTATION MEDAL.....	21
11	CODES OF PRACTICE	22

1 Introduction to your department

1.1 Welcome

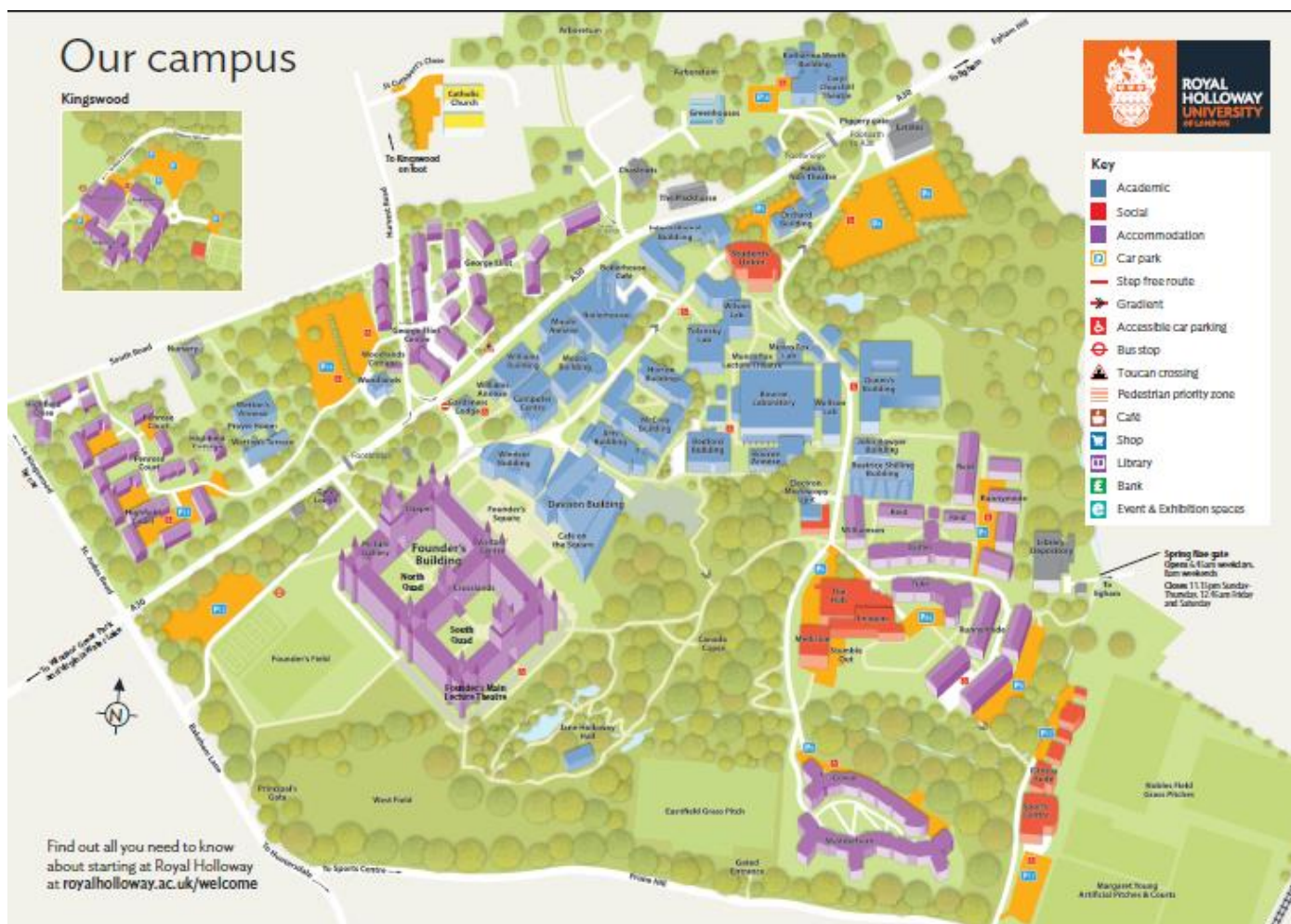
Welcome to Royal Holloway. Royal Holloway, University of London (hereafter 'the College') is one of the UK's leading research-intensive universities, with six academic schools spanning the arts and humanities, social sciences and sciences.

1.2 How to find us: the Department

The Academic Staff for the Department of Mathematics are located in the McCrea Building on the lower ground floor.

The Academic Staff of the Information Security Group are located in the Bedford Building.

1.3 Map of the Egham campus



Please note, student parking is very limited and is not available if you live in Halls or within 1.5 miles of campus. If you do live more than 1.5 miles away or have a particular reason why you need to come to campus by car, you must apply for a parking permit. If you have a motorbike or scooter you must also register the vehicle with College. Find more information about the Parking Permit portal [here](#).

1.4 How to find us: the staff

Most Academic staff have their offices in the McCrea Building and some in the Bedford Building. You should only visit them during their office hours; these are posted on the door of their office and on the Department's website. If you cannot visit during office hours, please email the staff member asking for an appointment and saying when you are free. There is a staff list with office information on the Department's website.

