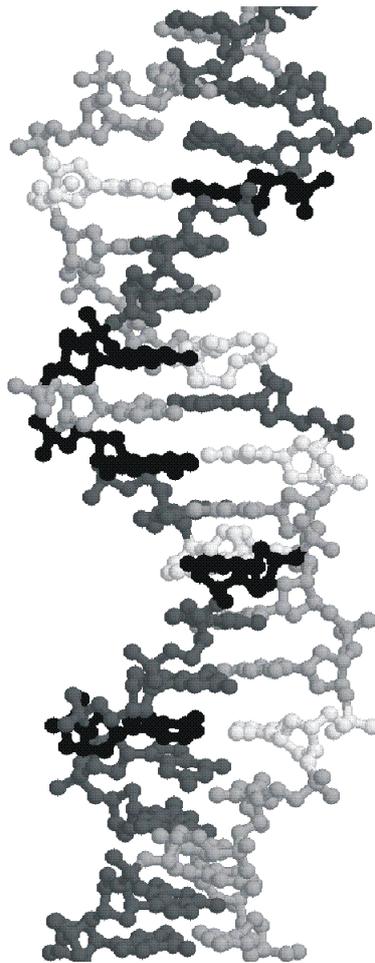




# UCL



# MSc Molecular Medicine

Programme Handbook  
2013-2014

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**Welcome to the Division of Infection & Immunity at UCL**

UCL is one of the leading universities in the UK for research in medical sciences and clinical medicine. The Division of Infection & Immunity is part of the UCL Faculty of Medical Sciences) and scientist in the Division conduct immunology, virology, microbiology and autoimmunity research across the Bloomsbury and Royal Free campuses. The majority of the Division of Infection & Immunity research groups were rated 4\* (the highest score attainable) or 3\* in the 2008 Research Assessment Exercise.

Our aim is to link fundamental laboratory research with the specialised clinical interests of the hospitals in the UCL Partners Academic Health Science Partnership. It is this clinical link, together with our geographical location providing a diverse patient case mix, which provides a unique research environment within the UK.

We have collaborative research links throughout UCL and with institutions throughout the world. In addition the clinical infectious disease interface includes the University College and Royal Free Hospitals, the London School of Hygiene and Tropical Medicine, Public Health England, and the National Blood Service.

Molecular Medicine is the application of molecular and cell biology to understanding health and disease. The Division is ideally placed to host this MSc programme because infection and immunology research is intrinsically cross-disciplinary: you have to understand the host to understand the disease and the response.

Faculty within the Division are committed to research-informed teaching and you will have the opportunity to meet many of them during the programme. We encourage you to make the most of your year at UCL and offer you a very warm welcome. We hope that you enjoy the Programme and your time in London.

Richard Milne, Programme Director  
Pete Delves, Deputy Programme Director  
Lauren Collins, Programme Administrator

**How to contact us:**

Dr Richard Milne

Tel: 020 7830 2997  
Email richard.milne@ucl.ac.uk

Professor Peter Delves

Tel: 020 3108 2135  
Email p.delves@ucl.ac.uk

Ms Lauren Collins

Tel: 020 3108 2116  
Email lauren.collins@ucl.ac.uk

**Key Dates and Holidays****KEY DATES**

UCL Term Dates For academic year 2013-14

Term 1: Monday 23 September 2013 - Friday 13 December 2013

Term 2: Monday 13 January 2014 - Friday 28 March 2014

Term 3: Monday 28 April 2014 - Friday 13 June 2014

**TERM 1**

**Welcome and Induction** Wednesday 25<sup>th</sup> September

**Welcome Round London Quiz (with Oncology)** October 2013: Date TBC

**Introduction to Molecular Medicine module:** Tuesday 1<sup>st</sup> October – Thursday 28<sup>th</sup> November 2013

**Data Interpretation module:** Tuesday 1<sup>st</sup> October – Tuesday 26<sup>th</sup> November 2013

**Molecular Basis of Disease module:** Monday 30<sup>th</sup> September – Monday 9<sup>th</sup> December 2013

**Core Laboratory Practicals module:** Monday 14<sup>th</sup> October – Monday 2<sup>nd</sup> December 2013

**Web-Based Library Research Project:** Project and supervisor assigned by Monday 21<sup>st</sup> October 2013

**Introduction to Molecular Medicine Module essay submission DEADLINE** 12:00 noon Friday 29<sup>th</sup> November 2013

**Data Interpretation coursework submission DEADLINE** 12:00 noon Friday 13<sup>th</sup> December 2013

**TERM 2**

**Molecular Basis of Disease module written EXAM** Monday 13<sup>th</sup> January 2014 14:00-17:00  
– *Location to be advised*

**Specialised modules:** Monday 13<sup>th</sup> January - Friday 28<sup>th</sup> March 2014

**Core Laboratory Practical Module write-ups submission DEADLINE** 12:00 noon Tuesday 14<sup>th</sup> January 2014

**Web-Based Library Research Project submission DEADLINE** 12:00 noon Monday 3<sup>rd</sup> March 2014

**Specialised module written EXAMS** (*details and locations to be advised, CHLDGG05 April date(s) to be confirmed in addition*)

Monday 31 March 2014	1300-1600
Wednesday 2 April 2014	1300-1600
Friday 4 April 2014	1300-1600
Monday 7 April	1300-1600

**Commence Laboratory-Based Research Project.** Tuesday 8<sup>th</sup> April 2014

### **TERM 3**

**Finish lab work for Laboratory-Based Research Project.** Friday 25<sup>th</sup> July 2014 (16 weeks)

**Laboratory-Based Research Project submission DEADLINE.** 1700 Wednesday 30<sup>th</sup> July 2014

**ORAL EXAMINATION.** Week commencing Monday 4<sup>th</sup> August 2014 – day to be confirmed

### **Holidays**

Please note that the University offices and facilities are normally only closed on Bank Holidays, Christmas and Easter.

UCL **closed** from 5:30pm on Friday 20<sup>th</sup> December 2013 – 09:00am Thursday 2<sup>nd</sup> January 2014 inclusive.

**MSc Molecular Medicine Student Christmas Vacation.** Monday 16<sup>th</sup> December 2013 – Friday 10<sup>th</sup> January 2014 inclusive.

UCL **closed** from 5:30pm Wednesday 16<sup>th</sup> April – 9.00am Wednesday 23<sup>rd</sup> April 2014 inclusive.

**MSc Molecular Medicine Student Easter Vacation.** Monday 31<sup>st</sup> March – Friday 25<sup>th</sup> April 2014 inclusive.

## **Your relationship with us: Personal Tutors, Absence, Complaints**

### **Personal Tutor**

You will be assigned a personal tutor who will provide pastoral (i.e. non-academic) support. This person will act as your first port of call should any non-academic problems (e.g. accommodation, financial or any other concerns) arise. Even if you do not have any problems, you should meet formally with them at least twice during the first term, once during the second term and once during the third term. We are then able to document that everything is O.K. In addition you should see them immediately if any problems do arise. Remember that it is usually easiest to sort out any problems early on rather than when they have developed into something more substantial. Therefore, please seek advice or reassurance from your personal tutor at the first opportunity. They are there to help and support you and will usually be able to see you at short notice should a crisis arise. Should you wish to change your personal tutor at any point, for any reason whatsoever, this is perfectly acceptable - please contact the Programme Administrator or Programme Director to arrange the transfer to a new personal tutor.

A note about References: You may well wish to use members of staff (e.g. your personal tutor or another member of staff who knows you) as referees for jobs or further study. Please seek the permission of whoever you are going to use as a referee. In any case, it is a good idea to talk briefly to your referee and perhaps to give them your CV.

### **Absence**

All students are required to report if they are away for more than two consecutive days. Please inform the Programme Administrator on 020 3108 2116 or [lauren.collins@ucl.ac.uk](mailto:lauren.collins@ucl.ac.uk).

If you are away for a week or more you are required to send in or bring the appropriate medical certificate(s). We will arrange to forward these to the necessary authorities. You must also inform the Programme Administrator (Ms Lauren Collins), the Programme Director (Dr Richard Milne) or your Personal Tutor that you are ill, or that some personal crisis is preventing your attendance.

