## Division of Infection & Immunity

# MSc Infection & Immunity

***"Translating fundamental ideas from cells to clinic"***

# Programme Handbook

## 2013-2014

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

UCL is one of the top ranking universities in the world for research in medical sciences and clinical medicine. The Division of Infection & Immunity (part of UCL Medical School) comprises the Research Department of Immunology and the Research Department of Infection. We conduct immunology, virology, microbiology and autoimmunity research across the Bloomsbury and Royal Free campuses. The Division has strong links with the Institute of Child Health (Great Ormond Street), the Institute of Ophthalmology, and the Eastman Dental Institute.
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 translate "Fundamental ideas from cells to clinic". The link between basic research and patients at UCL provides a unique research environment within the UK and world-wide.

We have collaborative research links within UCL and with institutions throughout the world, particularly in Africa with the world's largest clinical TB drug trial and research in respiratory infectious diseases. In addition the clinical infectious disease interface includes the University College and Royal Free Hospitals; the Eastman Dental Institute, the London School of Hygiene and Tropical Medicine; and Public Health England.

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

Bambos Charalambous, Programme Director
Tim McHugh, Deputy Programme Director
Isabel Lubeiro, Programme Administrator

How to contact us:

Dr Bambos M Charalambous
Tel: 020 7794 0500 Extension number: 35147
Email: b.charalambous@ucl.ac.uk

Ms Isabel Lubeiro
Tel: 020 3108 2133
Email: i.lubeiro@ucl.ac.uk

Prof Tim D McHugh
(If Bambos Charalambous and Isabel Lubeiro are not available)
Email: t.mchugh@ucl.ac.uk

## Key dates and holidays

**UCL term dates for academic year 2013-14:**

Term 1: Monday 23 September 2013 – Friday 13 December 2013.
Reading week (4 November – 8 November)
Term 2: Monday 13 January 2014 – Friday 28 March 2014.
Reading week (17 February – 21 February)
Term 3: Monday 28 April 2014 – Friday 13 June 2014

Students on full-time Taught Masters programmes study for a full calendar year. Therefore, students are expected to study beyond the end of the third term to prepare their research project in time for submission at the end of July.
Students on flexible learning should ensure that they make adequate provision for attending all the necessary teaching sessions prior to commencing the course.

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

**UCL closed:**

Christmas holidays: Saturday 21 December 2013 – Wed 1 January 2014.
Easter holidays: Thursday 17 April 2014 – Tuesday 22 April 2014.
Bank holidays:
Mon 5 May 2014
Mon 26 May 2014
Mon 25 Aug 2014

## Course outline

This is a 180 credit course. The programme consists of 8 modules (5 core + 3 optional) 15 credits each + research project (60 credits).
Each module contributes 15/180 x 100 = 8.33% and the research project is worth 60/180 x 100 = 33.33%
Credits are acquired on successful completion of modules. The pass mark is 50% in all modules.

**Term 1**

FOUR core 15 credit modules taught:

| Module name | Module code | Mode of Assessment |
|---|---|---|
| Laboratory Introduction to Basic Bacteriology | INIMG011 | 60% 4x practical write ups<br>40% presentation |
| Epidemiology | EPIDGS31 | 100% written exam |
| Molecular Virology | VIRLG001 | 80% written exam<br>20% essay |
| Immunology in Health and Disease | INIMG002 | 80% written exam<br>20% news & views articles |

## Term 2

Select THREE optional modules (15 credits each):

| Module name | Module code | Mode of Assessment |
|---|---|---|
| Microbial Pathogenesis<br>(T McHugh & B Charalambous) | PATHG013 | 70% library project (2,000 words)<br>30% paper critique (1,000 words) |
| Frontiers in Therapeutic development in Infection & Immunity<br>(T McHugh & B Charalambous) | INIMG022 | 70% library project (2,000 words)<br>30% paper critique (1,000 words) |
| Advanced Virology<br>(R Milne) | PATHG015 | 20% Journal presentation (15-20 min)<br>20% Data handling<br>60% written exam (2 h) |
| Biofilms in Health & Disease<br>(S Nair) | INIMG021 | 70% library project (2,000 words)<br>30% oral presentation (15-20min) |
| Introduction to and principles of medical Mycology (distance learning module<br>(C Kibbler) | MICRGM01 | 100% (2,000 Words essay) |
| Tropical Microbiology<br>(T McHugh & B Charalambous) | INIMG024 | 100% library project (2,000 words) |
| Infection & Immunodeficiency in Children<br>(M Bajaj-Elliott & N Klein) | INIMG023 | 85% library project (2-3,000 Words)<br>15% oral presentation (15-20 min) |
| HIV Frontiers from Research to Clinic<br>(Y Takeuchi) | INIMG012 | 100% library project (3,500 words) |
| Immunological Basis of Disease<br>(B De Souza) | PATHG014 | 20% oral presentation (15-20min)<br>80% written exam (2 h) |
| Infectious Diseases Epidemiology and Global Health Policy<br>Dr Rob Aldridge & Dr Nigel Field | CIHDG045 | 60% Group presentation (30 min)<br>30% Individual short poster<br>10% Structured student peer-review |

## Term 3

| Module name | Module code | Mode of Assessment |
|---|---|---|
| Experimental Design & Research Methods in Medical Microbiology | CMMGG013 (15 credits) | 100% data interpretation |
| Research Project | INIMG099 (60 credits) | 90% research dissertation (7,500 words)<br>10% project supervisor's report<br>Compulsory oral presentation and questions |

Please note that all the written assessment exercises should be submitted electronically via the MOODLE site NO LATER than the times and dates indicated.

## 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 teaching administrator, Isabel Lubeiro, (i.lubeiro@ucl.ac.uk)

b) enter the changes on PORTICO, the UCL Registry and Academic Services website at 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 comes up.

### 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.

### 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 your doctor and arrange for a course of the HBV vaccine.

You are not required to have HBV vaccine, 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.

## Your relationship with us: Personal Tutor, 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 Course 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

Attendance at all the timetabled sessions is COMPULSORY.

You are required by UCL to attend a minimum of 70% otherwise your marks may be withheld and you will not pass the course. 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.).

All students are required to report if they are away for more than three consecutive days. Please inform the Programme Administrator, Ms Isabel Lubeiro (i.lubeiro@ucl.ac.uk) or 020 3108 2133.