If you have problems, the following list shows whom to contact:

Modules – the lecturer

Module selection – your personal adviser

Your degree programme – your personal adviser and the MSc Programme director

A personal problem – your personal adviser, or the Welfare Services (Counsellors, Health Centre, Chaplaincy, Student Union)

A problem common to other students – the lecturer, your Student-Staff Committee representative

College registration, enrolment, fees, accommodation, loans etc. – the Student Administration Centre

CONTACT DETAILS

Head of School:	Name: Professor Stewart Boogert Email: Stewart.Boogert@rhul.ac.uk	Telephone: 01784 414062 Room: Bedford 1-27
Head of Department:	Name: Professor Ruediger Schack Email: R.Schack@rhul.ac.uk	Telephone: 01784 443097 Room: McCrea 0-10
MSc Programme Director:	Name: Dr Yiftach Barnea Email: y.barnea@rhul.ac.uk	Telephone: 01784 414689 Room: McCrea 0-24
School Manager:	Name: Vanessa Law Email: Vanessa.Law@rhul.ac.uk	Telephone: 01784 443598 Room: Bedford 1-28
Senior Student & Programme Manager	Name: Jo Hible Email: Jo.Hible@rhul.ac.uk	Telephone: 01784 443230 Room: Bedford 1-29
School Helpdesk:	Name: Carole Pearce Email: EPMS-School@rhul.ac.uk	Telephone: 01784 276881 Room: Bedford 1-29
Disability & Dyslexia/ Support Services	Email: EPMS-School@rhul.ac.uk	Name: Telephone 01784 276881 Room: Bedford: 1-29
IT Support	Name: CIM Support Email: cimhelpdesk@rhul.ac.uk	Telephone: 01784 443443 Room: Bedford 0-02

1.5 How to find us: the School office

The Administration Office is located in room 1-29, Bedford Building. During term time the office will be open 09:00 to 17:00 and during vacation time is open 10:00 to 16:00.

1.6 The Department: practical information

SAFETY. Please make yourself aware of the procedure for fire evacuation for any building you may be working in. From McCrea Building, Bedford Building and Horton Building the Fire Assembly point is on the pathway between McCrea and Horton at Fire Assembly Point 11.

SMOKING. Please note that smoking is not allowed in any of the building and this includes e-cigarettes.

1.7 Staff research interests

The research interests in the Department include information security, cryptography, coding theory, algebra, number theory, graph theory, the mathematics of atomic processes, quantum theory

[https://pure.royalholloway.ac.uk/portal/en/organisations/department-of-mathematics\(7ff3623d-1e5a-45d1-8ab1-6929b58c0f0b\).html](https://pure.royalholloway.ac.uk/portal/en/organisations/department-of-mathematics(7ff3623d-1e5a-45d1-8ab1-6929b58c0f0b).html)

2 Support and advice

2.1 Support within your School

The School Helpdesk is there to help you with any questions or concerns you might have about your studies. Opening hours are 9:00am to 5:00pm in term time and 10:00am to 4:00pm during vacation. The Helpdesk is staffed throughout these opening hours. You can ring 01784 276881 during office hours or email EPMS-School@rhul.ac.uk. Depending on your query, the Helpdesk will answer your questions, book you an appointment, put you in touch with a colleague who can help, or refer you to another professional team within the College. The Helpdesk is situated in room 1-29, in Bedford Building.

To book an appointment

Most queries can be managed via email, phone or MSTEams but should you need a face to face appointment the office team will book a 15 minute appointment with you. To arrange a face to face meeting email EPMS-School@rhul.ac.uk providing your student ID and a brief explanation of what you want to discuss during the appointment.

Inevitably, problems will sometimes arise that the Department is not qualified to deal with. The College offers a high level of student welfare support which includes a highly regarded Counselling Service, dedicated educational and disability support, as well as a wealth of student wellbeing, financial, career and other advice. There is also an NHS GP practice (the Health Centre) on campus located in Founder's East. Further details of each service can be found on the College web on the Student Welfare page.

If you have a disability or specific learning difficulty, it is important that you bring it to our attention as soon as possible. The Disability and Dyslexia Services Office (DDS) representative in the EPMS School is Carole Pearce. You must also contact the DDS (Founder's West 1st floor; Tel: +44 (0)1784 276473; email: disability-dyslexia@royalholloway.ac.uk) who will advise on appropriate sources of help.

Your points of contact for advice within the Department is the Maths Postgraduate Administrator, your personal advisor or the Programme Director. Inevitably, problems will sometimes arise that the Department is not qualified to deal with.

The College offers a high level of student welfare support, which includes a highly regarded Counselling Service, dedicated educational and disability support, as well as a wealth of student wellbeing, financial, career and other advice. There is also an NHS GP practice (the Health Centre) on campus located in Founder's East. Further details of each service can be found on the College web on the Student Welfare page.