In the case of illness or personal crisis during an examination, or while doing project work, it is **absolutely essential** that you obtain a doctor's certificate or a suitable letter from a professional and send it in to us immediately. You should ensure that the letter refers directly to the days affected, particularly if this includes the examination day itself. If you do not, the examiners cannot take your illness or troubles into account when marking.

Student Counsellors are also available. Please enquire at the Registry or Student Union.

### **Complaints/appeals**

You may have complaints and we would like to hear them as soon as possible. Many problems can be fixed, especially if you help us catch them early. If you have a formal complaint, any staff member will be happy to guide you in the correct procedure for pursuing it. If you have general complaints about the Programme, please see the Programme Director. Please speak to someone about any problem you may be facing before it escalates.

## **Addresses, Enrolment & Registration, and Vaccinations**

### **Addresses**

**It is very important that we have your correct term-time and home addresses.**

If you change your address it is your responsibility to

a) Notify the Programme Administrator (room 1.3.14, 1<sup>st</sup> floor, Cruciform Building)

and

b) Enter the changes on PORTICO, the UCL Registry and Academic Services website at [www.ucl.ac.uk/portico](http://www.ucl.ac.uk/portico). If we don't have your up-to-date address and telephone number, we won't be able to contact you if anything urgent arises.

### **Enrolment and registration**

You are required to enrol when you arrive to start your MSc programme; enrolment instructions will be provided by UCL Registry. You will have to prove your previous qualifications and your competency in English, if these were conditions in your offer of a place. You need to pay the required fees, or to make satisfactory arrangements for this payment. If you have been awarded a grant, your fees will be paid automatically. Please note that you have only 2 weeks from the start of your Programme to complete your enrolment, and until the end of October to pay your fees. Otherwise, after that date your registration for the Programme will automatically be cancelled. Please contact the UCL Registry if you have queries.

You will be issued with an identity card at enrolment that will enable you to access libraries, student union buildings and examination halls.

It is important to note that the name you give at enrolment is the name in which your Degree will be awarded, so give your 'proper' name. Any nickname or shortening of your name can be used informally during your time here if you wish.

### **Occupational Health Screening and Hepatitis B vaccine**

A majority of the laboratory based research projects are hosted by laboratories where human material (primary cells, serum, plasma, whole blood etc) are handled. These present a risk for Hepatitis B exposure. If you have not already been immunised, you are strongly advised to contact UCL Occupational Health and arrange for a course of the HBV vaccine. You will have to complete and submit to them the "Job Hazard Identification Form" which must be signed by the Programme Director or a designated deputy.

[http://www.ucl.ac.uk/hr/occ\\_health/forms/index.php](http://www.ucl.ac.uk/hr/occ_health/forms/index.php)

HBV immunisation is not compulsory, but you should bear in mind that local safety rules mean that you may not be able to do your first choice of project if you have not received the vaccine.

## **Introduction to the programme**

The Molecular Medicine MSc programme is offered by UCL to graduates with a degree in a scientific, veterinary or medical discipline. The programme is administered by the Division of Infection and Immunity. The bulk of the teaching is provided by members of the Division as well as staff from the Institute of Child Health and invited guest speakers.

The programme consists of 8 modules:

Four compulsory Core Modules

Two Specialised Modules (two options selected from the five Specialised Modules)

One Web-Based Library Research Project module

One Laboratory-Based Research Project module

Descriptions of each module, including assessment criteria, are provided later in this handbook

The MSc Molecular Medicine is an intensive 1 year full time Programme. **Attendance at all the timetabled sessions is compulsory.** It is anticipated that you will undertake at least 5 hours of private study for each hour of staff contact time (lectures, practicals, tutorials, etc).

### **Aims of the Programme:**

The programme is designed to provide an understanding of the molecular basis of modern medicine. Each module is designed to introduce and evaluate molecular biological principles and to explore them in relation to disease processes and clinical application.

### **Objectives:**

To understand the molecular basis of pathogenesis, clinical presentation, diagnosis and treatment of human diseases.

To be able to describe and discuss topics related to infectious diseases, chronic diseases, genetic diseases, endocrine disorders, malignancy and/or diseases arising from abnormal immune responses.

To be able to carry out molecular, biological and computing techniques for investigation of human diseases.

### **Programme website**

You will find important information and learning resources for the MSc Molecular Medicine on the Programme Virtual Learning Environment:

[www.ucl.ac.uk/moodle](http://www.ucl.ac.uk/moodle)

### **What do I need to know and at what level?**

You will be expected to know the material related to that presented in the lectures, tutorials, practical sessions and your two research projects. This includes the material in any references which are specified during the Programme. The recommended book for the Introduction to Molecular Medicine and the Molecular Basis of Disease modules is Alberts *B et al.* Molecular Biology of the Cell. 5<sup>th</sup> Ed.. 2008. Publ. Garland Science.

## **Assessment**

**Formative assessments** are used in some of the modules. These assessments provide you with feedback so that you can form an impression of how well you are doing, but the mark does not contribute to your final mark for the module. If an assessment is formative rather than summative this will be made clear to you.

**Summative assessments** contribute towards the overall mark you are awarded for the module. In this handbook the term 'assessment' usually refers to summative assessments and the weighting of each assessment to your final mark will be indicated.

If a student fails any of the written examinations they will have the opportunity to resit (as soon as is possible and once only) a new exam paper for that module. One resubmission of each piece of coursework for the taught modules is also allowed. You need to achieve an overall weighted mark of 50% or above in order to pass a module, but you do not need to achieve a pass mark in each component of a module.

Students should be aware that every module contributing to the Degree is marked and checked by at least two Internal Examiners. An External Examiner (who is from another university) monitors the standard of marking.

All candidates are referred to by number rather than name wherever possible to ensure anonymity in marking.

Following the MSc Molecular Medicine Board of Examiners meeting at the end of the programme, results will be released according to UCL guidelines.

### **Coursework and Project Deadlines**

It is useful to appreciate that a 'deadline' is **not** the time and date the work should be submitted. It is the absolute final time that work will be accepted (except if there are **substantial** extenuating circumstances; computer-related problems are NEVER accepted as an extenuating circumstance) without a late submission penalty (see below). In all cases work can be submitted days before the deadline, in some cases (depending on the nature of the assignment, e.g. the Web-Based Library Research Project) even weeks before, if you have already completed that piece of work. We **strongly** suggest you aim to submit all coursework earlier than the last due date.

**On occasions students have questioned why there are several deadlines all in the same week. From the above it should be evident that having to do several pieces of work in a short time can easily be avoided by managing your time effectively. You can commence work as soon as it is assigned and then submit it prior to, not on, the date of the deadline.**

### **Submission of Coursework and Project Reports**

You will be informed by module organisers of the method of submission of Coursework and Project Reports. For some items this is specified on the relevant pages of this handbook. Some coursework submission requires you to upload it via TurnItIn on Moodle. The coursework submission box is set up on the Moodle site under assessments. Once you submit your coursework it will be submitted automatically to TurnItIn (Plagiarism detection system; see below).

### **Late Submission of Coursework**

The full allocated mark will be reduced by 5 percentage points for the

first working day after the deadline for the submission of the coursework.

The mark will be reduced by a further 10 percentage points if the coursework is submitted during the following six days.

For coursework submitted later than the above, providing it is submitted before the end of the first week of term 3, it will be recorded as zero but the assessment would be considered to be complete.

### **Over-length Coursework**

Written assessments usually have a stated word limit. Most academic journals and grant awarding bodies impose word limits on submissions and reject them if the word limit is exceeded. Please adhere as closely as possible to the stated word limit.

Written work that exceeds the stated word limit by more than 10% will not be accepted for submission (i.e. it will not be date-stamped or otherwise recorded as formally submitted). Instead, it will be returned to the student with instructions to reduce the length. The work may then be resubmitted, however, late submission penalties will apply.

For work that exceeds the upper word limit by 10% or more, a mark of zero will be recorded.

For work that exceeds the upper word limit by less than 10% the mark will be reduced by ten percentage marks; but the penalised mark will not be reduced below the pass mark, assuming the work merited a pass.