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 Isabel Lubeiro), the Programme Director (Dr Bambos M Charalambous) 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. You must also complete an extenuating circumstances form. 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.

## Introduction to the Programme

The Infection & Immunity MSc programme is offered by UCL to graduates with a degree in a scientific, veterinary or medical discipline, or suitable laboratory experience.
The programme is administered by the Division of Infection and Immunity.
Teaching is provided by members of the following Research Departments and Institutions:

- Research Department of Immunology
- Research Department of Infection (clinical & academic)
- Research Department of Cell and Developmental Biology
- Institute of Child Health
- Eastman Dental Institute

As well as invited guest speakers and external supervisors.

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

The MSc Infection & Immunity programme is available as a one year full-time and 2-5 years as a flexible study course.

Attendance to 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 will provide students with fundamental knowledge to enable an understanding of cutting-edge research into infection & immunity and how it translates into the patient clinic. There will also be the latest and ground breaking developments in molecular diagnosis, therapeutics and patient management. Students will be able to take various module diets that will lead to a specialty in Tropical Microbiology, Clinical Microbiology, Virology, or Immunology. Students will get a strong grounding in the various research methods and techniques used to study infectious disease and the immunology of the host.

### Objectives:

- To know about clinically relevant microbial pathogens covering epidemiology, pathogenesis and current and developing therapeutic strategies.
- To know about the host-pathogen interaction to include biofilms, immunity and inflammation.
- To know about the latest research in infectious diseases.
- To be able to describe the use of Lentiviruses in gene therapy.
- To understand the molecular methods for diagnosis of infectious agents, to determine burdens of disease, and monitor treatment outcome.

### Programme website

You will find important information and learning resources for the MSc Infection & Immunity on the Programme Virtual Learning Environment: www.ucl.ac.uk/moodle

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

Students will be expected to know the material presented in the lectures, tutorials and practical sessions. This includes the material in any references which are specified during the course. As graduate students you will also be expected to do some self-directed reading around the subject. Additional information is usually required to achieve a pass with distinction.

## 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.

Each module is assessed individually by a variety of methods that include written course work, oral presentations and unseen written examination. Details will be provided in each of the modules.

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.

The research project is assessed by the dissertation (90%) and the project supervisors report (10%).
**N.B.** There is no viva examination.
In order to be awarded the MSc Degree a student must achieve a pass***** in all modules.

*Students may be awarded a condonable mark 40-49% and it is up to the Board of Examiners to condone the mark to a pass. N.B. The mark is not increased. Only 20-25% of the course can be condoned (2 x 15 credit modules) provided the overall mark is 50% or greater.

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

All candidates are referred to by number rather than name wherever possible to maintain anonymity.
Following the Board of Examiners Meeting at the end of the course, 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) 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).

**Penalties for late Submission of Coursework**

1. The full allocated mark will be reduced by 5 percentage points for the first working day after the deadline for the submission of coursework.

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

3. Coursework that is submitted later than seven days after the deadline, providing it is submitted before by a date during term 3 defined in advance by the relevant Master's Board of Examiners for postgraduate taught programmes, will be recorded as zero but the assessment will be considered to be complete.

4. In the case of dissertations and project reports submitted more than seven days late, the mark will be recorded as zero but the assessment will be considered to be complete.

5. Where there are extenuating circumstances that have been recognised by the Board of Examiners or its representative, these penalties will not apply until the agreed extension period has been exceeded.

6. For permission to derogate from these penalties, an application should be made to the Chair of the UCL Board of Examiners through the relevant Faculty Tutor.

**Penalties for Over-length coursework including dissertations**

For submitted coursework, where a maximum word count has been specified, the following procedure will apply:

1. Assessed work should not exceed the prescribed word count.

2. Assessed work with a stated word count above the prescribed word count should not be accepted for submission (i.e it will not be date-stamped or otherwise recorded as formally submitted), but immediately returned to the student with instructions to reduce the word length. The work may then be resubmitted but the original deadline for submission still applies and penalties for late submission will be applied.

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

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

## Examinations

### General information

The examinations are set by the module organiser, checked by a second internal examiner and also by the External Examiner (from outside the College). 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 Infection & Immunity to the Faculty Graduate Board of Examiners. The Board of Examiners for the MSc in Infection & Immunity 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 Bambos M Charalambous) as soon as possible. Typical circumstances which might be taken into account are serious or prolonged illness, disability or bereavement. Documentation is normally required (e.g. 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 Course 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.

**Please note**

All submissions **regarding extenuating circumstances** must be submitted to the Programme administrator Isabel Lubeiro, on the standard form provided in the appendix of this handbook, at the time when, or immediately after, these circumstances arise.

### 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

**MSc Infection & Immunity**

This degree requires an accumulated total of 180 credits. All taught modules are 15 credits and the research project is 60 credits.

Each module contributes 15/180 x 100 = 8.33% and the research project is worth 60/180 x 100 = 33.33%

| | |
|---|---|
| Laboratory Introduction to Basic Bacteriology (INIMG011) | 15 credits |
| Epidemiology (EPIDGS31) | 15 credits |
| Molecular Virology (VIRLG001) | 15 credits |
| Immunology in Health and Disease (INIMG002) | 15 credits |
| Experimental Design & Research Methods in Medical Microbiology (CMMGG013) | 15 credits |
| Optional modules (3X15 credits) | 45 credits |
| Laboratory-Based Research Project | 60 credits |
| TOTAL | 180 credits |

**PG Diploma Infection & Immunity**

Requires an accumulated total of 120 credits (total of 8 modules: 4 core plus 4 optional)

**PG Certificate Infection & Immunity**
Requires an accumulated total of 60 credits (4 core modules, or by consultation with Programme Director alternative optional modules).

**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.

Rounding should be applied to obtain the integer marks, for example 64.4 is rounded to 64%, but 64.5 is rounded to 65%.
The rounding principles should also apply to borderline and distinctions decisions.

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!

**Continuing professional development (CPD) credits.**

All the modules in the programme are CPD accredited by the Institute of Biomedical Science. 15 credit modules are worth 50 CPD credits and the 60 credit research project is worth 100 CPD credits. At the end of the course you will be issued with a certificate giving the code and credits for the activity if you so request.

**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 Department 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 Department.