2.2 PGT Degree Regulations

The **Postgraduate Taught Regulations** set out the various standards that shape the regulatory framework of your Postgraduate Taught degree with the College. These include a variety of essential information, ranging from admissions to academic progression and examination. Some frequently used elements of the regulations are covered in this handbook.

3 Communication

It is vitally important that you keep in touch with us and we keep in touch with you. Members of staff will often need to contact you to inform you of changes to teaching arrangements, special preparations you may have to make for a class, or meetings you might be required to attend. You will need to contact members of the Department if, for example, you are unable to attend a class, or you wish to arrange a meeting with your Personal Tutor.

3.1 Email

The College provides an email address for all students free of charge and stores the address in a College email directory (the Global Address List). Your account is easily accessed, both on and off campus, via the campus-wide portal, [CampusNet](#), or direct via [Outlook.com](#).

We will routinely email you at your College address and you should **therefore check your College email regularly** (at least daily). We will not email you at a private or commercial address. Do not ignore emails from us. We will assume you have received an email within 48 hours, excluding Saturdays and Sundays.

If you send an email to a member of staff in the department during term time you should normally receive a reply within 3-4 working days of its receipt. Please remember that there are times when members of staff are away from College at conferences or undertaking research.

3.2 Post

Students should not use the College address for private mail. Administrative staff will alert you via email to any internal mail received by the School/Department.

3.3 Your Contact Information

There can be occasions when the Department needs to contact you urgently by telephone or send you a letter by post. It is your responsibility to ensure that your telephone number (mobile and landline) and post address (term-time and forwarding) are kept up to date on Campus Connect. Further information about maintaining your contact information is available [here](#).

You can find out about how the College processes your personal data by reading the [Student Data Collection notice](#).

3.4 Personal Tutors

Each student has a Personal Adviser. The Personal Adviser may help with module choices and with finding a dissertation topic and supervisor. The Adviser provides a point of contact between students and the Mathematics Department.

3.5 Questionnaires

Towards the end of each teaching term there will be a questionnaire for each module. At the end of the programme we will ask the students to fill out a questionnaire to evaluate the entire programme.

4 Teaching

4.1 Dates of terms

Term dates for the year 2020-21 are as follows.

Autumn term: Monday 21 September to Friday 11 December 2020

Spring term: Monday 11 January to Friday 26 March 2021

Summer term: Monday 26 April to Friday 11 June 2021

4.2 Study weeks

During study week there are no schedule activities, but revision activities will be set and lecturers will be available for questions. If you are a joint student, please check the other department's policy on study weeks.

5 Degree structure

Full details about your course, including, amongst others, the aims, learning outcomes to be achieved on completion, modules which make up the course and any course-specific regulations are set out in the course specification available through the [Course Specification Repository](#).

5.1 Department specific information about degree structure

The full time MSc lasts for 50 weeks, from late September until beginning of September of the following year. The full time PgDip lasts from late September until early June of the following year.

The MSc is examined in through continuous assessment during terms 1 and 2, by written examination in term 3. The PgDip has the same course structure.

Students initially choose 8 modules of which they specify 6 modules (20 credits each) during the second term that will count towards the examination. The two unspecified modules are 'Supplementary'. Supplementary modules appear on students' transcripts but do not contribute to the final degree classification.

The 6 specified modules carry 20 credits each. The main project carries 60 credits, so that each MSc student will be registered for $6 \times 20 + 60 = 180$ credits and PgDip students will be registered for $6 \times 20 = 120$ credits.

Students write at least the 6 examination papers of their specified modules but may choose to write examination papers in their supplementary modules in addition. The marks for the supplementary modules will appear on their transcript but do not count towards the degree classification.

A standard part time MSc programme lasts for 102 weeks, from September to September two years later. Part-time Masters Students are typically expected to take four module units in their first year (typically the core modules would be taken in the first year) and complete the remaining modules and the dissertation in the second year. Part-time students following the standard two-year part time model will be encouraged to begin work on their dissertation during the summer between their first and second years. Part time students are permitted under College regulations to complete their programme of study over a period of up to 5 years. Students who are unable to complete the programme within the standard 2 year timeframe should liaise with the programme director to agree a time frame for completion.

The Examinations office will probably ask you to specify the examination papers that you intend to write very early. The reason is the involved exam timetable. In the past, the department was able to negotiate a later deadline, watch out for information (by email) from the programme director. Full details about your programme of study, including, amongst others, the aims, learning outcomes to be achieved on completion, modules which make up the programme and any programme-specific regulations are set out in the programme specification available through [Programme Specification Repository](#).

5.2 Module Registrations

You have the option of changing module unit registrations within the first two weeks after the start of teaching (excluding Welcome Week) subject to agreement from the department. Any modules that you wish to take on an extracurricular basis (that is, as extra and not counting towards your degree) must be identified at the start of the academic year or before any assessment has been completed for the module.