### **Quality of Written English**

We expect that all coursework will be presented to a professional standard. Spelling and grammar errors are not acceptable. You should make use of the spellcheck and grammar check tools in your word processing program and, if necessary, ask a friend or fellow student to proof read your work.

If you are not sure how to use Microsoft Word or Powerpoint, you should take advantage of the wide range of training options that UCL offers to students. Details can be found here:

<http://www.ucl.ac.uk/isd/common/resources>

### **General information**

The examinations are set by the module organiser, checked by a second internal examiner and also by the External Examiner (from outside UCL). The examinations are marked by two internal examiners and the marking checked by the External Examiner. Examination scripts are marked anonymously. Recommendations about the results of individual modules and degrees awarded are made by the Board of Examiners for the MSc in Molecular Medicine to the Faculty Graduate Board of Examiners. The Board of Examiners for the MSc in Molecular Medicine includes all the Internal Examiners and the External Examiner.

### **Extenuating circumstances**

If there are any circumstances which affect your examination performance, either during the period of study or during the examination period, which you would like taken into account, please discuss this with the Programme Director (Dr Richard Milne) as soon as possible. Typical circumstances which might be taken into account are serious or prolonged illness, disability or bereavement. Documentation is normally required (eg. doctor's note).

Information will be kept confidential and special circumstances will be discussed by a small committee of examiners.

### Missing exams due to illness or other unavoidable cause

If you miss an examination due to illness or some other unavoidable cause, please inform a member of staff, preferably the Programme Administrator or Programme Director, **as soon as possible**. The Programme Administrator should be given a doctor's note if the absence is due to illness and any possible documentary evidence supporting absences due to other reasons.

### Cheating and plagiarism

Cheating or attempts to cheat may lead to serious consequences, including the degree not being awarded. Unless you are explicitly informed otherwise, you are not allowed to take any written material into the examination. Please also see information on plagiarism in this handbook.

### Degree awarded

Master of Science in Molecular Medicine

This degree requires an accumulated total of 180 credits. Credits are acquired on successful completion of modules. The pass mark is 50% in all modules.

Introduction to Molecular Medicine module	15 credits
Data Interpretation module	15 credits
Molecular Basis of Disease module	15 credits
Core Laboratory Practicals module	15 credits
Specialised module	15 credits (x2)
Web-Based Library Research Project	30 credits
Laboratory-Based Research Project	60 credits
<b>TOTAL</b>	<b>180 credits</b>

Pass mark for the degree is 50%.

Merit mark for the degree is a mark of 60% or above averaged over all the Modules, and with 65% or above in the Laboratory-Based Research Project, no marks below 50%, no condoned marks, no re-sits, and all marks are based on first attempts.

Distinction mark for the degree is a mark of 70% or above averaged over all the Modules, and with 70% or above in the Laboratory-Based Research Project, no marks below 50%, no condoned marks, no re-sits, and all marks are based on first attempts.

Please note that if you owe money to the College or residences, or have unreturned library books, your degree results are likely to be withheld – so please make sure you have cleared any debts to College and returned any library books!

### Prizes

The MSc Molecular Medicine Board of Examiners, at their discretion, will award the John and Elizabeth Sherris Graduate Student Prize to the student who they jointly feel consistently performed to the highest standard during the year. This will take into account exam marks

and the excellence of the submitted laboratory research project report. Candidates would normally be expected to have achieved a Distinction in order to be considered for the prize.

**Graduation ceremony**

The graduation ceremony (for students who have completed their degree) normally takes place in the August/September of the year after you have completed your degree. Arrangements for this are made by the Registry and not the Division and you should receive your application form for places from the Registry which you must return by the specified date if you wish to attend. Transcripts are also provided by the Registry and not the Division.

## **Plagiarism**

You should be aware that UCL uses a sophisticated detection system (Turnitin®) to scan work for evidence of plagiarism. This system has access to billions of sources worldwide (websites, journals etc.) as well as work previously submitted to UCL and other universities. Most departments will need work to be submitted electronically as well as in paper form.

### **What is plagiarism?**

Plagiarism is defined as the presentation of another person's thoughts or words or artefacts or software as though they were a student's own. Any quotation from the published or unpublished works of other persons must, therefore, be clearly identified as such by being placed inside quotation marks, and students should identify their sources as accurately and fully as possible. A series of short quotations from several different sources, if not clearly identified as such, constitutes plagiarism just as much as does a single unacknowledged long quotation from a single source. Equally, if a student summarises another person's ideas, judgements, figures, software or diagrams, a reference to that person in the text must be made and the work referred to must be included in the bibliography. Recourse to the services of 'ghost-writing' agencies (for example in the preparation of essays or reports) or of outside word-processing agencies which offer correction/improvement of English is strictly forbidden, and students who make use of the services of such agencies render themselves liable for an academic penalty.

Use of unacknowledged information downloaded from the internet also constitutes plagiarism. Where part of an examination consists of 'take away' papers, essays or other work written in a student's own time, or a coursework assessment, the work submitted must be the candidate's own.

It is also illicit to reproduce material which a student has used in other work/assessment for the course or programmes concerned. Students should be aware of this 'self-plagiarism'. If in doubt, students should consult their Personal Tutor or another appropriate teacher.

Failure to observe any of the provisions of this policy or of approved departmental guidelines constitutes an examination offence under UCL and University Regulations. Examination offences will normally be treated as cheating or irregularities under the Regulations in respect of Examination Irregularities. Under these Regulations students found to have committed an offence may be excluded from all further examinations of UCL or the University or of both.

The expression of original ideas is considered intellectual property, and is protected by copyright laws, just like original inventions. Almost all forms of expression fall under copyright protection as long as they are recorded in some way (such as a book or a computer file).

### **All of the following are considered plagiarism:**

- turning in someone else's work as your own
- copying words or ideas from someone else without giving credit
- failing to put a quotation in quotation marks
- giving incorrect information about the source of a quotation
- changing words but copying the sentence structure of a source without giving credit
- copying so many words or ideas from a source that it makes up the majority of your work, whether you give credit or not (see Turnitin®'s section on "fair use" rules)

### **Believe it or not...**

Changing the words of an original source is not sufficient to prevent plagiarism. If you have retained the essential idea of an original source, and have not cited it, then no matter how drastically you may have altered its context or presentation, you have still plagiarized. Most cases of plagiarism can be avoided, however, by citing sources. Simply acknowledging that certain material has been borrowed, and providing your audience with the information

necessary to find that source, is usually enough to prevent plagiarism. See the section on citation for more information on how to cite sources properly. See the UCL document on how you should cite your references and referencing styles.

### **Did you know?**

The penalties for plagiarism can be surprisingly severe, ranging from failure of classes to expulsion from academic institutions!

- It doesn't matter if you intend to plagiarise or not! In the eyes of the law, and most publishers and academic institutions, any form of plagiarism is an offence that demands punitive action. Ignorance is never an excuse.
- It is even possible to plagiarise from yourself, if you are citing a work you submitted elsewhere. In most Universities this will result in a failing grade for the work, and possibly for the course!
- Plagiarism is almost always a symptom of other educational problems.

