



The University of Southern Queensland

Course specification

The current and official versions of the course specifications are available on the web at <http://www.usq.edu.au/coursespecification/current>.
Please consult the web for updates that may occur during the year.

Description: Introductory Medical Microbiology

Subject	Cat-nbr	Class	Term	Mode	Units	Campus
BIO	4205	87424	1, 2009	WEB	1.00	Toowoomba

Academic group:	FOSCI
Academic org:	FOS002
Student contribution band:	6
ASCED code:	010911

STAFFING

Examiner: Michael Kotiw
Moderator: John Dearnaley

REQUISITES

Pre-requisite: BIO1101

RATIONALE

The aim of the course is to further develop the student's understanding of medical microbiology. This requires an understanding of the mechanisms of microbial pathogenesis. Introductory analysis of specific disease syndromes, together with discussion of relevant diagnostic and therapeutic options will enable the student to integrate these different fields of study and will enhance their capacity to undertake more advanced studies in the field of infectious diseases. Further, through undertaking WEB based laboratory exercises, the aim of this course is to provide an understanding of current molecular and conventional investigative tools involved in the analysis of complex infectious diseases.

SYNOPSIS

The course focuses on the nature, diagnosis and control of infectious diseases in humans. Areas of specific emphasis include the nature of microbial virulence factors, antimicrobial therapy and mechanisms of resistance and a system approach to clinical infectious disease syndromes. Students will undertake literature searches and report writing training by completing Investigative Reports. Students will also be exposed to the theory and applications of conventional and molecular technologies for generating, organizing, analysing and interpreting complex microbiological data. Students will develop microbiological investigative and analytical skills and be able to provide advanced technical reports and recommendations on the management of infectious disease syndromes. Specific Topics will be published in the course handbook.

OBJECTIVES

On completion of this course students will be able to:

1. make meaningful comments about each of the microbiological terms encountered during the course (End Semester Exam);
2. describe the general characteristics that differentiate bacteria, viruses, fungi and parasites (End Semester Exam);
3. demonstrate an awareness of the fundamentals of the human immune system (End of Semester Exam);
4. demonstrate an awareness of the conditions that make patients susceptible to infections (End of Semester Exam);
5. demonstrate an awareness of the role of the host and pathogen in the development of infections (End of Semester Exam);
6. demonstrate an understanding of the fundamentals of bacterial pathogenesis (End of Semester Exam);
7. demonstrate an understanding of virus biology and pathogenesis (End of Semester Exam);
8. demonstrate an awareness of fungal biology and pathogenesis (End of Semester Exam);
9. demonstrate an awareness of the significance of parasitic infections (End of Semester Exam);
10. demonstrate an awareness of conventional and molecular methods used in medical microbiology for the diagnosis and treatment of microbial diseases (Investigative Reports)
Specific Topics will be published in the course handbook.

TOPICS

Description	Weighting (%)
1. Overview of medical microbiology	4.00
2. Conventional and molecular microbial diagnostics	8.00
3. Overview of human immunology	16.00
4. Introduction to bacterial pathogenesis	24.00
5. Introduction to viral pathogenesis	24.00
6. Introduction to the fungal pathogenesis	16.00
7. Overview of parasitic diseases	8.00

TEXT and MATERIALS required to be PURCHASED or ACCESSED

ALL textbooks and materials are available for purchase from USQ BOOKSHOP (unless otherwise stated). Orders may be placed via secure internet, free fax 1800642453, phone 07 46312742 (within Australia), or mail. Overseas students should fax +61 7 46311743, or phone +61 7 46312742. For costs, further details, and internet ordering, use the 'Textbook Search' facility at <http://bookshop.usq.edu.au> click 'Semester', then enter your 'Course Code' (no spaces).

Kotiw, M 2009, *B104205 Introductory Medical Microbiology Course Handbook*, USQ Publication, Toowoomba.

Madigan, MT, Martinko, JM, Dunlap, PV & Clark, DP 2009, *Brock Biology of Microorganisms*, 12th edn, Prentice Hall, Englewood Cliffs.

REFERENCE MATERIALS

Reference materials are materials that, if accessed by students, may improve their knowledge and understanding of the material in the course and enrich their learning experience.

All Books on 3 Hour Loan Basis.

Benjamini, E et al 2003, *Immunology: A short course*, 5th edn, Wylie-Liss, Davis, Calif,
Ingraham, JL & Ingraham, CA 2004, *An Introduction to Microbiology: A case history approach*,
Brooks/Cole, Pacific Grove, CA.