5.2.1 List of Modules

Core Modules on the MSc Mathematics for Applications

Code	Title	Term	Lecturer
MT5400	Main Project	Summer	

Core Modules on the MSc Mathematics of Cryptography and Communications

Code	Title	Term	Lecturer
MT5400	Main Project	Summer	
MT5461	Theory of Error Correcting Codes	1	Dr Ng
MT5462	Cryptography I	1	Professor Wildon
MT5441	Classical Information Theory	2	Professor Audenaert
MT5466	Cryptography II	2	Professor Murphy

Other Modules

Code	Title	Term	Lecturer
MT5434	Time Series Analysis	1	Dr Koloydenko
MT5436	Markov Chains and applications	1	Professor Murphy
MT5450	Applications of Scientific Programming	1	Dr Kay
MT5454	Combinatorics	1	Professor Dietmann
MT5557	Financial Mathematics I	1	Dr Shcherbakov
MT5461	Theory of Error Correcting Codes	1	Dr Ng
MT5462	Cryptography I	1	Professor Wildon
MT5485	Field Theory	1	Dr Widmer
MT5414	Principles of Algorithm Design	2	Professor Gerke
MT5432	Statistical Inference	2	Dr Sharia
MT5441	Classical Information Theory	2	Professor Audenaert
MT5445	Quantum Information Theory	2	Dr Kay
MT5448	Financial Mathematics II	2	Dr Shcherbakov
MT5466	Cryptography II	2	Professor Murphy
MT5491	Topology	2	Professor Nucinkis

Note that some modules consist of 3 lectures a week, and others consist of 4 lectures a week.

Modules with 4 lectures a week:

MT5461, MT5462, MT5432, MT5436. Ask the lecturer for details.

This booklet gives descriptions of all postgraduate (MT5xxx) modules. Note that many of these modules are related to the corresponding third year and fourth year (MSci) modules and the corresponding module numbers are different but related: for example MT5485 (MSc) is related to MT4850 (MSci) and MT3850 (BSc).

The following final year undergraduate, and MSc modules may be relevant. The syllabi are on the web sites:

<https://intranet.royalholloway.ac.uk/mathematics/informationforcurrentstudents/ug.aspx> and
<https://intranet.royalholloway.ac.uk/isg/informationfornewreturningstudents/mscsyllabus.aspx>

Code	Title	Term
MT3260	Quantum Theory 1	1
MT3860	Group Theory	1
MT3110	Number Theory	2
MT3280	Non-Linear Dynamical Systems	2
IY5511	Network Security	1
IY5512	Computer Security	1
IY5605	Cyber Crime	2
IY5607	Software Security	2

5.2.2 Module Choices

Each student should attend lectures on 8 taught modules. MSc students write a dissertation in addition.

For the Cryptography and Communications programme, the eight taught modules should include the core modules listed above. At the discretion of the Programme Director, the requirement to take a core module may be dropped if a student has already taken an equivalent module at a comparable level as part of their previous studies (in which case the student will take an extra optional module).

Students on the MSc Mathematics for Applications may choose from the whole range of MT5xxx modules.

A student may also, in agreement with the Programme Director, choose modules from the third year options of the undergraduate degree programme in Mathematics (MT3xxx range), and from the list of MSc modules in Information Security (IY5xxx range). Normally, permission will only be given if the material has not been covered as part of their previous studies. Note that these modules can only be taken as 'supplementary', and the marks obtained in such modules cannot be included in the calculation of the degree classification.

All MSc students (but not PgDip students) will do a main project, which is a major piece of independent study. This project work will be undertaken under the supervision of a member of staff. The assessment will be on the basis of a written dissertation; the examiners may also at their discretion require an oral examination. Please refer to Section 8.2 for more information on the dissertation. The dissertation must be submitted electronically as pdf via the Moodle page for MT5400 by the first Thursday of September of the calendar year of completion of the written part of the examination by 2pm (14:00).

The final assessment is based on the modules and dissertation listed above.

- 66.7% of the assessment is taken to be the average mark of the six weighted taught modules. The six weighted taught modules over which the marks are averaged must all be of Masters Level.
- 33.3% of the assessment is on the written dissertation

5.3 Change of programme

Where provision is made for this in the programme specification, you may transfer to another programme, subject to the following conditions being met before the point of transfer:

- (a) you must satisfy the normal conditions for admission to the new programme;
- (b) you must satisfy the requirements in respect of mandatory modules and progression specified for each stage of the new programme up to the proposed point of entry;
- (c) the transfer must be approved by both the department(s) responsible for teaching the new programme and that for which you are currently registered.
- (d) if you are a student with Tier 4 sponsorship a transfer may not be permitted by Tier 4 Immigration rules.
- (e) you may not attend a new programme of study until their transfer request has been approved.

Further information about changing programmes is available in Section 8 of the Postgraduate Taught Regulations.