### **Why do students plagiarise?**

There are two main types of plagiarism – intentional and unintentional. The list below is not exhaustive but contains the most commonly encountered reasons:

#### **On the whole unintentional:**

- Misunderstanding about citation
- Over-reliance on the original source material
- Following practices encouraged or accepted in previous educational experience or culture
- Not fully understanding when group work ceases and individual work begins
- Compensating for poor English language skills
- Poor note-taking practice

#### **On the whole intentional:**

- Leaving the work to the last minute and taking the easy option
- Needing to succeed
- Sheer panic
- Thinking that it is easy to get away with it
- Having problems with the workload
- Copying others is easier than original work
- Sensing that the teacher will not mind

### **What does this mean in practice for you, as a student at UCL?**

#### **It means you CAN'T do the following:**

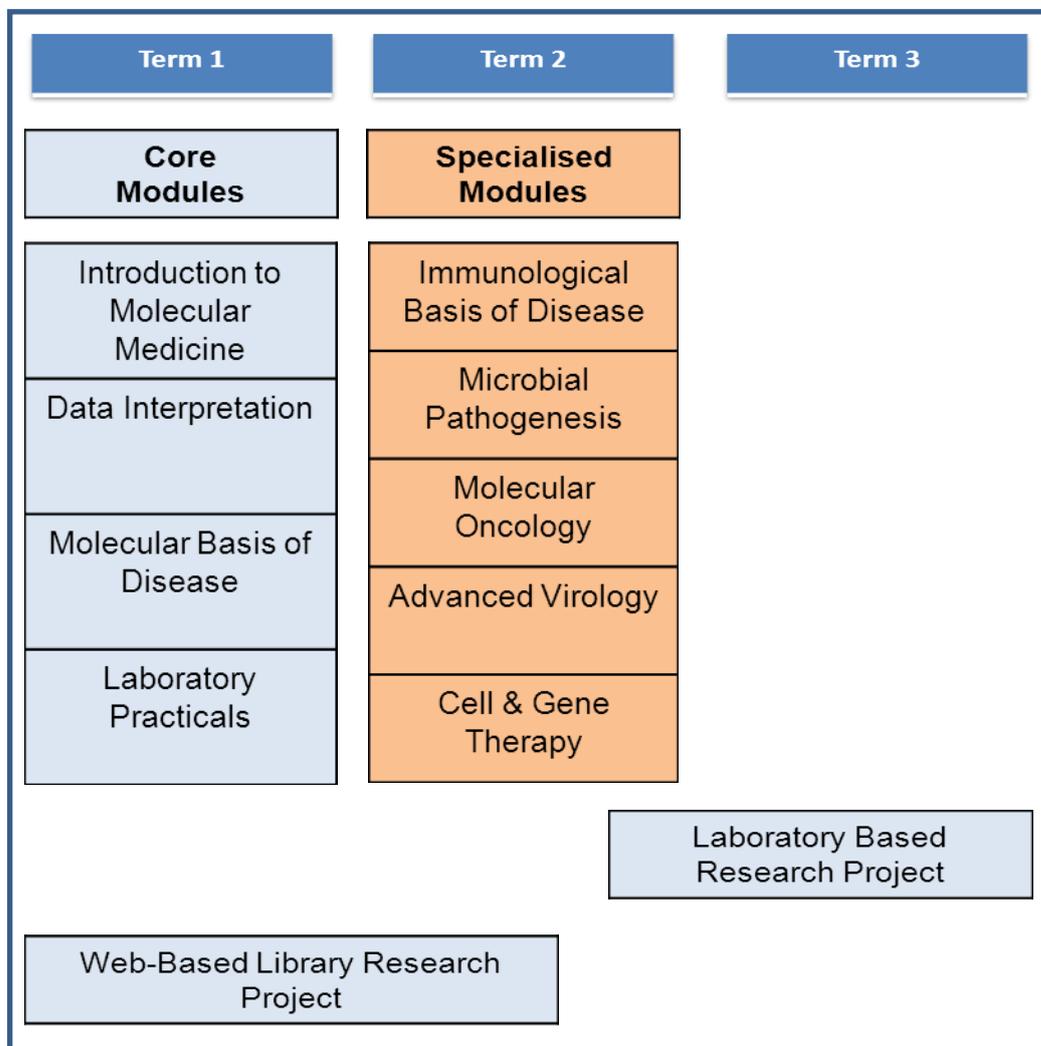
- Cut and paste from electronic journals, websites or other sources to create a piece of work.
- Use someone else's work as your own.
- Recycle essays or practical work of other people or your own (this is self-plagiarism).
- Employ a professional ghostwriting firm or anyone else to produce work for you.
- Produce a piece of work based on someone else's ideas without citing them.

#### **So what CAN you do?**

- You can quote from sources providing you use quotation marks and cite the source (this includes websites). See [www.ucl.ac.uk/Library/CitationPlagiarism.doc](http://www.ucl.ac.uk/Library/CitationPlagiarism.doc) for how to cite references.
- You can paraphrase (take information from a piece of work and rewrite it in a new form) but you must still mention the source.
- In the case of joint practical or project work (or some group projects) individuals may use the same data, but the interpretation and conclusions derived from that data i.e. the 'write-up' must be their own.

**The Modules**

The Molecular Medicine programme is modular in structure and consists of four Core Modules, two out of five Specialised Modules, a Web-Based Library Research Project and a Laboratory-Based Research Project to be studied over a period of 1 year.

**Degree Structure: A reminder**

Introduction to Molecular Medicine module	15 credits
Data Interpretation module	15 credits
Molecular Basis of Disease module	15 credits
Core Laboratory Practicals module	15 credits
Specialised module	15 credits
Specialised module	15 credits
Web-Based Library Research Project	30 credits
Laboratory-Based Research Project	60 credits
<b>TOTAL</b>	<b>180 credits</b>

**Core Modules – Introduction to Molecular Medicine module (PATHG019)**

Module Organiser:	Professor Benny Chain
Deputy Module Organiser:	Professor Peter Delves
Start date:	Tuesday 1 <sup>st</sup> October 2013
End date:	Thursday 28 <sup>th</sup> November 2013
Content:	Lectures
Summative Assessment:	1,500-2,000 word essay (100%)
Submission deadline:	12:00 noon Friday 29 <sup>th</sup> November 2013

To contact the module organiser: [b.chain@ucl.ac.uk](mailto:b.chain@ucl.ac.uk)

The module provides an overview of the frontiers of cell biology and cell pathology research that underpin molecular medicine. The module is made up of a series of seminars (mostly 2 hours) by experts in selected topics of cell biology. Each lecture aims to provide:

- i) A brief overview of the topic (but students are expected to be familiar with the basics of each topic as covered in a standard cell biology \*textbook before the module)
- ii) Details on one or more areas of active research interest, including appropriate description of the experimental technology required
- iii) Discussion of how changes in the molecular processes in question are linked to disease

Given the scope of molecular cell biology, the module cannot be comprehensive. Nor is it feasible in a single seminar to exhaustively cover even a single topic (for example cell cycle). The objectives are to ensure all students have a sufficient basic knowledge of the major processes of the cell, to get a flavour of what are the outstanding questions driving research in the field at present, and how these could be tackled, and to begin to consider the intricate connection between cellular processes and disease. The topics covered have been chosen partly on their importance and partly to reflect the specific research strengths within UCL.

The topics which will be covered are: The actin cytoskeleton; Protein structure and folding; Cell cycle and cancer; Transcriptional regulation; Cell trafficking; Mitochondria; Signalling: the NFkB pathway; Signalling: Calcium pathway; Signalling 3: the EGFR family; The structure of the chromosome; Cell senescence; Lipid transport; Proteolysis; Cell death.

\*A good reference textbook for this module is Molecular Biology of the Cell (2008) Alberts et al. 5<sup>th</sup> Edition.

**Summative Assessment:**

A 1,500-2,000 word essay on a given topic. The essay should be referenced with between 10-20 references, which are not included in the word limit.

**Core Modules – Data Interpretation module (PATHG017)**

Module Organiser:	Dr Milica Vukmanovic-Stejic
Deputy Module Organiser:	Professor Peter Delves
Start date:	Tuesday 1 <sup>st</sup> October 2013
End date:	Tuesday 26 <sup>th</sup> November 2013
Content:	Tutorials
Summative Assessment:	Data handling coursework (100%)
Submission deadline:	12:00 noon Friday 13 <sup>th</sup> December 2013

To contact the module organiser: [m.vukmanovic-stejic@ucl.ac.uk](mailto:m.vukmanovic-stejic@ucl.ac.uk)

This module consists of a series of tutorials in which you will be able to present and discuss primary research literature. Papers chosen will be aligned with the specialised modules and should provide a flavour of their content to help you in your module choice. There will also be a single session providing an introduction to statistics.

**Aims:**

To be able to critically evaluate scientific literature relevant to the field of molecular medicine

**Objectives:**

On completion you should:

- be able to read and understand primary literature related to various aspects of cellular and molecular biology
- be able to clearly present primary journal articles in a tutorial setting.
- understand selected modern molecular and cellular techniques used to investigate biological problems.
- appreciate the importance of appropriate statistical analysis of data.
- be aware of the importance of appropriate experimental controls and of the limitations of the scientific method.

**Summative Assessment:**

Data handling coursework consisting of a data interpretation exercise based upon a research paper, or a part of a research paper, provided to you.