## 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 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 ghost-writing 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 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

### Core Modules

There are four core modules in term 1:

- Laboratory Introduction to Basic Bacteriology
- Epidemiology
- Molecular Virology
- Immunology in Health and Disease

Plus another core module in term 3 for MSc students undertaking a research project

- Experimental Design & Research Methods in Medical Microbiology

### Optional modules

THREE optional modules should be selected from the list of optional modules below:

- Tropical Microbiology
- Infection & Immunodeficiency in Children
- HIV Frontiers From Research to Clinic
- Immunological Basis of Disease
- Microbial Pathogenesis
- Biofilms in Health & disease
- Introduction & Principles of Medical Mycology
- Frontiers of Therapeutic Development in Infection & Immunity
- Advanced Virology
- Infectious Diseases Epidemiology and Global Health Policy

In order for you to make informed choices the aims and objectives of the specialism and optional modules are provided later in the handbook. If you require further information you can talk to the programme director, Bambos Charalambous or module leads.

**PLEASE NOTE** that the optional modules require a minimum number of students (usually four) to register in order for them to run. This could include students from other programmes of study.

### Research project

A laboratory-based or IT/data mining research project module. There is the possibility of undertaking the project in a developing country setting, or in the student's home country provided there is suitable academic supervision and facilities.

# Taught modules – Core Modules

See Term 1 timetable below with the 4 core modules.
Experimental Design & Research Methods in Medical Microbiology happens in the 3 term alongside the Research project.

**Term 1 Timetable : 23 Sept 2013 - 13 Dec 2013**

Week 5 (Monday 23 September) Induction week

Week 6 (Thursday 3 October) EPIDGS31 begins

Week 6 (Monday 30 September) VIRLG001, INIMG002 & INIMG011 begin.

| Time | Monday | Tuesday | Wednesday | Thursday | Friday |
|---|---|---|---|---|---|
| 0900-1100 | | VIRLG001 | INIMG002 | EPIDGS31 | |
| 1100-1300 | INIMG002 | | | EPIDGS31 | VIRLG001 |
| Lunch | | | | | |
| 1400-1700 | INIMG011 | | | EPIDGS31 | INIMG011 |

| | | | |
|---|---|---|---|
| Introduction to basic bacteriology (INIMG011) | Molecular Virology (VIRLG001) | Immunology in Health and Disease (INIMG002) | Epidemiology (EPIDGS31) |

Week 11 (4 - 8 Nov) is reading week.
EPIDGS31 Exam will be at the end of term in December.
INIMG002 & VIRLG001 Exams will be at beginning of January 2014.

## Laboratory introduction to basic bacteriology (INIMG011)

| | |
|---|---|
| Module Lead | Dr Bambos Charalambous |
| Start date | Friday 4 October 2013 |
| End date | Friday 13 December 2013 |
| Content | Laboratory practicals & Lectures |
| Formative Assessment | 1 practical write-up |
| Summative Assessment | Oral presentation (40%) + 4 practical write-ups (60%) |

**Mondays 1400 – 1600 and Fridays 1400 – 1700**

**Aim**
The module will be predominantly laboratory based and cover the basic principles of medical bacteriology; introduce translational research, and the latest developments in diagnosis and management of disease.

**Learning objectives**
On completion of the module the students will be able to:

- understand the systematics and epidemiology of bacterial infectious agents
- know the principle mechanisms of host-pathogen interactions and introduce the concept of bacterial communities as biofilms
- be familiar with the diagnosis and management of bacterial infections
- understand the strategies used for the discovery and introduction of new antibiotics
- describe novel technologies against hospital acquired infections

**Assessments/Exams:**

- Oral presentation with briefing document (250-500 word summary) (40%) **11.00-13.00, first week in Dec, 2013.**
- Five practical write-ups (@1000 words; 60%). The first practical is **FORMATIVE** (marked with feedback but is not counted towards the final module mark) to guide students as to what is expected. The remaining four practicals are **SUMMATIVE** and count towards the module mark.
- **DEADLINE** for submission **12 0'clock, Fri 13 Dec, 2014**.

## Epidemiology (EPIDGS31)

| | |
|---|---|
| Module Lead | Dr Eric Brunner |
| Module Deputy | Dr Hynek Pikhart |
| Start date | Thursday 3 October 2013 |
| End date | Thursday 12 December 2013 |
| Content | Laboratory practicals & Lectures |
| Formative Assessment | During the reading week |
| Summative Assessment | Exam (100%) MCQ + SAQ Dec 2013 |

**Thursdays: 0930 – 1230 and 1400 – 1700**

**Aim**
The overall aim of this module is provide students with a good knowledge of epidemiological concepts and methods, and to enable students to use this knowledge in solving tasks that are common in planning, conducting, analysing and interpreting medical and public health research.

In addition, for students in the MSc I&I course, the aim of this module is to introduce the basic concepts and methods of Infectious Disease Epidemiology and related research.

**Learning objectives**
Students should be able to:

- Describe the most common epidemiological concepts and methods.
- Use basic measures of frequency and measures of the effect.
- Identify the main types of study design and to describe their strength and weaknesses.
- Appreciate the errors and biases that may arise in different types of epidemiological studies.
- Apply these concepts and methods to practical examples and to students' research interests (some sessions / objectives differ by students' MSc course).
- Understand the interaction between biology, behaviour & environment in infectious disease transmission.
- Have an overview of methods, strengths and limitations of intervention studies in infectious diseases epidemiology.
- Appreciate the importance of surveillance of infectious diseases and the uses of data in health service planning & the promotion of health.

**Assessments/Exams:**

- Formative assessment in the reading week Date Time and location tbc
- Summative exam (100%) MCQ + SAQ Dec 2013 Time and location tbc

This module is compulsory for all students in MSc/Diploma Health and Society: Social Epidemiology, MSc Sexually Transmitted Infections and HIV, and MSc in Clinical and Experimental Medicine, MSc Dental Public Health, MSc Infection and Immunity. The module may also be attended by other postgraduate students from Division of Population Health. The module does not assume any previous knowledge of epidemiology.

## Molecular Virology (VIRLG001)

| | |
|---|---|
| Module Lead | Dr Yasu Takeuchi |
| Module Deputy | Dr Ari Fassati |
| Start date | Tuesday 1 October 2013 |
| End date | Friday 13 December 2013 |
| Content | Lectures |
| Summative Assessment | 2 1/4 hours Written exam (80%) in January 2014 + 2,000 words Essay (20%) |

**Tuesdays 09.00 – 11.00 and Fridays 11.00-13.00**

The aim of the course is to give the students an up to date insight into molecular virology, with particular focus on human pathogens and new research developments in the field.