5.4 Adjustments to attendance

If you are experiencing attendance difficulties on an ongoing basis, please contact the Programme Director – Dr Yiftach Barnea. If you believe that you will not be able to comply with the attendance requirements, you may request an adjustment in your case. This would only be permitted if you have good reason to ask for it and if adjustment would not compromise competence standards or your ability to reach the learning outcomes of your programme. Requests to consider an adjustment to attendance requirements will be treated case by case and discussed by the department with the Disability and Dyslexia Services (D&DS) and Academic Quality and Policy Office (AQPO).

6 Facilities

6.1 The Library

The Information Consultant for Mathematics and Information Security is Eva Dann, who can be contacted at eva.dann@rhul.ac.uk

6.2 Photocopying and printing

The departmental printers and photocopier are reserved for staff use. Copier-printers (MFDs) for students are located in the Library, the Computer Centre and many PC labs, which will allow you to make copies in either black and white or colour.

If you require copying to be done for a seminar presentation, you need to give these materials to your tutor to copy on your behalf. Please make sure that you plan ahead and give the materials to your tutor in plenty of time. Many of the PC labs are open 24 hours a day, 7 days a week. Alternatively, there are computers available for your use in the Library, and Computer Centre.

You will be given a department printing allowance at the start of session which may be used to print on departmental and Computer Centre printers. Once the departmental allowance has been used additional print credit may be purchased from the IT service desk or credit machines around campus. Please note that the departmental allowance is used in preference to any personal credit you may have. Please do not disclose your password to anyone or permit anyone else to use your account. Always ensure you have logged off whenever you have finished using a computer. Department print credit will not be refunded if you forget to logout and someone else uses your account. Departmental staff are unable, in any circumstances, to print anything out on your behalf.

6.3 Computing

There are ten open access PC Labs available on campus which you can use, including three in the Computer Centre. For security reasons access to these PC Labs is restricted at night and at weekends by a door entry system operated via your College card.

[How to find an available PC](#)

The department has a PC lab on the lower ground floor of Bedford, Room 0-04 (shared with the Computer Science Department) which is available for use when not booked for teaching. Outside of working hours, you may access the lab using your college card.

Please note the School operates a no food or drink policy within the computer laboratories. Breaches of these regulations are treated very seriously and may result in withdrawal of access to facilities.

Departmental support for any hardware or software issues can be obtained from the Department IT helpdesk at <https://cimhelpdesk.rhul.ac.uk>

6.4 Moodle

Moodle is Royal Holloway's Virtual Learning Environment.

All modules use Moodle, all learning resources including problem sheets are posted on Moodle.

6.5 Calculators in Examinations

The following calculator is approved by the Department for use in the exams: T130X, Casio FX-83GTPlus and Casio FX85GTPlus.

Your calculator must have a MT sticker on it which can only be affixed by the Maths Admin Office (Bedford 1-29). If you are a joint student, you must have the sticker from both departments on your calculator. If you have lost your calculator you can purchase a new one from the Admin Office for £5. Please also note that spares are not allowed. This means you will not be allowed to use any other calculator apart from the ones approved by the Maths Department and if you forget it on the day of the exam, the invigilators are not allowed to issue any spares, so please do not forget yours!

7 Assessment information

7.1 Anonymous marking and cover sheets

All work that is submitted for assessment is marked anonymously.

The dissertation and weekly homework is exempt from anonymous marking.

7.2 Submission of work

Submission of homework is done electronically via Moodle.

7.3 Penalties for over-length work

Work which is longer than the stipulated length in the assessment brief will be penalised in line with Section 13, paragraph (6) of the College's [Postgraduate Taught Regulations](#):

Section 13 (6)

Any work (written, oral presentation, film, performance) which exceeds the upper limit set will be penalised as follows

- (a) for work which exceeds the upper limit by up to and including 10%, the mark will be reduced by ten percent of the mark initially awarded;*
- (b) for work which exceeds the upper limit by more than 10% and up to and including 20%, the mark will be reduced by twenty percent of the mark initially awarded;*

(c) *for work which exceeds the upper limit by more than 20%, the mark will be reduced by thirty percent of the mark initially awarded.*

The upper limit may be a word limit in the case of written work or a time limit in the case of assessments such as oral work, presentations or films.

In addition to the text, the word count should include quotations and footnotes. Please note that the following are excluded from the word count: candidate number, title, module title, preliminary pages, bibliography and appendices.

7.4 What to do if things go wrong – Extensions to deadlines

Please refer to the Extensions Policy and guidance on the College's webpage about [Applying for an Extension](#).

Please note: Not every assessment is eligible for an extension.

7.5 Support and exam access arrangements for students requiring support

Please see the College Student Handbook for details.