**Core Modules – Molecular Basis of Disease module (PATHG016)**

Module Organiser:	Dr Mona Bajaj-Elliott
Deputy Module Organiser:	Professor Peter Delves
Start date:	Monday 30 <sup>th</sup> September 2013
End date:	Monday 9 <sup>th</sup> December 2013
Content:	Lectures
Summative Assessment:	Written examination (100%)
Exam date and time:	14:00-17:00 Monday 13 <sup>th</sup> January 2014, location to be advised

To contact the module organiser: [m.bajaj-elliott@ucl.ac.uk](mailto:m.bajaj-elliott@ucl.ac.uk)

**Aims:**

To gain an understanding of the molecular basis of a number of different disease situations.

**Objectives:**

On completion you should be able to:

- Understand the pathological basis of a number of different diseases
- Appreciate the various types of molecular and cellular defects that can occur in disease
- Describe the major components of the immune response
- Be familiar with the events that control the development of cancers
- Discuss how laboratory findings can be translated into clinical trials

**Summative Assessment:**

Three hour unseen written examination consisting of 3 sections each with equal weighting. In section A you have to answer one out of two data interpretation questions. Section B is short notes on six out of ten topics. Section C is one out of four essay questions. Past papers are available on the module Moodle site.

**Core Modules – Core Laboratory Practicals module (PATHG018)**

Module Organiser:	Professor Benny Chain
Deputy Module Organiser:	Dr Brian de Souza
Start date:	Monday 14 <sup>th</sup> October 2013
End date:	Monday 2 <sup>nd</sup> December 2013
Content:	Laboratory practicals
Formative Assessment:	One laboratory practical report
Summative Assessment:	Four laboratory practical reports (100%)
Submission Deadline:	12:00 noon Tuesday 14 <sup>th</sup> January 2014

To contact the module organiser: [b.chain@ucl.ac.uk](mailto:b.chain@ucl.ac.uk)

A series of laboratory practicals covering core techniques in molecular medicine including the diagnosis and monitoring of clinical conditions.

**Aim:**

To gain a practical insight into some commonly used molecular, cellular and bioinformatics techniques

**Objectives:**

On completion you should be:

- Aware of good laboratory practice and able to work safely in the laboratory.
- Able to accurately pipette and make dilutions.
- Able to carry out a number of commonly employed techniques.
- Able to present experimental data in a written report.
- Able to analyse scientific data and interpret experimental findings.

**Formative Assessment (compulsory):**

You will write a report on the first practical you do and hand it in a few days after having done the practical. We will provide you with feedback that should help you prepare optimal reports for the summative assessment.

**Summative Assessment:**

The four subsequent laboratory practical reports

### The Specialised Modules

In the MSc Molecular Medicine you will choose **two** topics (from a choice of five) to study in more detail in specialised modules. As these specialised modules vary in structure (in both teaching delivery and assessment methods), students are strongly advised to discuss details of the specialised modules with the relevant module organisers. The two Specialised Modules should be selected and approved by the module organisers not later than the second week of November. All Specialised Modules run between January and March (second term of the academic year) and are timetabled to allow you to select any 2 out of the 5 on offer:

- **Microbial Pathogenesis**
- **Immunological Basis of Disease**
- **Advanced Virology**
- **Molecular Oncology**
- **Cell & Gene Therapy**

A note about the Cell and Gene therapy module (C&GT):

This module comprises components from two modules from the MSc in Gene Therapy run at the Institute of Child Health. These modules run on a different timetable system from the MSc in Molecular Medicine. As a result, there will be a small number of clashes between the C&GT module and the other specialised modules. (The number of clashes varies depending on module combinations but should not be more than four lectures in total.) All of the C&GT lectures will be videoed and placed on the Module Moodle site. When clashes occur, it is expected that students will attend the other specialised module lecture and review the C&GT lecture on line.

	Monday	Tuesday	Wednesday	Thursday	Friday
09.00 – 11.00	Microbial Pathogenesis		Advanced Virology	Molecular Oncology	Immunological Basis of Disease
11.00 – 13.00	Advanced Virology	Molecular Oncology	Immunological Basis of Disease	Microbial Pathogenesis	
	Cell & Gene Therapy				

Please note that there may sometimes be additional sessions timetabled in the **afternoon**. The total number of hours of contact time (lectures, tutorials, etc) and of self-directed learning is similar for each of the five modules (i.e. the Immunological Basis of Disease does not utilise all of the allocated slots every week). Please consult individual timetables for each module.

### **Summative Assessment**

The Specialised Modules are assessed by submission of essays and/or laboratory reports and/or oral presentations and/or unseen written examination at dates specified by the respective Specialised Module organisers.

**Specialised Module – Microbial Pathogenesis (PATHG013)**

Module Organiser:	Dr Bambos Charalambous
Deputy Module Organiser:	Prof Tim McHugh
Start date:	Monday 13 <sup>th</sup> January 2014
End Date:	Thursday 27 <sup>th</sup> March 2014
Content:	Lectures and student presentations
Formative assessment:	Oral presentation based on a library project (compulsory)
Summative assessment:	A library project (70%) and paper critique (30%)

To contact the module organiser: [b.charalambous@ucl.ac.uk](mailto:b.charalambous@ucl.ac.uk)

**Mondays 09.00 – 11.00 and Thursday 11.00 – 13.00**

**Aim**

To provide an overview of how the key prokaryotic and eukaryotic pathogens cause disease in man. Reflecting the expertise within UCL examples of well-defined host-pathogen interactions will be studied and the evidence for microbial aetiologies of diseases whose cause is still uncertain will be explored.

**Learning objectives**

- Describe the major bacterial, fungal and parasitic pathogens.
- Describe the structure and organisation of each of the pathogen types.
- Describe the molecular mechanisms by which microbial pathogens invade and cause disease.
- Explain the molecular pathogenesis of examples of acute and chronic infectious diseases including tuberculosis, malaria, meningitis, gastrointestinal and respiratory infections.
- Provide an overview of the techniques for molecular diagnosis of infection and the tools for molecular epidemiology of infection.

**Assessment/exams:**

- Library project (70%)
- Paper critique (30%)
- formative compulsory oral presentations

**Shared teaching**

Parts of this module are shared with students on the INFN3002 Clinical Microbiology 3<sup>rd</sup> year undergraduate course.

**Specialised Module - Immunological Basis of Disease (PATHG014)**

Module Organiser:	Dr Brian de Souza
Deputy Module Organiser:	Professor Peter Delves
Start date:	Tuesday 14 <sup>th</sup> January 2014
Content:	Lectures, tutorials and student presentations
Summative Assessment:	1 oral presentation with 1 page handout (20%) Written examinations: 3 essay questions and 2 data Interpretation questions (80%)

To contact the module organiser: [Brian.deSouza@lshtm.ac.uk](mailto:Brian.deSouza@lshtm.ac.uk)

**Aims:**

To allow the student to explore the cellular and molecular basis of diseases and in particular where the immune system acts inappropriately to foreign and/or self antigens.

**Objectives:**

On completion of the module you should understand the immunological basis of:

- Autoimmune diseases
- Allergies
- Transplantation

**Contents:**

Lectures 45 hours.

Tutorials and oral presentations 10 hours.

**Shared Teaching:**

Some sessions of this teaching series are shared with medical students undertaking an integrated BSc.

**Specialised Module - Molecular Oncology (PATHG020)**

Module Organiser:	Professor John Hartley
Deputy Module Organiser:	Dr Emma Morris
Start date:	Tuesday 14 <sup>th</sup> January 2014
Content:	Lectures, tutorial, demonstration and journal club
Summative Assessment:	2 journal club presentations (10% each) and essay (20%). Written examination: 3 essay questions and 2 problem solving questions (60%)

To contact the module organiser: [john.hartley@ucl.ac.uk](mailto:john.hartley@ucl.ac.uk)

**Aims:**

To provide an understanding of the molecular basis of oncology and to introduce the student to the relationship between molecular, epidemiological and clinical aspects of cancer.

**Objectives:**

On completion, you should understand:

- What cancer is and how it is caused.
- The main principles of cancer biology, cancer genetics and tumour immunology.
- The basic principles of the molecular pathology of cancer with a more detailed knowledge of leukaemia, lymphoma, colon, breast and ovarian cancers.
- The principles and problems of modern cancer treatment.
- Novel approaches to cancer therapy.

