MIIM30015 Techniques in Immunology

Credit Points:	12.50
Level:	3 (Undergraduate)
Dates & Locations:	This subject is not offered in 2014. An enrolment quota of 160 students applies to this subject. For detailed information on the quota subject application process, refer to the Quota Subject link on the MDHS Student Centre website: http://sc.mdhs.unimelb.edu.au/quota-subjects
Time Commitment:	Contact Hours: 1 x 1hr tutorial per week plus up to 3hr practical per week (ie. up to 36hr practical per semester) plus 1hr lecture per week during semester Total Time Commitment: 120 hours
Prerequisites:	This subject is only available to students enrolled in the Bachelor of Biomedicine and the Bachelor of Science.

B. Science students (pre 2013)

Subject	Study Period Commencement:	Credit Points:
MIIM20001 Principles of Microbiology & Immunology	Semester 1	12.50
MIIM20003 Experimental Microbiology	Not offered 2014	12.50
MIIM30002 Principles of Immunology	Semester 1	12.50

Students who have obtained 40 - 49% for **MIIM30002 Principles of Immunology** are advised to discuss the possibility of being accepted into this subject with the subject coordinators.

B.Sci students who have completed BCMB20002 BUT NOT MIIM20001 may be admitted to this subject after discussion with and specific permission from the subject coordinators.

B. Science students (2013 on)

One of:

Subject	Study Period Commencement:	Credit Points:
MIIM20001 Principles of Microbiology & Immunology	Semester 1	12.50
BCMB20002 Biochemistry and Molecular Biology	Semester 1, Semester 2	12.50

Plus one of:

Subject	Study Period Commencement:	Credit Points:
MIIM20002 Microbes, Infections and Responses	Semester 2	12.50
BCMB20005 Techniques in Molecular Science	Semester 1, Semester 2	12.50
GENE20003 Experiments in Genetics	Semester 1, Semester 2	12.50

Plus

Subject	Study Period Commencement:	Credit Points:
MIIM30002 Principles of Immunology	Semester 1	12.50

Students who have obtained 40 - 49% for **MIIM30002 Principles of Immunology** are advised to discuss the possibility of being accepted into this subject with the subject coordinators.

B. Biomedicine students

	<table><tr><th>Subject</th><th>Study Period Commencement:</th><th>Credit Points:</th></tr><tr><td>BIOM20001 Molecular and Cellular Biomedicine</td><td>Semester 1</td><td>25</td></tr><tr><td>MIIM30002 Principles of Immunology</td><td>Semester 1</td><td>12.50</td></tr></table> Students who have obtained 40 - 49% for **MIIM30002 Principles of Immunology** are advised to discuss the possibility of being accepted into this subject with the subject coordinators.
Corequisites:	None
Recommended Background Knowledge:	The prerequisite subjects should have provided a solid background in Immunology. An understanding of the molecules, genes and biology of the cell would be useful.
Non Allowed Subjects:	This subject cannot be taken if students have gained credit for the following subjects: 526-324 Immunological Techniques (pre 2010) 526-332 Techniques in Microbiology & Immunology (pre 2011) MIIM30013 Techniques in Microbiology & Immunology (pre 2014)
Core Participation Requirements:	For the purposes of considering request for Reasonable Adjustments under the Disability Standards for Education (Cwth 2005), and Student Support and Engagement Policy, academic requirements for this subject are articulated in the Subject Overview, Learning Outcomes, Assessment and Generic Skills sections of this entry. It is University policy to take all reasonable steps to minimise the impact of disability upon academic study, and reasonable adjustments will be made to enhance a student's participation in the University's programs. Students who feel their disability may impact on meeting the requirements of this subject are encouraged to discuss this matter with a Faculty Student Adviser and Student Equity and Disability Support: http://services.unimelb.edu.au/disability
Contact:	**Academic Coordinators** Dr Odilia Wijburg **odilia@unimelb.edu.au (mailto:odilia@unimelb.edu.au)** Dr Karena Waller **klwaller@unimelb.edu.au (mailto:klwaller@unimelb.edu.au)** **Administrative Coordinator** **BiomedSci-AcademicServices@unimelb.edu.au (mailto:BiomedSci-AcademicServices@unimelb.edu.au)**
Subject Overview:	This subject provides an overview of: (i) methods used to dissect and characterise the complex immune defences against microbial infections (ii) methods used to analyse the development and function of the immune system in health and disease (ii) strategies used to construct and present scientific oral and written reports. This subject introduces techniques used in research and diagnostic immunology laboratories. The practical exercises will illustrate the theoretical principles that govern the function of the immune system. The immunological techniques covered are used to analyse the complexities of innate and adaptive immune responses, such as preparation of cell suspensions, flow cytometry, enzyme immunoassays, molecular methods to analyse immune function, in vitro assays to analyse immune function. Non-Laboratory sessions will be used to introduce and discuss the theoretical aspects of the practical topics, analyse data, critically discuss scientific research publications, source relevant scientific literature and to discuss strategies used to construct, prepare and present oral and written scientific reports. Upon completion of the subject students will:

	# have experience in the preparation and quantification of cell suspensions for immune assays # be familiar with a range of molecular and cellular techniques used to analyse functional characteristics of immune responses # have experience in techniques used for the detection and analysis of cell associated molecules # have developed safe scientific work practices # have developed skills to accurately record experimental data and use this record to construct and present oral and written scientific reports. # have participated in group work activities, both within and outside of the Laboratory.
Learning Outcomes:	Upon completion of this subject, students should be able to: # Describe and apply the principles and procedures involved in preparation and characterisation of immune cells, their products and their functions # Describe and apply the principles of flow cytometry # Describe and apply the use of molecular and cellular techniques in addition to bioinformatics to identify and characterise immune responses # Demonstrate the ability to perform practical techniques used in research laboratories in a safe, scientific work manner # Describe the purpose of controls in the interpretation of experimental data # Keep clear and accurate laboratory records of all experimental work # Critically analyse and effectively communicate scientific ideas and findings in both oral and written form. # Participate in group work activities within and outside the Laboratory
Assessment:	1 x 2 hour end-of-semester exam (50%), 2 x oral presentations (throughout semester, 12.5% each) 2 x written reports (to be submitted mid-semester and end of semester, up to 500 words each, 12.5% each) Satisfactory use and completion of a Laboratory Notebook is required to pass this subject (ie. it is a hurdle requirement). Attendance is compulsory. Students who miss more than 20% of the practical component of this subject will not be eligible for final assessment.
Prescribed Texts:	Janeway's Immunobiology (Murphy et al) 8th ed, 2012
Breadth Options:	This subject is not available as a breadth subject.
Fees Information:	Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees
Generic Skills:	On completion of this subject, students should have developed the following generic skills: # the ability to interpret scientific literature and interpret data from electronic databases. # the capacity to integrate knowledge across disciplines. # the ability to comprehend a question, evaluate the relevant information and communicate an answer.
Notes:	This subject is available to students enrolled in the: Pre-2008 B. Sc NG B. Sc. NG B. Biomed This subject is a practical subject. It requires attendance at all scheduled sessions. Whilst students will not be involved in the manipulation and handling of animals, reagents and media components derived from animals will be used in some experiments. These experiments will be approved by the University of Melbourne Animal Welfare Committee. Experiments contained in this unit will also be approved by the Biosafety and Gene Technology Committee. Students wishing to register in this subject after the Quota Selection Date or after week 1 of a Semester should contact the subject coordinators.

Related Majors/Minors/ Specialisations:	Biomedical Biotechnology (specialisation of Biotechnology major) Defence and Disease Immunology Immunology (pre-2008 Bachelor of Science) Infection and Immunity Microbiology (pre-2008 Bachelor of Science) Science credit subjects* for pre-2008 BSc, BASc and combined degree science courses Science-credited subjects - new generation B-SCI and B-ENG. Selective subjects for B-BMED