Seven weeks of lectures and tutorials will examine the biology of Herpesviruses, Retroviruses including HIV, Hepatitis viruses, Human Papilloma viruses and Influenza viruses. The molecular aspects of virus replication will be put in context of disease pathogenesis and therapy. New emerging viruses and transmission of viruses from animals to humans will also be explored. Moreover, lectures will provide insight on how certain viruses cause cancer in humans and animals, on the molecular interactions between viruses and their hosts and how these have shaped virus evolution. Two lectures will be dedicated to anti-viral drugs and gene therapy using viral vectors. The course will cover the breath of immune responses to viral infections, both innate and acquired, and vaccination strategies.

The course lecturers and tutors are from the Department of Infection, the Department of Immunology, and the MRC Centre for Medical Molecular Virology. We also have guest lecturers from outside UCL to cover specific areas of expertise. The course lecturers and tutors are leading researchers in their particular fields.

A basic knowledge of microbiology, molecular, and cell biology is required. Students would benefit by refreshing their memories on the basics of each topic before the lectures by reading from 'Fundamentals of Molecular Virology' by Nicholas H. Acheson, and then reading one or two publications recommended by the lecturer and available on the Moodle VIRLG001 site.

In addition to the lectures, there will be two small group tutorials to help students assimilate new information on specific topics. Students will be asked to read one or two relevant papers and discuss them. These sessions will be likely to be held in November, group/date/time/venue to be announced in due course. Attendance of tutorials is **mandatory**.
Essay questions will be set towards the end of the course and the tutorials may support some of the essay questions.

Lectures will be provided on the Moodle website one or two days in advance. However please note that it may not always be possible to provide lectures in advance.

**Assessment:**
By the end of the course, students are expected to have acquired a good knowledge of molecular virology, in addition to any specialised reading recommended by individual lecturers.

2 1/4 hours Written exam (80%) in January 2014 + 2,000 words Essay (20%)

## Immunology in Health and Disease (INIMG002)

| | |
|---|---|
| Module Lead | Dr Brian de Souza |
| Module Deputy | Prof Peter Delves |
| Start date | Monday 30 September 2013 |
| End date | Friday 13 December 2013 |
| Content | Lectures |
| Summative Assessment | 2 hour exam (80%) in early January + News and Views Articles (20%) |

**Mondays 11.00 – 13.00 and Wednesdays 9.00 – 11.00**

**Aims of Course:**

Immunology in Health and Disease provides an overview of the subject, starting at the molecular level (e.g. antigen recognition, antibody diversity), outlining what is known about cellular interactions within the immune system (e.g. cytokines and immunoregulation) and concluding with a consideration of the role of the immune system in host defence, its role in disease, and its possible role in determining ecology and evolution of the species. The course will develop from a basic to a more in depth understanding, including recent research developments. In the practical sessions the aim is to give students the opportunity to gain experience of some of the major general methodologies that are used in the immunology laboratory. The emphasis is on current developments in this fast moving field, and the lectures are supported by an up-to-date bibliography to recent immunology articles, as well as web-based pictorial material.

**Assessment MSc Infection and Immunity Students**

1. There will be a 2 hour unseen written examination (beginning of January) that accounts for 80% of the marks. It will consist of:
   i. *Two* essay questions (from a choice of four).
   ii. *Three* short answer questions (from a choice of six).

2. News and Views Articles (20%):

Two relevant papers will be distributed. The references for these articles will be provided and photocopies of these articles will have been prepared. In addition, to view colour images and/or supplementary material, the relevant websites will be provided.

You are expected to choose **one** of these articles, and study it in detail. Then you are expected to write a review of the article, explaining the context in which the work was done, summarising it briefly, and placing it in a broader perspective.

To get an idea of what is required, you should look at the combination of paper plus “news and views” that appears in Nature each week, or the similar feature that appears in Science. News and Views should not exceed 1000 words. Articles longer than 1000 words will be penalised.

The News and Views Articles will be distributed via the MOODLE site

**Plagiarism:**
Direct quotations must be in quotation marks and a detailed reference given. Similarly diagrams taken directly from a textbook must be given a detailed reference. A list of the textbooks and sources you have used in preparing an essay should be given. Essays and other work must be in your own words. It is not sufficient to copy out paragraphs or sentences from textbooks making the occasional word change. Another aspect of plagiarism is copying another student's work. Interaction and discussion are part of scholarship. At the end of the day the work you present for marking must be your own. You should not plagiarise yourself either! Work submitted for marking should not be recycled as another assignment. Plagiarism always attracts a penalty. Sometimes marks are subtracted or a zero mark given. In more serious cases an official reprimand may be made or the matter considered as an Examinations Offence which could lead to your being excluded from all examinations.

**Recommended Textbook:**

Murphy, K.B, Travers, P., and Walport M. Janeway's Immunobiology: The Immune System in Health and Disease. 7th edition, pub Garland Science, 2007. The 8th edition is published this August.

Kindt, Goldsby and Osborne Kuby's Immunology. WH Freeman and co 6th edition. 2006. See also associated web site: http://www.whfreeman.com/Kuby.

## Experimental design & research methods in Medical Microbiology (CMMGG013)

| | |
|---|---|
| Module Lead | Prof Tim McHugh |
| Module Deputy | Dr Bambos M Charalambous |
| Start date | May 2014 |
| End date | July 2014 |
| Content | Online course |
| Summative Assessment | Data Interpretation (100%) |

**Aim**
This is a distance learning module that will provide an introduction to the theory and skills required for the successful completion of research in biomedical science.

**Learning objectives**
On completion of the module the student will:

- Be familiar with the requirements for the ethical design of a research project in clinical research
- Be able to identify the appropriate statistical tool for an experimental design and be familiar with the software resources for data management
- Be able to evaluate and select appropriate laboratory tools to test a hypothesis
- Be familiar with the requirements of clinical trial design in the context of both drug and diagnostic test evaluation

**Assessment:**
Data analysis exercise (100%)

**Reading lists for core modules** can be found at:

http://readinglists.ucl.ac.uk/lists/42C1BCDB-A421-3222-BAF0-39CF8F745FBC.html

## Taught Modules – Optional Modules

The MSc Infection & Immunity programme provides a framework for the organisation of optional modules. The running of the individual optional modules remains the sole responsibility of the optional module organisers. As the optional modules vary in structure (in both teaching delivery and assessment methods), students are strongly advised to discuss details of optional modules with respective organisers. THREE optional modules should be selected. All optional modules will be run to the common block timetable as determined by UCL. These modules will be taught in the second term of the academic year.