**Contents:**

Lectures: 40 hours of lectures.

Tutorial, demonstration, journal club 20 hours.

**Shared teaching:**

Some sessions of this teaching series are shared with BSc and MBBS students.

## **Specialised Module - Advanced Virology (PATHG015)**

Module Organiser:	Dr Richard Milne
Deputy Module Organiser:	Dr Daniel Webster
Start date:	Monday 13 <sup>th</sup> January 2014
Content:	Lectures
Summative Assessment:	<u>In-course assessment:</u> by submission of one data-handling exercise (20%) and one oral "journal club" presentation (20%)
Summative Assessment:	<u>Written examination:</u> 1 compulsory short answer question (write short notes on 3/6 topics); 3 long answer essay questions chosen from 6 All four questions have equal weighting (60%)

To contact the module organiser: [richard.milne@ucl.ac.uk](mailto:richard.milne@ucl.ac.uk)

### **Mondays 11.00 – 13.00 and Wednesdays 09.00 – 11.00**

Almost every week, there are news stories about virus infections. They are so frequent that it is easy to overlook them. Currently, (I'm writing this in August 2013) the novel Middle East coronavirus is creating a lot of interest: it was found in camels a few weeks ago and, today, the BBC is reporting that it has been isolated from Egyptian Tomb bats. Measles is still a problem in areas of England and Wales and, of course, there is always flu: swine flu, bird flu, 1918 flu...

Why do viruses cause epidemics? Where do they come from? How do they enter the human population? How do they cause disease? Why are some viruses much more dangerous than others? How do we control and prevent infections?

This module explores the remarkable and intimate interaction between virus and host at many levels: molecular, cellular, host organism and population. We will take an evolutionary perspective to the study of viruses and discover how viruses adapt to optimise survival and replication in their host. Conversely, we will discuss the many effector mechanisms that hosts can deploy to prevent infection or control it once established. Virologists must be, to some extent at least, cell biologists, immunologists and biochemists. This will be clear from lectures on the cell biology of virus entry, mechanisms of viral immune evasion and virus structure. Another theme of the module is that to understand clinical virology - how and why viruses cause disease and how this can be prevented - it is necessary to understand the basic biology of the virus involved. This is reflected in the two types of lecture in the module: lectures on principles of virology: virus entry, virus replication, virus assembly; and those on individual viruses: measles, influenza, HIV...

By the end of the module, students will understand the principles of virus replication and will have a broad knowledge of individual virus infections, their treatment and prevention.

### **Module Contents:**

Lectures: 36 hours of lecture/tutorial

### **Shared teaching:**

Taught sessions of this module are also taken by iBSc, BSc and MSc students on other programmes.

**Specialised Module - Cell and Gene Therapy: Molecular and Clinical Aspects (CHLDGG05)**

Module Organiser:	Dr Steven Howe
Deputy Module Organiser:	Dr Richard Milne
Start date:	Monday 27 <sup>th</sup> January 2014
Content:	Lectures and tutorials
Summative Assessment:	<u>In-course assessment:</u> Comprehension and presentation of a paper (40% of final mark) <u>Written examination:</u> Unseen short answer examination. (60% of final mark)

To contact the module organiser: [s.howe@ucl.ac.uk](mailto:s.howe@ucl.ac.uk)

The aim of this module is to teach the students the basic scientific concepts which underlie the development and application of gene therapy. It will introduce aspects of genetics, cell biology, virology, inherited diseases and immunology.

Lectures will describe the theory of gene therapy and the tools that have been developed, and those which are in development. Examples of clinical application will be given, explaining historic, current and future cell and gene therapy treatment strategies. It will introduce concepts in clinical and basic research, clinical trials and methodology. Alongside the science, ethical, regulatory and monitoring issues that are required for clinical studies will be discussed.

The module is designed to deliver a broad overview of gene and cell therapy, and it is expected that students will invest time to self-study outside of class meetings to discover areas of interest in greater detail.

This module will be delivered mostly as a series of lectures by ICH/UCL staff with some external experts. There will be the opportunity for students to attend additional ICH/UCL research seminars

**Module Contents:**

Lectures: 30 hours of lecture/tutorial

A note on timing: The lectures for this module are delivered in two teaching weeks. Timetable details are available from the module organiser.

**Assessment Guidelines for Taught Modules****Marks and grades**

<40%	Grade D	Fail
40-49%	Grade C	*Fail
50-59%	Grade B	Pass
60-69%	Grade A	Pass
=> 70%	Grade A+	Pass

\*The Board of Examiners can condone (i.e. allow as a pass) up to 25% of the programme at 40-49% as long as the overall mark is 50% or more.

**1. Essays for coursework and unseen examination**

(Note that these are generic guidelines: not all essays involve a literature survey, referencing or original research)

**<40% Grade D**

Clear lack of understanding  
Major errors of fact and no grasp of key concepts  
Major omissions  
No discernible essay structure  
Inadequate references  
Very poor discussion of future research directions

**40-49% Grade C**

Several errors of fact and no grasp of key concepts  
Several omissions  
Poorly discernible essay structure  
Minimal discussion  
Inadequate references  
Poor coverage of future research directions

**50-59% Grade B**

Some errors of fact and limited grasp of key concepts  
Some omissions  
Adequately structured  
Reasonable referencing  
Reasonable discussion of future research directions

**60-69% Grade A**

Few factual errors  
Minimal misunderstanding of key concepts  
Few omissions  
Some attempt at critical analysis/appraisal of subject  
Less well structured and researched than A+ as reflected in the literature survey and discussion  
Future research directions showing less insight than A+

**=>70% Grade A+**

No factual errors/omissions  
Clear understanding of key concepts  
Balanced and coherent argument  
Refined and thoughtful critical analysis/appraisal of subject  
Clarity of ideas and writing  
Excellent structure: introduces and then leads the reader through the subject

Up-to-date literature survey incorporated in the text and reflected as a discursive element in the conclusions Thoughtful outline of possible future directions together with their scientific and socio-economic implications. Well researched.

## **2. Data analysis: unseen examinations, coursework, laboratory reports**

### **<40% Grade D**

Clear lack of understanding  
Numerous major and minor omissions and errors  
Inadequate data content  
Very poor presentation

### **40-49% Grade C**

Numerous major and minor omissions and errors  
Inadequate data content  
Poor understanding of data  
Little analysis  
Confusing presentation

### **50-59% Grade B**

Some major and/or minor omissions and errors  
Adequate presentation of information  
Reasonable understanding of data  
Reasonable analysis

### **60-69% Grade A**

Few omissions and errors  
Good presentation of information  
Good understanding of data  
Some attempt at critical analysis/appraisal of subject

### **=>70% Grade A+**

No major omissions or errors  
Precise and clear presentation  
Excellent structure  
Thorough understanding of the scientific principles  
Original approach to analysis  
A comprehensive and critical coverage  
Logical deduction and conclusion

## **3. Oral presentations**

Clarity of presentation  
Contents of presentation  
Use of visual aids  
Depth of understanding of the topic presented  
Critical analysis /appraisal of the subject  
Response to questions

(Note that more detailed and specific guidance will be provided as appropriate for each assessment.)

## **Web-Based Library Research Project (PATHG004)**

Module Organiser:	Dr Brian de Souza
Deputy Module Organiser:	Professor Peter Delves
Start date:	November 2013
Deadline for submission:	12:00 noon Monday 3 <sup>rd</sup> March 2014
Content:	Student research
Assessment:	Submission of project (100%)

To contact the module organiser: [Brian.deSouza@lshtm.ac.uk](mailto:Brian.deSouza@lshtm.ac.uk)

### **Aim:**

To encourage an appreciation of the rapid developments that are taking place in the molecular biomedical field by surveying a topic of current interest.

### **Objectives:**

On completion the student will be able to:

- Undertake a survey of the current original literature
- Understand how to present the survey in a logical and acceptable manner
- Show an understanding of the significance of the literature survey

**The report should be a critical discussion of the original literature and should extract and compare relevant data from the literature or suitable databases to demonstrate an understanding of the biological aspects of the stated scientific problem. Ideally, the data extracted from publications should be originally analysed for making comparisons and for illustrating specific aspects of the findings.** The report should also include suggestions for further advancement of the topic.

