



<h1>Module Specification</h1>	 <p>UNIVERSITY OF LONDON INTERNATIONAL PROGRAMMES</p>	<p>LONDON SCHOOL of HYGIENE & TROPICAL MEDICINE</p> 
<h2>GENERAL INFORMATION</h2>		
Module name	Principles of Biology	
Module code	IDM102	
Module Organiser(s)	Dr Chrissy H Roberts	
Contact email	<p>The LSHTM distance learning courses and modules are run in collaboration with the University of London International Programmes. Enquiries may be made via their Student Advice Centre at: http://www.londoninternational.ac.uk/contact-us. (Enquiries from face-to-face i.e. London-based LSHTM MSc or research students regarding study of DL modules should be emailed to distance@lshtm.ac.uk.)</p>	
Home Faculty	<p>Faculty of Infectious & Tropical Diseases London School of Hygiene & Tropical Medicine http://www.lshtm.ac.uk/itd/</p>	
Level	<p>This module is at Level 7 (postgraduate Masters 'M' level) of the QAA Framework for Higher Education Qualifications in England, Wales & Northern Ireland (FHEQ)</p>	
Credit	LSHTM award 15 credits on successful completion of this module	
Accreditation	Not currently accredited by any other body	
Keywords	Biology, Biochemistry, Genetics, Immunology, Molecular biology, Evolution, Cell biology.	
<h2>AIMS, OBJECTIVES AND AUDIENCE</h2>		
Overall aim	<p>This module aims to introduce students to the fundamental biological principles which are necessary for the Postgraduate Diploma and MSc in Infectious Diseases. Areas covered include: the evolutionary tree of life, molecular biology and biochemistry; cell biology and immunology and vaccinology.</p>	
Intended learning outcomes	<p>By the end of this module, students should be able to:</p> <ul style="list-style-type: none"> • Discuss the basic features of prokaryotic and eukaryotic cells and, at a basic level, the evolutionary relationships between the main kingdoms. • Explain the characteristics and roles of the basic molecules of life and demonstrate an understanding of the biochemistry that governs their interactions. • Describe the structure of different types of cells and explain the relationships between these structures and the specialised functions of cells and their components. • Discuss the main cell types, molecules and processes involved in the immune response and demonstrate how the various components act together to provide immunity to infection. 	

Target audience	This module is intended for those with an interest in infectious diseases who wish to expand on a basic educational or professional background in biological sciences.
CONTENT	
Session content	<p>The module includes sections addressing the following topics:</p> <p>Section 1- Evolution and Classification The first, very short, section consists of a single session. It introduces the concepts of evolution, eukaryotes and prokaryotes, and classification.</p> <p>Section 2- Biochemistry and Molecular Biology The second section introduces a wide range of topics, starting with the structure of the atom, and how molecules interact. Basic biochemical concepts are discussed before moving on to look at the properties of the main classes of biological molecules. Understanding these properties is essential to an appreciation of infectious agents, tackled later in other modules. Finally, there are several sessions looking at the properties of nucleic acids – how they replicate, how they act as the genetic material of the cell and the analytical techniques used to probe and utilise the information they contain.</p> <p>Section 3 – Cell Biology The third section deals with cell biology and, in particular, the mammalian cell. This is important because the cell is a specialized and highly complex microenvironment. In some cases it is an environment in which infectious agents choose to live and thrive; in others it is an extremely hostile instrument that is highly successful at destroying invading organisms.</p> <p>Section 4 – Immunology Cell biology leads on to the study of immunology – the subject of Section 4. The human body’s defence against invasion is a remarkable multi-layered system that involves components that are both innate and acquired during an individual’s lifetime. This section covers antibody, cytokine and cellular immune responses, how genetic diversity prevents population collapse in the face of epidemics, how vaccines are developed and how some immune responses can be harmful.</p>
TEACHING, LEARNING AND ASSESSMENT	
Study resources provided or required	<p>The following materials are provided to students after registration for this module once a year in September:</p> <p>Study Guide: Interactive CD-ROM</p> <p>Textbooks:</p> <ul style="list-style-type: none"> • Alcamo, I.E., (2010). <i>Fundamentals of Microbiology</i>, 10th Ed. Jones & Bartlett Publishers Inc. ISBN: 9780763762582. • Goering, R.V., Dockrell, H.M., Zuckerman, M., Roitt, I.M. and Chiodini, P.L., (2012) <i>Mims’ Medical Microbiology</i>. 5th Ed. ISBN: 978-0723436010. • Alberts, B., et al (2015). <i>Molecular Biology of The Cell</i>. 6th Ed, Garland Science. ISBN: 9780815344643. <p>In addition to the materials above, students are given access to the LSHTM Virtual Learning Environment, Moodle (for web-based discussion forums etc.) and the LSHTM online library resources.</p> <p>Audio-recordings of on-campus lectures are not available for this module.</p>
Teaching and learning methods	Learning is self-directed against a detailed set of learning objectives using the materials provided. Students are strongly encouraged to participate in the module-specific discussion forums available on Moodle to obtain tutor support,