**NB.** The optional modules require a minimum number of students (usually four) to register in order for them to run.

| | Monday | Tuesday | Wednesday | Thursday | Friday |
|---|---|---|---|---|---|
| 09.00 – 11.00 | PATHG013 Microbial Pathogenesis | | PATHG015 Advanced Virology | INIMG012 HIV frontiers from research to clinic | PATHG014 Immunological Basis of Disease |
| | | | | INIMG022 Frontiers in Therapeutic development in Infection & Immunity | |
| | | | INIMG023 Infection & Immunodeficiency in children | INIMG021 Biofilms in Health & Disease | INIMG024 Tropical Microbiology |
| 11.00 – 13.00 | PATHG015 Advanced Virology | INIMG012 HIV frontiers from research to clinic | PATHG014 Immunological Basis of Disease | PATHG013 Microbial Pathogenesis | |
| | | INIMG022Frontiers in Therapeutic development in Infection & Immunity | | | |
| | INIMG023 Infection & Immunodeficiency in children | INIMG021 Biofilms in Health & Disease | INIMG024 Tropical Microbiology | | |

### Tropical Microbiology (INIMG024)

| | |
|---|---|
| Module Lead | Prof Tim McHugh |
| Module Deputy | Dr Bambos Charalambous |
| Start date | Friday 31 January 2014 |
| End date | Friday 28 March 2014 |
| Content | Lectures |
| Summative Assessment | Library project (100%) |

**Wednesdays 1100 – 1300 and Fridays 0900 – 1100**

**Aim**
To describe the major infectious agents (bacteria, virus, and parasites) with emphasis on tropical infections to include examples of protozoa, e.g. plasmodium, toxoplasma, trypanosomes, helminths (worms), e.g. nematodes, flat worms, bacteria, e.g. TB, and viruses, e.g. HIV, Ebola. The epidemiology, pathogenesis, diagnosis and patient management will be covered. Cutting edge translational research and the latest developments in diagnosis and management of disease will be introduced.

**Learning objectives**
At the completion of the module the student will understand:

- the epidemiology of infectious agents
- transmission
- host-pathogen interactions including the modulation of the immune system
- diagnosis and management of infectious disease
- infection control: community and resource poor settings
- ethical issues in clinical research

**Assessment/exams:**
Library project (100%)

## Infection & Immunodeficiency in Children (INIMG023)

| | |
|---|---|
| Module Lead | Dr Mona Bajaj-Elliott |
| Module Deputy | Prof Nigel Klein |
| Start date | Monday 13 January 2014 |
| End date | Friday 28 March 2014 |
| Content | Lectures |
| Summative Assessment | Library project 2-3,000 words (85%) + Oral presentation (15%) |

**Mondays 1100 – 1300 and Wednesdays 0900 – 1100**

**Aim**
This module will provide an overview of congenital and acquired immunodeficiency, infections in healthy and immunocompromised children, modern treatments of immunodeficiencies, including gene therapy and new developments in antimicrobial therapy.

**Learning objectives**
At the completion of the module the student will have knowledge of:

- congenital and acquired immunodeficiency in children
- infections in healthy and immunocompromised children
- infectious disease and immunodeficiency in children
- current methods for the treatment of infections and immunodeficiency in children

**Assessment/exams:**

- Library project 2-3,000 words (85%)
- Oral presentation (15%)

## HIV frontiers from research to clinic (INIMG012)

| | |
|---|---|
| Module Lead | Dr Yasu Takeuchi |
| Module Deputy | Dr Maddy Noursadeghi |
| Start date | Tuesday 14 January 2014 |
| End date | Friday 28 March 2014 |
| Content | Lectures |
| Summative Assessment | Library project (100%) |

**Tuesdays 1000 – 1200 (some or all lectures may take place 9:30-11:30, tba) and Thursdays 0900 – 1100**

**Aim**
To gain, current, in-depth knowledge of HIV molecular biology, and its application in medicine.

**Learning objectives**
At the completion of the module the student will:

- gain an in-depth understanding of HIV biology by exploring virus-host cell interaction
- gain knowledge of infection history and pathogenesis of HIV in both cell and systemic levels
- acquire up-to-date knowledge on the approaches and progress made in the development of HIV prevention and therapy
- acquire an understanding of the main principles of the clinical management of HIV infection

**Assessment/exams:**
Library project (100%).

## Immunological Basis of Disease (PATHG014 / PATHM014)

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

**Wednesdays: 1100 – 1300 and Fridays 0900 – 1300**

**Aim**
To allow students to explore the cellular and molecular basis of situations in which the immune system either over-reacts or under-reacts 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.

**Summative assessment/exam:**

- Research paper presentation (20% of final mark for module)
- Unseen written exam (80% of final mark for module)

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

## Microbial Pathogenesis (PATHG013)

| | |
|---|---|
| Module Lead | Dr Bambos Charalambous |
| Module Deputy | Prof Tim McHugh |
| Start date | Monday 13 January 2014 |
| End Date | Thursday 27 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%) |

**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 3rd year undergraduate course.

## Advanced Virology (PATHG015)

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

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

The module is centred on the idea that an understanding of basic virology is essential for understanding viral disease.

The module includes two types of lectures: those covering broad concepts: virus replication, virus entry, immune evasion, virus assembly; and those covering clinically important viruses or virus families. All teaching draws on recent papers to provide a state-of-the-art insight.

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.

The core of the module is shared with other MSc and with BSc students.

Module Contents:

Lectures: 36 hours of lecture/tutorial
Shared teaching:

Taught sessions of this module are shared with iBSc, BSc and MSc students on other programmes.

## Frontiers of therapeutic development in Infection & Immunity (INIMG022)

| | |
|---|---|
| Module Lead | Dr Bambos Charalambous |
| Start date | Monday 13 January 2014 |
| End Date | Thursday 27 March 2014 |
| Content | Lectures |
| Summative assessment | A library project (70%) and paper critique (30%) |

**Tuesdays 1100 – 1300 and Thursdays 0900 – 1100**

**Aim**
The module will cover the development pipeline from bench to bedside for therapeutics. The scientific, practical, and clinical issues related to therapeutic development will be explored.