### **General Information:**

This project is undertaken during four months of the MSc Molecular Medicine programme from November 2013 – February 2014. It is your responsibility, in consultation with your supervisor and the module organiser, to organise your time so that you are able to complete the project before the deadline of 12:00 noon Monday 3<sup>rd</sup> March 2014. The module organiser (Dr Brian de Souza) will provide a list of potential supervisors and topics before the module commences, and should be informed when you have arranged the project with the supervisor. A one page overview of the intended coverage should then be provided for the supervisor, with a copy given to the module organiser after the initial discussion with the project supervisor. This overview should form the basis for further discussions with your supervisor prior to commencing work on the project. It is expected that the student and supervisor will then meet 2-3 times during the writing process in order to assess progress. The supervisor should then check your final draft prior to submission.

With regard to writing up your project, the content must be your own work. The supervisor offers guidance as necessary and should read the work in its final format before it is submitted. It is advisable, of course, for the supervisor to see earlier drafts, but the student is ultimately responsible.

The project must be type written. Computer terminals are available in the cluster room in the Cruciform Building. The project should follow the style of reviews in the journal *Immunity* (freely available online from UCL computers [via the library website]) and be written in 12 point font with double line spacing. All pages must be numbered. **The maximum word count is 10,000 words**, excluding tables of contents, abstract, legends to figures, tables and references. A word count must be included.

Examples of previous projects which have been regarded as particularly well presented are available on the Module Moodle page ([www.ucl.ac.uk/moodle](http://www.ucl.ac.uk/moodle)). The examiners follow the

UCL guidelines on plagiarism: published or unpublished work of other persons must be clearly identified. (See notes on plagiarism elsewhere in this handbook.)

**The deadline for submission is 12 noon on Monday 3<sup>rd</sup> March 2014** Two printed copies of the projects should be handed in to the Programme Administrator, Ms Lauren Collins, Room 1.3.14, 1st floor, Cruciform Building, Gower Street, plus an identical electronic version uploaded on the PATHG004 Moodle site before the deadline.

**Late submission**

Standard UCL penalties (described elsewhere in this handbook) will apply.

**Assessment guidelines:**

The dissertation will be assessed on the following criteria:

content

critical discussion of the originally analysed and presented data

suggested further experiments or omitted experiments

**adherence to the requested format**

## **Laboratory-Based Research Project Module (PATHG099)**

Module Organiser:	Dr Richard Milne
Deputy Module Organiser:	Professor Peter Delves
Start date:	Tuesday 8 <sup>th</sup> April 2014
End date	Friday 25 <sup>th</sup> July 2014
Assessment:	Project report (90%), oral examination (10%)
Submission Deadline	1700 Wednesday 30 <sup>th</sup> July 2014
Oral examination:	Wednesday 6 <sup>th</sup> August 2014

To contact the module organiser: [richard.milne@ucl.ac.uk](mailto:richard.milne@ucl.ac.uk)

### **Aims:**

To enhance laboratory skills.

To develop the ability to interpret and critically evaluate data.

To present one's own scientific data as a research manuscript.

### **Objectives:**

On completion, students will have acquired the core skills necessary to undertake a research project and write up the results as a research manuscript. They will be familiar with experimental design, hypothesis generation, data presentation and analysis. More broadly, they will have gained insight into how research laboratories function and how research is conducted.

### **About the project:**

Arranging a project is the responsibility of the student. From the start of the Programme students will be encouraged to engage actively in the selection of their research topic. A list of some potential supervisors and projects will be provided but it is expected that most students will make their own arrangements under the guidance of the module organiser. Early contact with prospective project supervisors to secure lab space is encouraged. You may approach potential supervisors from within UCL or from another institution (subject to approval from the Module organiser). The module organiser should be kept informed by e.mail of your progress in arranging a project. A short abstract/outline (one page of A4) must be submitted by the end of the first week of the project.

It is expected that the student and supervisor will meet at regular intervals during the project in order to assess progress. The content of the project report must be your own work. The supervisor offers guidance as necessary and must read the work in its final format before it is submitted. It is advisable, of course, for the supervisor to see earlier drafts, but the student is ultimately responsible.

### **Guidelines for the project report:**

The project must be presented in 10 point ARIAL font with double line spacing. All pages must be numbered starting with the title page as page 1. **The report must not exceed 6500 words**, excluding the title page, summary, figure legends, tables and references. A word count for the summary and main body of the text must be included.

Examples of projects which have been regarded as particularly well presented are available in the Divisional Teaching Administrators office for you to examine during the course of the year. (Note that these may have been written following different presentation guidelines.)

The examiners follow the UCL guidelines on plagiarism: published or unpublished work of other persons must be clearly identified. (See notes on plagiarism elsewhere in this handbook).

The project report should contain the following sections:

**Title page:** lists the project title, your name, your supervisors name, the project and summary word counts.

**Summary.** (200 word maximum) This must state the aims of the work, including sufficient background information for the reader to understand them. The key results should then be described, placing them in a broad context and emphasising their significance.

**Introduction:** containing a description of the problem under investigation and placing it in context with a brief survey of existing literature on the subject.

**Results:** presents and collates the data as well as appropriate analysis of the data in the form of display items (figures and tables) with accompanying text. A maximum of 7 display items are permitted.

**Figures and Tables:** Each Figure should be on a separate page with its corresponding figure legend below. This legend should include the figure number followed by a short title and a brief explanation of the experiment that provides sufficient detail for the reader to understand the data without reference to the text. Methods described in detail in the Experimental procedures section should not be repeated in the legend. Symbols used in the figure must be explained. Each legend must specify the number of times each experiment was independently performed and, if appropriate, the statistical tests used. Tables do not require legends, although these can be provided if necessary for clarity. Footnotes may be used to provide detail about calculations used to generate the data shown, units used etc.

**Discussion:** Provides a critical analysis, interpretation and explanation of the results and places them in a broader context. Addresses questions that are raised and suggests how they might be answered. Enriches, but does not duplicate the Introduction and the Results sections.

**Experimental procedures:** describes the materials and methods used in the project in sufficient detail for the reader to understand how the work was carried out.

**Acknowledgements:** Any contributions by others should be explicitly acknowledged in this section.

**References:** References should be cited in the text thus: when there is only one author (Milne, 2010), when there are two authors (Milne and Delves, 2010) when there are three or more authors (Milne *et al.*, 2010).

Full details of each cited reference should be provided in a list (alphabetical by surname of first author) placed after the experimental procedures section. All authors of a paper should be included unless there are more than 10 in which case list the first 10 and then say “*et al.*”. Each reference should be listed using the following style:

Milne, RSB, Smith, JH, Brown, RT and Delves P. (2010). Studies of the replication of herpesviruses. *Journal of Virology* **74**; 2056-2060.

**Time allowed:**

16 weeks (at 40 hours per week) for work in the laboratory, with an extra 17<sup>th</sup> week for completing the final draft for submission.

Start date for laboratory work: Tuesday 8<sup>th</sup> April 2014

End date for laboratory work: Friday 25<sup>th</sup> July 2014

Deadline for submission: 1700 Wednesday 30<sup>th</sup> July 2014.

Oral examination date: Wednesday 6<sup>th</sup> August 2014

The time scale after project submission is purposefully very tight in order to minimise the time between your completion of the project and the oral examination.