7.6 Academic misconduct – Plagiarism

'Plagiarism' means the presentation of another person's work in any quantity without adequately identifying it and citing its source in a way which is consistent with good scholarly practice in the discipline and commensurate with the level of professional conduct expected from the student. The source which is plagiarised may take any form (including words, graphs and images, musical texts, data, source code, ideas or judgements) and may exist in any published or unpublished medium, including the internet. Plagiarism may occur in any piece of work presented by a student, including examination scripts, although standards for citation of sources may vary dependent on the method of assessment.

Identifying plagiarism is a matter of expert academic judgement, based on a comparison across the student's work and on knowledge of sources, practices and expectations for professional conduct in the discipline. Therefore it is possible to determine that an offence has occurred from an assessment of the student's work alone, without reference to further evidence.

7.7 Progression and award requirements

The Regulations governing progression and award requirements are set out in your [Programme Specification Repository](#) (and also more generally in the [Postgraduate Taught Regulations](#)).

Resits/ repeats

If you do not pass a module unit at a first attempt you may be given an opportunity to resit or repeat the module unit (Section 12 Postgraduate Taught Regulations). Please bear in mind that decisions on which module units you may be permitted to resit or repeat and when (summer or following academic year) will be made by the Department Assessment Board of examiners in line with the provisions of the Postgraduate Taught Regulations.

Resit/Repeat	Clarification
Resit of a failed module unit	The opportunity to resit a failed module unit will either be over the Summer (August) or in the following academic year/ session, depending upon the nature of the assessment and your department's policy in terms of summer resits. Where summer resits are permitted by your department, this will normally be in module units to a maximum of 40 credits. If you are given a resit in a module unit you do not have to attend any further classes. Marks for work which has been passed will be carried forward. The mark for a module unit being resat will normally be capped at 50%. Please note that you are required to register to resit module units.
Repeat of a failed module unit	If you are given the opportunity to repeat a module unit in attendance you will need to register for the module unit for the following academic year and satisfy afresh all the assessment and attendance requirements; that is, you are expected to attend all classes and redo all required coursework and examinations for the module unit. No marks from the previous attempt at the module unit are carried forward and no work completed as part of the first attempt at the module may be resubmitted for assessment. The mark for a module unit repeated in attendance is not capped at 50%. If you are repeating in attendance you can substitute a new module unit for the one failed. The new module unit counts as a second attempt at the unit

Unless you have extenuating circumstances you are only permitted two opportunities to pass a module unit in line with Section 12 (2) of the Postgraduate Taught Regulations.

7.8 Examination results

Please see the [Examinations & Assessments](#) website for details of how you will be issued with your results.

The Examinations & Assessments website is the place where you can access the "[Instructions to Candidates](#)" and details of the examinations appeals procedures.

8 Coursework Essays and Dissertation

8.1 Coursework

There are homework exercises for each module. These are available on the module page on Moodle. Homework has to be scanned and uploaded onto the module page. The homework exercises are marked and will count towards your final mark.

Solving problems is an essential part of the learning process in mathematics. The homework exercises are designed to reinforce and progressively develop the ability to solve problems in mathematics. Some problems are harder than others, and students should not necessarily expect to solve every exercise on every sheet.

It is a college regulation that all coursework is completed and submitted for assessment. Failure to comply may lead to a formal warning and the award of incomplete or non-examined status on that module.

If, due to illness or another good cause, students fail to attend an examination or their performance is affected, the record of their homework marks will be taken into account.

8.2 The dissertation

The dissertation accounts for 33.3% of the assessment for the MSc degree. An electronic copy must be downloaded by 2pm on the first Thursday of September in the year of the written examination (more details regarding submission will be updated shortly). You should plan to work conscientiously throughout the summer if you are to produce a satisfactory dissertation by the September deadline. You are reminded that the MSc module is full time education until beginning of September (unless you have part time status) and that you are not supposed to take on any commitment during the summer that prevents you from spending most of your time on the dissertation.

In Term 2, there will be a training session to provide guidance on the project, with particular emphasis on mathematical writing and on plagiarism. You can find some resources including a LaTeX template here: <http://www.ma.rhul.ac.uk/~uvah099/Maths/ProjectAdvice.pdf>

Students are advised to use Latex or Word for preparing the MSc dissertation. Latex is particularly suitable for mathematical content and we encourage the use of it. For some help please see <https://intranet.royalholloway.ac.uk/mathematics/informationforcurrentstudents/mathematicalsoftware.aspx>

8.3 Choice of dissertation topic

The first task, which should be completed by the middle of term 2, is to decide upon a general area of research (this can be rather vague, e.g., coding theory, symmetric cryptography, quantum computing etc.) and a suitable project supervisor.

8.4 The dissertation supervisor

Your department will assign you a dissertation supervisor who will oversee your work. In most cases students are happy with the supervisory relationship. However, there are occasions where for some reason the supervisory relationship does not work and breaks down.

If this happens, you should speak as soon as possible with the Programme Director or your Personal

Advisor to see whether the problem can be resolved informally, e.g. through mediation, changing supervisor. You should not wait until after you have received your final degree results to raise the matter as it is very difficult for the College to resolve such matters or take remedial action at that point.