**Objectives**
To understand:
- Molecular design
- Regulatory & ethics approval
- Regulatory compliance and GMP production
- Product formulation
- Antibiotic/antiviral development pathway
- Medicinal chemistry
- Microbial physiology and rational drug design
- Models for *in vitro* testing
- Drug activity assays
- Antimicrobial toxicity

**Assessment/exams:**
- Library project (70%)
- Paper critique (30%).

## Biofilms in health & disease (INIMG021)

| | |
|---|---|
| Module Lead | Dr Sean Nair |
| Start date | Monday 13 January 2014 |
| End Date | Thursday 27 March 2014 |
| Content | Lectures |
| Summative assessment | A library project (70%) and oral presentation & briefing document (30%) |

**Tuesdays 1100 – 1300 and Thursdays 0900 – 1100**

**Aim**
This module will describe the major features of complex bacterial communities known as biofilms and their relevance to medical microbiology. It will introduce cutting edge translational research, the latest developments in the management of infectious diseases, and novel therapeutic platforms in the future.

**Objectives**
Knowledge of:
- the mechanisms involved in biofilm formation
- biofilm structure and ecology
- the physiology of biofilm-grown microbes
- how the biofilm mode of growth affects gene expression
- how the biofilm mode of growth affects the antimicrobial susceptibility of the constituent organisms
- current and future means of preventing and treating biofilm-associated infections
- quorum sensing mechanisms operating in biofilms
- the various laboratory models used to study biofilm behaviour

**Assessment/exams:**

- Library project (70%)
- Oral presentation with briefing document (30%).

## Introduction to & principles of Medical Mycology (MICRGM01)

| | |
|---|---|
| Module Lead | Prof Chris Kibbler |
| Start date | January 2014 |
| End date | March 2014 |
| Content | Online course |
| Summative Assessment | 2,000 words Essay (100%) |

**Aim**

This module forms a basic introduction to the principles of fungi and fungal infection. It introduces the concept of fungal taxonomy and identification, characteristics of fungal growth, fungal pathogenicity, and fungal infection and its diagnosis and treatment.

**Objectives**

- To introduce the student to fungi and fungal taxonomy, fungal infection, the characteristics of fungal growth, fungal pathogenicity and pre-disposing factors.
- To describe the changing spectrum of fungal infection.
- To describe the diagnosis of fungal infection; specimen collection; direct examination and culture; serological and molecular diagnosis; histological diagnosis; taxonomy and identification of fungal pathogens.
- Laboratory safety and safe handling of specimens, preservation and storage of fungi will be introduced.
- Introduction to principles and practice of antifungal therapy.

**Assessment/exams:**

2,000 words essay (100%)

## Infectious Diseases Epidemiology and Global Health Policy (CIHDG045)

| | |
|---|---|
| Module Leads | Dr Rob Aldridge & Dr Nigel Field |
| Start date | 24 February 2014 |
| End date | 14 March 2014 |
| Content | Lectures |
| Summative Assessment | Group presentation + poster |

**Aim**

The **infectious diseases epidemiology and global health policy module** will introduce students to key scientific concepts within the field of infectious disease epidemiology, with a practical focus on how these concepts inform evidence-based policy at a global health level. The course will cover core concepts, including factors influencing transmission dynamics, vaccine epidemiology, basic molecular epidemiology and the impact of underlying structural and political factors. Students will be asked to critically appraise examples of policy and the underlying scientific evidence. At the end of the course, students will have a good working knowledge of applied epidemiology for global infectious disease control.

By the end of the module students should be able to:

1. Describe the key elements of pathogen transmission dynamics and measuring infectiousness
2. Describe the most common study designs used within infectious disease epidemiology, including surveillance
3. Articulate a basic understanding of the role of genomics and molecular epidemiology for infectious diseases, covering surveillance and transmission

4. Outline the epidemiology of at least one major vaccine preventable disease and describe some of the key difficulties in implementing immunisation programmes
5. Describe how modelling can be used to predict spread of infections within a population
6. Outline the epidemiology of major global infectious diseases, their associated underlying causes, and how these are linked to control efforts
7. Critically evaluate the range of policy responses to control of infectious diseases

**Assessment pattern:**
1. Group presentation (30 mins) worth 60% of the final mark;
2. Individual short poster describing role and contribution to the presentation (A3 poster, maximum 250 words & 2 figures/ tables) worth 30% of the final mark;
3. Structured student peer-review worth 10% of the final mark.

## Taught Modules – Assessment guidelines

**Written examination format**
All written examination papers are divided into sections. Students answer appropriate number of questions from each section. Past papers are available on the MOODLE website.

**Weighting**
The marking system for each module varies and you should refer to details of each module.

**Marks and grades**
For the masters, diploma and certificate courses a fail, pass, or distinction is awarded.

<40% Fail

40-49% *Condonable

50-59% Pass

60-69% Pass

≥ 70% Pass with distinction

* It is possible, and entirely at their discretion, for individual Boards of Examiners to condone 20-25% of the taught components of the masters (excluding the research project) which is the equivalent to 2 taught modules, as long as the overall marks are 50% or more.

Please note that where the module is assessed by more than one mode the overall mark is taken. If one mode is failed (exam or course work) but the overall mark is a pass then a resit or resubmission is <u>not</u> necessary.

**Essays for written examination and continuous assessment**

**<40%**
- major errors of fact and no concepts
- major omissions
- no discernible essay structure inadequate references and very poor discussion of future research directions

**40-49%**
- significant errors of fact and concepts
- significant omissions
- poorly discernible essay structure
- inadequate references and poor discussion of future research directions
- several errors/omissions in fact and concepts
- essay poorly structured and referenced

- minimal discursive element
- future research direction barely dealt with

**50-59%**

- some errors in fact and concept
- some omissions in facts
- reasonable discussion of future research directions
- essay adequately structured
- reasonable referenced

**60-69%**

- few errors in fact but some in concepts or some omissions
- *less well structured and researched than A as reflected in the literature survey and discussion
- future research directions showing less thought and input than A

**≥70%**

- no errors/omissions in facts or concepts
- well-structured and researched
- *up-to-date literature survey which is incorporated in the text and as a discursive element in the conclusions
- possible future directions together with their scientific and socio-economic problems clearly thought through and written
- an essay which introduces and leads the reader through the subject

*criteria applicable only to essays submitted for continuous assessment,
i.e. not expected in a written examination