**Submission:**

**YOU MUST SUBMIT FOUR BOUND COPIES AND ONE ELECTRONIC COPY OF YOUR PROJECT.**

**The printed copies** should be handed in to the Programme Administrator, Ms Lauren Collins

Room 1.3.14,  
First Floor, Cruciform Building  
Gower Street, London, WC1E 6BT

Tel: 020 3108 2116 (internal: 52116)

**The electronic copy** must be uploaded on the PATHG099 Moodle site before the deadline.

**Assessment:**

**Weighting**

The mark for the written report constitutes 90% of the final mark and will be assessed on the following:

The mark for the oral examination constitutes 10% of the final mark

**Report marking criteria**

**<40%. Grade D**

inadequate and inappropriate information  
numerous major and minor omissions and errors  
incomprehensible presentation  
inadequate discussion on information presented  
references not cited in the text  
incomplete reference list

**40-49%. Grade C**

inadequate literature survey  
major and/or minor omissions and errors  
poor and confusing presentation  
inadequate discussion of data  
references not cited in the text  
incomplete reference list

**50-59%. Grade B**

adequate literature survey  
some major omissions and errors  
informative to coherent presentation

adequate discussion of the data presented  
some suggestions of future directions

**60-69%. Grade A**

adequate literature survey  
some minor omissions and errors  
informative to coherent presentation  
good discussion of the data presented  
some suggestions of future directions

**=>70%. Grade A+**

thorough literature survey with no major omissions and errors  
comprehensive and logical presentation  
critical discussion and deduction  
intelligent suggestion of future directions

**Oral examination:**

You will be examined on your project by internal and external examiners for 20 minutes. You will be expected to give a brief summary of your project work to encapsulate the research questions and major findings and to be able to answer detailed questions about the background, scientific and methodological rationale, interpretation of results and future work relating to your project. The discussion may broaden to cover any aspect of the Programme content.

**Late submission:**

If a Laboratory-Based Research Project is not submitted on time and there are no approved extenuating circumstances, the student will be deemed not to have completed the MSc programme. In such circumstances, and at the discretion of the Programme Director, the project may be eligible for resubmission in the next academic session. This would require the student to return to London for oral examination the next academic year. Alternatively the student can elect to be awarded the Diploma in Molecular Medicine which requires an accumulated total of 120 credits (Introductory Module, Data Interpretation Module, Molecular Basis of Disease Module, Core Laboratory Practicals Module, 2 Specialised Modules and Library-Based Research Project).

**Failing a practical project:**

If a student fails to reach the pass mark, depending on how badly she/he fails and why, the Board of Examiners will make a decision as to whether the student must resubmit the project next academic session with or without the need for further experimental work or make minor amendments to the write-up within one month.

### **Programme Evaluation**

The quality of the MSc Molecular Medicine Programme is monitored by the following procedures:

#### **Board of Examiners 2013 – 2014**

Dr Richard Milne (**Chair**)  
Professor Peter Delves (**Deputy Chair**)  
Professor John Sinclair – University of Cambridge (**External Examiner**)  
Professor Benny Chain  
Dr Bambos Charalambous  
Dr Brian de Souza  
Professor John Hartley  
Professor Timothy McHugh  
Dr Milica Vukmanovic-Stejic  
Dr Steven Howe

#### **MSc Programme Working Committee 2013 – 2014**

Dr Richard Milne (**Chair**)  
Professor Peter Delves (**Deputy Chair**)  
Professor Benny Chain  
Dr Bambos Charalambous  
Dr Brian de Souza  
Professor John Hartley  
Professor Timothy McHugh  
Dr Milica Vukmanovic-Stejic  
Dr Howe, Steven

#### **Student-Staff Consultative Committee**

Teaching staff meet all students once a year and meet with two class representatives twice during the academic year to discuss issues related to the programme. Matters raised are reported to the programme working committee where appropriate decisions are made and acted upon.

#### **Faculty Post-Graduate Research Committee**

The Programme Director is responsible for liaising with and reporting to the Faculty Graduate and Research Committee on matters arising from the MSc Molecular Medicine Programme, Board of Examiners, Programme Working Committee and Student-Staff Consultative Committee.

#### **Student Questionnaires**

Anonymous questionnaires are supplied to students for each module. All replies are filed in the Division of Infection & Immunity for inspection. A summary of the response is prepared by the Programme Organiser and reported to the Programme Working Committee. The teaching staff take your feedback very seriously and changes are often made in response to your views.

#### **Students' career development**

The Programme Director is keen to maintain contact with previous students to record their career development and to assess the success of the programme in attaining its objectives. After finishing the Programme students follow a variety of career paths, some common ones are: PhD student, Medical student, Clinical scientist, Research scientist, Dental student.

## **Other Important Information**

### **Graduate School**

[www.ucl.ac.uk/gradschool](http://www.ucl.ac.uk/gradschool) - contains useful information on academic regulations, graduate events, societies, and funding opportunities.

### **Libraries**

UCL Library Services offer students access to a variety of hard copy and electronic resources including books, journals, and inter-lending & document supply. There are several libraries based on the main Bloomsbury campus including the Main University and Science Libraries. The UCL Cruciform Library has undergone a substantial refurbishment during summer 2013 to create a modern attractive Hub to incorporate redesigned library, and areas for teaching, and group/quiet study. UCL students can also have access to many outside Libraries, including Senate House, Wellcome Library, British Library, Imperial College London and King's College London. For full details see <http://www.ucl.ac.uk/library/>

### **Bookshops**

The main University bookshop is Waterstones, on the corner of Malet Street and Torrington Place. Also nearby is Foyles on Charing Cross Road.

### **UCL Shop**

The UCL Shop is located in the basement of the Wilkins Building. It stocks a range of stationary, computer supplies as well as UCL branded clothing and souvenirs.

### **Career Services**

The University provides a Careers Service and a Careers Resource Library. The Careers Office is on the 4<sup>th</sup> floor of the ULU building, Malet Street (Tel: 020 7866 3600). There are occasional careers exhibitions through the year.

Further information is available via the website: [www.ucl.ac.uk/careers](http://www.ucl.ac.uk/careers)

### **Emergencies**

Dial 222 on any telephone in UCL buildings for assistance in any emergency (fire, accident, assault, intruders, etc).

### **Fire**

You should familiarise yourself with the instructions contained in the various Fire Notices and location of the Fire Escapes in the building.

### **Medical Services**

UCL runs a Health Centre for students registered at UCL, which includes an open clinic, a contraceptive clinic, dental unit, ophthalmic and nursing services. They provide a GP service for students at UCL Halls of Residence and for students who have no GP in London. The Health Centre is at 3 Gower Place, WC1. Tel: internal ext. 32803/37057 medical or 37186 dental. More details are available on the practice website:

[www.gowerplacepractice.nhs.uk](http://www.gowerplacepractice.nhs.uk)

The nearest Accident & Emergency department to UCL is located at University College London Hospital. The A&E department can be accessed from Grafton Way or Euston Road.

### **Counselling Service**

Some students experience problems at university that they feel unable to deal with on their own. Talking to a counsellor can enable you to develop a clearer understanding of your problems and to explore more effective ways of dealing with them. You can find information on UCL's confidential student counselling service at:

[www.ucl.ac.uk/student-psychological-services/](http://www.ucl.ac.uk/student-psychological-services/)

### **Health and Safety**

You will spend a lot of time in laboratories. It is your responsibility to ensure that you work safely in the laboratory. If at any time you are uncertain about what you should be doing: STOP and seek advice. You will receive a safety induction at the start of the PATHG018 Laboratory Practicals and you should also study the safety instructions in the lab manual.

You should liaise with your PATHG099 lab project supervisor to ensure that you receive an appropriate local safety induction before commencing work.

### **Identification**

When accessing the various UCL buildings you may be asked for ID. At UCL, enrolled students get issued with an ID card. You can also use your library card or student union card. You will also need to show your card for entrance to the UCL Union facilities after 7.00 pm.

### **Skills Development**

The UCL Graduate School runs various programmes for graduate students in skills development which you might want to take part in, time permitting.

<http://courses.grad.ucl.ac.uk/>

### **Special Needs**

UCL provides a Disability Coordinator:

<http://www.ucl.ac.uk/disability/>

The Dean of Students can advise students on legal, dispute and hardship matters relating to the University. There is also a tutor for women students. You should enquire at the Registry if you wish to contact any of these services.

**ULU/UCLU**

The University of London Union (ULU) building is in Malet Street. University College London Union (UCLU) is in Gordon Street. These are open to all students and contain eating, drinking and sports facilities, a Union shop, opticians, copyshop and various Advisory Offices. You will automatically be a member of the Union, where you can join sports, hobby and political societies if you wish.

**UCL Cultural Consultation Service**

The UCL CCS aims to enhance learning and teaching outcomes for students and staff facing cross-cultural and social conflicts.

<http://www.ucl.ac.uk/ccs/>