Module lecturers, the adviser and the programme Director may help in suggesting research areas and finding a supervisor. The supervisor will help the student to find a specific topic in the area of the student's interest. Note that students are not guaranteed the supervisor of their choice, though we try to ensure that all students have a supervisor who is willing to supervise the student's chosen topic. If you are unable to find a supervisor or a research area, then you should see the programme Director during the first half of term 2.

8.5 Proposal

By the end of term 2 (last week of lectures) students should produce a brief research proposal, of 5-10 pages. This should give an introduction to the general subject area and of the more specific problems and objectives to be studied. It should mention which literature has been studied so far and how the research will continue. This will usually be prepared in consultation with the project supervisor.

While this proposal does not count toward the final grade it is still compulsory part of the dissertation. Failure to complete a satisfactory proposal may result in the student being moved from the MSc programme to the PgDip.

8.6 Content of dissertation

The final part of the main project is to prepare the dissertation. It is important to allow plenty of time for this stage (typically at least one month). It is usually best not to leave writing of the entire dissertation to the end but to write parts of it during the summer. Usually your supervisor will read one draft version, (but will not usually read the same chapter several times) if it is given to them in good time. The students may want to give draft parts to the supervisor at earlier stages and not the entire dissertation towards the end of project.

8.7 Presentation

The dissertation must include:

- Title page.
- Abstract (or Summary), which explains the aims of the dissertation and summarises the results.
- An introduction which outlines and motivates the topic of the thesis.
- A discussion of the existing literature on the subject.
- A presentation of the original content of the project, with a full explanation of the methods used and outcomes obtained.
- Conclusions which describe how the results relate to the wider subject area and/or suggests some possible future lines of enquiry.
- Bibliography

8.8 Footnotes

In addition to the text, the word count should include quotations and footnotes. Please note that the following are excluded from the word count: candidate number, title, module title, preliminary pages, bibliography and appendices.

8.9 Bibliography

It is crucial to properly acknowledge other people's work. The bibliography usually consists of a list of publications in alphabetical order of the author's names. Each entry contains at least the author's names, the title of the publication, the journal, publisher or website, the year of publication and in case of a journal article, the volume and the page numbers of the entire article. It is unusual to quote verbatim in mathematics (apart from definitions, lemmas and theorems), and one usually refers to the entire article if one is using a result of it. Sometimes when citing long articles or books it is helpful if one refers to a particular theorem. If you use material from websites you must reference the sites.

The supervisor will give feedback on your citing, referencing and the bibliography if she/he is given a draft.

8.10 Referencing style, Illustrations and Appendices

In Term 2, there will be a training session to provide guidance on the project, including referencing styles, illustrations and appendices, with emphasis on mathematical writing and on plagiarism.

You can find some resources including a LaTeX template here:

<http://www.ma.rhul.ac.uk/~uvahogg/Maths/ProjectAdvice.pdf>

8.11 Word Count

The dissertation is usually of length between 8,000 and 16,000 words. The margins should be at least 2cm wide and the font size 11pt. Two bound hardcopies of the thesis have to be submitted. You can find some of the dissertations by students of previous years in the Admin Office in Bedford to get an idea how they look like.

8.12 Marking criteria

Each dissertation is independently marked by two examiners; one of these is normally the supervisor. An external examiner moderates the assessment. The examiners may conduct an oral examination if they wish to check the depth of the student's understanding and to ensure that the dissertation is the student's own work. Student must obtain a pass grade on the dissertation to pass the MSc degree. The examiners give up to 100 points where the points translate to the following categories:

85–100: An exceptionally high level of understanding and outstanding research potential.

70–84.99: Very high competence and excellent research potential.

60–69.99: Evidence of some creativity and independence of thought.

50–59.99: Sound understanding of the literature, but lack of accuracy or originality.

0–49.99: Insufficient or no understanding of the topic, poor quality of work.

The points are given according to the following guidelines:

Knowledge of subject (25)

- 21–25: Deep understanding and near-comprehensive knowledge
- 18–20: Deep understanding
- 15–17: Very good understanding
- 12–14: Sound knowledge of relevant information
- 10–11: Basic understanding of the main issues
- 0–9: Little or no understanding of the main issues

Organisation of material (25)

- 21–25: Of publishable quality
- 18–20: Arguments clearly constructed; material very well-organised
- 15–17: Well-organised; aims met with no significant errors or omissions
- 12–14: Coherent and competent organisation
- 10–11: Lack of clarity in written presentation or aims only partially met
- 6–9: Major flaws in arguments; aims of project not met
- 0–5: Arguments are missing/deficient. Disorganised or fragmentary

Originality, interpretation and analysis (20)

- 17–20: Significant originality in the interpretation and/or analysis; project aims challenging
- 14–16: Some originality; evidence of excellent analytical and problem-solving skills
- 12–13: Good attempt to interpret and analyse existing literature
- 10–11: Minor flaws in interpretation/analysis of existing literature
- 5–9: Poor interpretation/analysis or project aims too simple
- 0–4: Little or no interpretation or analysis; project aims trivial