	and to make use of LSHTM online library resources. In addition, written feedback is provided on submitted formative assignments.
Assessment details	<p>Optional formative assignments are available to help students practice some of the principles discussed, and obtain tutor feedback.</p> <p>Formal assessment of this module includes a two-hour unseen written paper examination with 15 minutes' additional reading/planning time (100%).</p> <p>If students fail the module overall, they are allowed one further attempt at the examination.</p>
Assessment dates	<p>Assignments for this module can be submitted only once annually, no later than 31st March and must be submitted via the online Assignment Management System.</p> <p>Unseen written examinations for DL modules are held once a year, in June (including resits).</p> <p>Examinations are normally held in a student's country of residence, in one of over 650 examination centres worldwide. They are arranged mainly through Ministries of Education or the British Council. A list of examination centres can be found at http://www.londoninternational.ac.uk/community-support-resources/current-students/examinations/examination-centres.</p> <p>A local fee will be payable direct to the examination centre. This fee is in addition to the course/module fee and is set by, and paid directly to, the individual examination centres. The level of local examination centre fees varies across the world and neither the University of London International Programmes nor the LSHTM have any control over the fee amount.</p>
Language of study and assessment	English (please see 'English language requirements' below regarding the standard required for entry).
TIMING AND MODE OF STUDY	
Duration	Distance learning module studies begin in early October. Students may start their studies at any time from receipt of study materials and work through the material until the start of the June examinations (although assessment submission deadlines which are earlier than this must be observed).
Dates	Tutorial support for distance learning modules is available only from the beginning of October through to the end of May.
Mode of Study	By distance learning.
Learning time	<p>The notional learning time for the module totals 150 hours, consisting of:</p> <ul style="list-style-type: none"> • Directed self-study (reading and working through the provided module material) ≈ 100 hours • Self-directed learning (general reading around the subject, library, Moodle discussion forums) ≈ 25 hours • Assessment, review and revision ≈ 25 hours
APPLICATION, ADMISSION AND FEES	
Pre-requisites	Those wishing to study this module must have regular access to the internet to participate in module-specific discussions on Moodle, benefit from online library facilities and submit assignments.
English language requirements	A strong command of the English language is necessary to benefit from studying the module. Applicants whose first language is not English or whose prior university studies have not been conducted wholly in English must fulfil LSHTM's English language requirements , with an acceptable score in an

	approved test taken in the two years prior to entry. Applicants may be asked to take a test even if the standard conditions have been met.
Student numbers	There is no cap on the number of students who can register for this distance learning module. The number of students actively studying this module varies, but typically approximately 110 students register for the module per year.
Student selection	This module is available to be studied by students on the following distance learning courses: MSc, Postgraduate Diploma or Postgraduate Certificate Infectious Diseases courses. Alternatively, students may register for this as an “individual module”. This module is also open to LSHTM research degree students.
Fees	For the current schedule of fees click on the LSHTM course link.
Scholarships	Scholarships are not available for individual modules. Some potential sources of funding are detailed on the LSHTM website.
Admission deadlines	Applications for LSHTM distance learning courses and modules are managed by the University of London International Programmes. To apply to take either a formal award (i.e. PG Certificate, PG Diploma or MSc) or an individual module, click the relevant link on the right hand side of the page at http://www.londoninternational.ac.uk/courses/postgraduate/lshtm/infectious-diseases-msc-postgraduate-diploma-postgraduate-certificate Key deadlines are as follows: <ul style="list-style-type: none"> ➤ Application deadline: 31 August each year (Note: applicants who submit applications on or after 1 June 2017 will be required to pay an application fee of £100 at the point of submission, which will be deducted from the balance of fees payable upon registration. If the application does not result in registration, the application fee will not be refunded. No application fee will apply to applications submitted on or before 31 May 2017.) ➤ Registration deadline (new students and those registering for the project module, IDM600): 30 September each year ➤ Registration deadline (continuing students, with the exception of those registering for the project module IDM600, and those taking individual modules): 31 October. <p>Please note: <i>The academic year starts 1 October. Students who register after 1 October should note that module welcome and Collaborate sessions held in October are recorded, but they cannot request an extension to assignment submission deadlines or apply for an examination extenuating circumstance as a result of registering later than 1 October.</i></p> <p>(LSHTM research students wishing to study this module should note information given in the mixed mode study option document.</p>
ABOUT THIS DOCUMENT	
This module specification applies for the academic year 2017/18	
Last revised/approved by Chrissy H Roberts, 2017-03-01.	
Further revisions revised	
London School of Hygiene & Tropical Medicine, Keppel St., London WC1E 7HT. www.lshtm.ac.uk	