**Answers to problem-solving (data analysis) in written examinations**

**<40%**

- numerous major and minor omissions and errors
- inadequate data content
- inadequate understanding of data
- very poor presentation

**40-49%**

- major and minor omissions and errors
- inadequate data content
- poor understanding of data
- confusing presentation

**50-59%**

- some major and/or minor omissions and errors
- adequate presentation of information
- reasonable understanding of data

**60-69%**

- few major and/or minor omissions and errors
- good presentation of information
- good understanding of data

**≥70%**

- no major omission or errors
- precise and clear presentation
- a thorough understanding of the scientific principles
- a comprehensive and critical answer
- logical deduction and conclusion

**Laboratory reports for continuous assessment**

**<40%**

- numerous major omissions and errors in literature cited
- failure to obtain and/or interpret experimental data
- irrelevant discussion
- wrong conclusion

**40-49%**

- major and minor omissions and errors
- inadequate data content
- poor understanding of data
- confusing presentation

**50-59%**

- some major and/or minor omissions and errors in literature cited
- adequate ability to design experimental protocol
- reasonable technical competence
- adequate evaluation of data
- adequate interpretation of data
- few suggestions of future directions

**60-69%**

- few major and/or minor omissions and errors in literature cited
- adequate ability to design experimental protocol
- technical competence
- good evaluation of data
- good interpretation of data
- some suggestions of future directions

**≥70%**

- a logical and comprehensive presentation of current literature
- ability to design good experimental protocol technical competence
- critical evaluation of data
- critical interpretation of data
- intelligent suggestions of future directions

**Oral presentation**

Talks will usually be assessed according to the following criteria and weighting:

- Content (25%)
- Organization of information (25%)
- Slides (25%)
- Clarity (20%)
- Handouts (5%)

# Laboratory or Library/IT -Based Research Project Module: INIMG099

| | |
|---|---|
| Module Lead | Dr Bambos Charalambous + Project Supervisor |
| Start date | April 2014 |
| End date | July 2014 |
| Summative Assessment | Project dissertation (90%) & Supervisor report (10%) |

**Aim**
To enhance research skills, and for the student to develop the ability to interpret, evaluate and present one's own scientific data in a format of a research manuscript.

**Objectives**
On completion, the student will be able to undertake a research project that can be laboratory or library based, and presents this in the standard format and length expected and will have developed an appreciation of the research techniques required.

**Assessment:**

- Project dissertation (90%)
- Supervisor's report (10%)
- Oral presentation (compulsory but carries no marks).

**About the project**

The Programme Director (BMC) will provide a list of some potential supervisors/co-supervisors and research topics before the module commences, and should be informed when you have arranged the project with the project supervisor.

In addition, the students may seek a suitable project within UCL and overseas, provided suitable references and supervision are obtained.

Students should provide the course organiser a small abstract/outline of the project (one page of A4) in the first week of the project. It is expected that the student and supervisor or co-supervisor if overseas, will then meet at regular intervals during the project in order to assess progress. The supervisor will also check drafts of your project. The supervisor should then check your final draft prior to submission. **The discussion section should be entirely your own work with no input from your supervisor.** With regard to writing up your project, the content 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.

**Guideline for what is expected of a Library or IT based project**

The theoretical research project should be a "data mining" exercise where you extract and compare relevant data from the primary literature or suitable databases to show an understanding of the biological aspects of the stated scientific problem. The findings should be critically evaluated, analysed and presented as original reconstructed figures or tables in your write up, which should also include suggestions for further advancement of the topic.
This should consist of a:

- **Summary:** An abstract (not more than 250 words) which must be self-explanatory without reference to the text.
- **Introduction:** containing a description of the problem under investigation and a brief survey of existing literature on the subject.
- **Experimental/analytical procedures:** Include a description of the methods used. Where a method has been previously published only a brief description and the reference is needed.
- **Results:** The collation and summary of the data/observations in the form of figures and tables with accompanying explanatory text. If, in addition to the figures and tables presented in the

Results section, it is desired to include any of the original data then this should be added as an appendix.

- **Discussion:** This should summarise the findings without repeating the results, and place the findings into context with published material (where appropriate) that is presented in the introduction.
- The project must be type written. The project should be written in Times Roman 12 point font with double line spacing. All pages must be numbered. **The word count is 7,500.** excluding tables of contents, abstract, legends to figures, tables and references. The word count for the abstract and the main body of the text MUST be included.
- The examiners follow the UCL guidelines on plagiarism: published or unpublished work of other persons must be clearly identified. (See notes on plagiarism in the *Information for Life Science Students* handbook).

**Guidelines for the laboratory-based project write-up**

- The project should be written as a research manuscript for submission to *Infection & Immunity* (freely available online from UCL computers [via the library website]).
- It should consist of a:
  - **Summary:** An abstract (not more than 250 words) which must be self-explanatory without reference to the text.
  - **Introduction:** containing a description of the problem under investigation and a brief survey of existing literature on the subject.
  - **Experimental procedures:** Include description of the methods used. Where a method has been previously published only a brief description and the reference is needed.
  - **Results:** The collation and summary of the data/observations in the form of figures and tables with accompanying explanatory text. If, in addition to the figures and tables presented in the Results section, it is desired to include any of the original data then this should be added as an appendix.
  - **Discussion:** This should summarise the findings without repeating the results, and place the findings into context with published material (where appropriate) that is presented in the introduction.
- The project must be type written. The project should be written in Times Roman 12 point font with double line spacing. All pages must be numbered. **The word count is 7,500** excluding tables of contents, abstract, legends to figures, tables and references. The word count for the abstract and the main body of the text MUST be included.
- The examiners follow the UCL guidelines on plagiarism: published or unpublished work of other persons must be clearly identified. (See notes on plagiarism in the *Information for Life Science Students* handbook).

**Time allowed**

10 weeks (at 40 hours per week) for research, with the last two weeks for completing the final draft for submission.

**Please note** that part time/flexible students are expected to submit their dissertation in the **SAME** academic year that they register to undertake this module.

**Start and end dates:**

**Start: April, 2014**

**DEADLINE** for submission **July, 2014**

**Late submission of the project without prior permission from the Programme Director, BM Charalambous, or mitigating circumstances will incur an automatic penalty. See below under late submission for detailed information.**
**N.B.** There is no guarantee that work handed in late will be accepted.