Evidence of reading (10)

- 8–10: Independent reading including research papers
- 6–7: Good use of outside reading
- 4–5: Some evidence of outside reading
- 0–3: Little or no evidence of outside reading

Bibliography and referencing (10)

- 9–10: Of publishable quality
- 7–8: Good referencing and bibliography
- 5–6: Either poor bibliography or poor referencing
- 3–4: Poor bibliography and little or no referencing
- 0–2: No bibliography and little or no referencing

Style, spelling, punctuation and grammar (10)

- 9–10: Incisive and fluent, no errors of spelling, punctuation or grammar
- 7–8: Very minor errors of spelling, punctuation or grammar
- 4–6: Some errors of spelling, punctuation or grammar
- 0–3: Many errors of spelling, punctuation or grammar

9 Health and Safety Information

The [Health and Safety webpage](#) provides general information about our health and safety policies.

9.1 Code of practice on harassment for students

The College is committed to upholding the dignity of the individual and recognises that harassment can be a source of great stress to an individual. Personal harassment can seriously harm working, learning and social conditions and will be regarded and treated seriously. This could include grounds for disciplinary action, and possibly the termination of registration as a student.

The College's [Code of Practice on personal harassment for students](#) should be read in conjunction with the [Student Disciplinary regulations](#) and the [Complaints procedure](#).

9.2 Lone working policy and procedures

The College has a 'Lone Working Policy and Procedure' that can be found [here](#).

Lone working is defined as working during either normal working hours at an isolated location within the normal workplace or when working outside of normal hours. The Department and the type of work conducted by students is classified as a low risk activity and as such the following advice is relevant.

Any health and safety concerns should be brought to the attention of the Departmental Health and Safety Coordinator or the College Health and Safety Office.

It is likely that most activities will take place on College premises. However, the principles contained in the above section will apply to students undertaking duties off campus.

10 Prizes

10.1 The MSc Achievement Medal

The MSc Achievement Medal is awarded to an MSc student in the Department of Mathematics in recognition of outstanding performance across the taught part of the programme (excluding dissertation).

10.2 The MSc Dissertation Medal

The MSc Dissertation Medal is awarded to an MSc student in the Department of Mathematics in recognition of outstanding performance in their dissertation.

11 Codes of Practice

Please be aware that in addition to the Code of Conduct below there may be restrictions due to Covid-19.

Code of Conduct when using Lab 0-04 in Bedford Building

You are free to

- Make full use of the PC's in the lab for your projects, assignments or other curriculum-related work, 24 hours a day and seven days a week.
- Use the white boards to discuss ideas with colleagues (though you should respect noise levels as discussed below).

You Must

- Ensure that all doors to the Bedford Building and the labs are closed. Do not use wedges, Fire extinguishers etc., to keep the doors open.
- Respect anybody else who is using the labs. This means keeping noise levels to a minimum and generally not doing anything that is a distraction.
- Keep the labs in the state they are meant to be in. All rubbish must be placed in the bins, which you can find in the reception area outside the lab areas.
- Computers must not be moved. Chairs and tables should be left where they were found.

You must not

- Let in anybody to the building or labs whom you do not know. If you see anybody you do not know in the lab contact Security on extension 3063 (01784 443063 from your mobile).
- Leave any personal items unattended in any of the Labs or reception areas.
- Bring in food items such as pizzas or alcoholic drinks (but confectionery and soft drinks are allowed whilst working).
- Deface the lab in any way or cause damage to equipment. Any accidental damage should be reported immediately to the Computer and Technical Support team (cimhelpdesk@rhul.ac.uk).
- Use the lab for entertainment purposes. All users of departmental facilities are expected to behave in a way that avoids disturbance to other people's work. In general this means that mobile phone use, the playing of music through loudspeakers, playing games should not take place in laboratory areas.
- Reveal your password to anyone.
- Leave your PC or laptop unattended when logged in. You should set a screensaver with password on resume, or use Ctrl Alt Del to lock the computer if you are leaving the room.
- Allow use of the computers by students from outside the Department of Mathematics or Computer Science. Any such use must be authorised by the Head of Department. The systems team regularly monitor the use of the departmental system.
- Take white board pens, wipers or anything else that doesn't belong to you from the lab.
- Use the PC's for anything inappropriate.

Attempts at unauthorised access to any part of the departmental, College or external computer systems will be treated as a serious disciplinary matter. The main sanction taken against those who breach the computer regulations is withdrawal of the use of computer facilities. In serious cases the full range of disciplinary action will be taken and may include police action.

Any complaint against a student will result in an instant response with immediate suspension of the account while the complaint is investigated. With many offences (including defamation, computer misuse and obscene publication) it is likely that a zero- tolerance approach will be pursued with a permanent withdrawal of computing facilities.