Janeway, CA et al 2005, *Immunobiology*, 6th edn, Garland Science, New York.

Mandell, GL et al 2005, *Principles and Practice of Infectious Diseases*, 6th edn, Churchill
Livingstone, New York, Vol 1&2.

STUDENT WORKLOAD REQUIREMENTS

ACTIVITY	HOURS
Examinations	2.00
On-line Lectures	26.00
On-line Laboratory Principles Tutorials	13.00
Private Study	137.00

ASSESSMENT DETAILS

Description	Marks out of	Wtg (%)	Due date
INVESTIGATIVE REPORTS	40.00	40.00	02 Mar 2009 (see note 1)
2 HOUR CLOSED EXAMINATION	100.00	60.00	END S1 (see note 2)

NOTES

1. Lecturers to advise the due dates for Investigative Reports.
2. Examination dates will be available during the Semester. Please refer to the examination timetable when published.

IMPORTANT ASSESSMENT INFORMATION

- 1 Attendance requirements:
It is the students' responsibility to attend and participate appropriately in all activities (such as on line-lectures and laboratory tutorials scheduled for them, and to study all material provided to them or required to be accessed by them to maximise their chance of meeting the objectives of the course and to be informed of course-related activities and administration.
- 2 Requirements for students to complete each assessment item satisfactorily:
To complete each of the assignments satisfactorily, students must obtain at least 50% of the marks available for the test. To complete the examination satisfactorily, students must

- obtain at least 50% of the marks available for the examination. To complete the practical component satisfactorily, students must obtain at least 50% of the marks available in the practical test.
- 3 Penalties for late submission of required work:
If students submit assignments after the due date without (prior) approval of the examiner then a penalty of 5% of the total marks gained by the student for the assignment may apply for each working day late up to ten working days at which time a mark of zero may be recorded. No assignments will be accepted after model answers have been posted.
 - 4 Requirements for student to be awarded a passing grade in the course:
To be assured of receiving a passing grade a student must achieve at least 50% of the total weighted marks available for the course.
 - 5 Method used to combine assessment results to attain final grade:
The final grades for students will be assigned on the basis of the weighted aggregate of the marks obtained for each of the summative assessment items in the course.
 - 6 Examination information:
In a Closed Examination, candidates are allowed to bring only writing and drawing instruments into the examination.
 - 7 Examination period when Deferred/Supplementary examinations will be held:
Any Deferred or Supplementary examinations for this course will be held during the next examination period.
 - 8 University Regulations:
Students should read USQ Regulations 5.1 Definitions, 5.6. Assessment, and 5.10 Academic Misconduct for further information and to avoid actions which might contravene University Regulations. These regulations can be found at the URL <http://www.usq.edu.au/corporateservices/calendar/part5.htm> or in the current USQ Handbook.

ASSESSMENT NOTES

- 9 In order to attend laboratory classes, students must provide and wear appropriate personal protective equipment. This shall include a laboratory coat, closed in shoes, and safety glasses. Such equipment must be approved by supervising staff. Failure to provide and wear the appropriate safety equipment will result in students being excluded from classes.
- 10 Students who, for medical, family/personal, or employment-related reasons, are unable to complete an assignment or to sit for an examination at the scheduled time may apply to defer an assessment in a course. Such a request must be accompanied by appropriate supporting documentation. One of the following temporary grades may be awarded IDS (Incomplete-Deferred Examination); IDM (Incomplete Deferred Make-up); IDB (Incomplete - Both Deferred Examination and Deferred Make-up).
- 11 The examiner of a course may grant an extension of the due date of an assignment in extenuating circumstances. The Faculty will normally only accept assessments that have been written, typed or printed on paper-based media. The Faculty will NOT accept submission of assignments by facsimile. Students who do not have regular access to postal services or who are otherwise disadvantaged by these regulations may be given special consideration. They should contact the examiner of the course to negotiate such special arrangements.
- 12 IT requirements: All students, particularly those studying in external mode, are strongly encouraged to have access to the Internet and to have a IT requirements: All students, particularly those studying in external mode, are strongly encouraged to have access to

the Internet and to have a computer capable of running the latest versions of Internet web browsers such as Netscape Communicator or Internet Explorer. To achieve this level of capacity, the following standards are recommended as a minimum: Pentium 3, 500MHz or higher; or equivalent, 256Mb Ram, 10Gb free Hard disk space, video card - 64MB VRAM, Windows 2000 Professional, Windows XP (preferred), Mac System 8.1 or higher, Windows XP Home Edition, mouse, sound card, 24 x CDROM drive, 56 K v.90 modems that are flash upgrade-able.