**Submission process**

An electronic copy of the projects should be submitted **NO LATER THAN THE DEADLINE** via the MOODLE site for scrutiny by TURNITIN.

**Two printed copies** should be handed in to the Programme Administrator, Ms Isabel Lubeiro at
Room 1.3.12, First Floor, Cruciform Building, Gower Street, London, WC1E 6BT
Tel: 020 3108 2133 (internal: 52133)
You cannot access the office directly as it is behind a card access security door. Please use the phone on the first floor landing to call Isabel (ext. 52133) when you deliver your project.

Please note that you are at liberty to submit your dissertation to TURNITIN prior to the formal submission. If you have any difficulties please contact Ms Isabel Lubeiro (i.lubeiro@ucl.ac.uk).

**Assessment guidelines**

**Weighting**
The dissertation will constitute 90% of the final mark and will be assessed on the following:

- content
- understanding
- insight into the subject discussed
- adherence to the requested format

The supervisor's report will constitute 10% of the final mark and will indicate the complexity of the project and the level support provided by the supervisor.

**Dissertation marking criteria**

**<40%. Fail**

- 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%. Fail**

- 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%. Pass**

- 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%. Pass (at least 65% is required for a MERIT award)**

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

**≥70%. Pass with distinction**

- thorough literature survey with no major omissions and errors
- comprehensive and logical presentation
- critical discussion and deduction

- intelligent suggestion of future directions

**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.

**Results**

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!

**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.

## Programme Evaluation

The quality of the MSc Infection & Immunity Programme is monitored by the following procedures:

**Board of Examiners of MSc in Infection & Immunity**
Dr Bambos Charalambous **(Chair)**
Prof Tim McHugh **(Deputy Chair)**
Professor Aras Kadioglu **(External Examiner)**
Dr Christopher Kibbler
Prof Peter Delves
Dr Brian de Souza
Prof Nigel Klein
Dr Mona Bajaj-Elliot
Dr Sean Nair
Dr Y Takeuchi
Dr R Milne
Dr Eric Brunner
Dr Hynek Pikhart
Ms Isabel Lubeiro (Teaching Administrator)

**MSc in Infection & Immunity Programme Working Committee**
Dr Bambos Charalambous **(Chair)**
Prof Tim McHugh **(Deputy Chair)**
Dr Christopher Kibbler
Prof Peter Delves
Dr Brian de Souza
Prof Nigel Klein
Dr Mona Bajaj-Elliott
Dr Sean Nair
Dr Y Takeuchi
Dr R Milne
Dr Eric Brunner
Dr Hynek Pikhart
Ms Isabel Lubeiro (Teaching Administrator)

**Student-Staff Consultative Committee**

Teaching staff meet all students once a term 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 of matters arising from the MSc Infection & Immunity Programme approved by the Board of Examiners, the Programme Working Committee and the Student-Staff Consultative Committee.

**Student Questionnaires**

Questionnaires are supplied to students for each module. All questionnaire replies are filed in the Division of Infection & Immunity for inspection. A summary of the response is prepared by the Programme Tutor and reported to the Programme Working Committee.

**Students' career development**

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

**Other important information**

**UCL Graduate School**

www.ucl.ac.uk/gradschool - contains all you need to know.

**N.B.** You can also find a list of courses that are available to enhance your skills. Please ensure that these do not clash with teaching contact time. If this is not possible please ensure to seek permission from the module lead before missing lectures.

www.ucl.ac.uk/new-students - it is a very useful website also.

**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, Welcome 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 students can also have access to many outside Libraries, including Senate House, Welcome Library, British Library, Imperial College London and King's College London.

**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 4th 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

**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 Medical 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 Medical 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

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/

**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 Basic Bacteriology core module and you should also study the safety instructions in the lab manual.

You should liaise with your Research Project supervisor to ensure that you receive an appropriate local safety induction and are familiar with risk assessment procedures and practices 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.

**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, copy shop 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/

**Student support**

All students should be aware that there is support available to them outside the programme which includes:

- Divisional Graduate Tutor, Ari Fassati (a.fassati@ucl.ac.uk)
- Faculty Graduate Tutor, Tim McHugh (t.mchugh@ucl.ac.uk)
- Deans of Students: http://www.ucl.ac.uk/current-students/support

**UCL REGISTRY AND ACADEMIC SERVICES DIVISION**

**APPENDIX 14**

## STUDENT NOTIFICATION OF EXTENUATING CIRCUMSTANCES

This form is to enable the Board of Examiners to take into consideration any special circumstances, medical or other; that you believe may have affected your work.

For consideration of extenuating circumstances to occur, you must complete the form and then submit it, **together with the accompanying documentation**, to your Departmental Tutor (or other individual designated by your Department, this information may be set out in your departmental programme handbook).

Submissions from you regarding extenuating circumstances must be submitted to the designated person on a standard form at the time when, or immediately after, these circumstances arise. You should also retain a copy of all documentation.

Please complete Section 1 on this page and, if your circumstances are non-medical, complete and sign Section 2b on the following page.

If you circumstances are medical Section 2a should be completed by a medical professional.

**Section 1**

NAME _____ YEAR _____

STUDENT NUMBER _____

DEGREE PROGRAMME _____

DEPARTMENT _____

CONTACT (phone/email) _____

MODULES OR COURSE UNITS TO WHICH EXTENUATING CIRCUMSTANCES APPLY (If all, state 'ALL'):

**FOR OFFICE USE ONLY:**

| **A** | **B** | **C** | **X** |
|---|---|---|---|

**Comments:**

**Section 2 (a)**

**MEDICAL CIRCUMSTANCES**

*(To be completed by a medical practitioner or accompanied by medical certification. Continue on blank sheet provided if necessary)*

Please give the nature and severity of the student's medical condition and describe any consequences of the illness and/or treatment that may be relevant. Please provide the dates when the illness started and when the student was/will be fit to return to study.

***Signature of Medical Practitioner*** _____

***Date*** _____
*(if appropriate)*

Medical Practitioner's official Stamp:

**Section 2 (b)**

**NON-MEDICAL CIRCUMSTANCES**

*(To be completed by applicant. Continue on blank sheet provided if necessary)*

Give a brief description of the circumstances, accompanied by supporting documentation. Give the dates you were affected; an explanation of how the situation affected your study/examination performance; and what you have done about it. Have you already had consideration / extensions? What consideration are you requesting?

***Signature of Student*** _____

***Date*** _____