PATH30002 Techniques for Investigation of Disease

Credit Points:	12.50
Level:	3 (Undergraduate)
Dates & Locations:	2010, Parkville This subject commences in the following study period/s: Semester 1, Parkville - Taught on campus.
Time Commitment:	Contact Hours: 72 hours (6 contact hours per week) Total Time Commitment: 120 hours (10 hours per week)
Prerequisites:	B. Science students: **Subject** / **Study Period Commencement:** / **Credit Points:** PATH20001 Exploring Human Disease - Science / Semester 2 / 12.50 and **Subject** / **Study Period Commencement:** / **Credit Points:** BCMB20002 Biochemistry and Molecular Biology / Semester 1 / 12.50 and **Subject** / **Study Period Commencement:** / **Credit Points:** BCMB20005 Techniques in Molecular Science / Semester 1, Semester 2 / 12.50 B. Biomedicine students: **Subject** / **Study Period Commencement:** / **Credit Points:** BIOM20001 Molecular and Cellular Biomedicine / Semester 1 / 25 B. Biomedical Science students: 531-201 Basic Principles of Pathology (pre-2009)
Corequisites:	B. Science students: **Subject** / **Study Period Commencement:** / **Credit Points:** PATH30001 Mechanisms of Human Disease / Semester 1 / 12.50 B. Biomedicine students: **Subject** / **Study Period Commencement:** / **Credit Points:** PATH30001 Mechanisms of Human Disease / Semester 1 / 12.50 NOTE: B. Biomedicine students doing a Defence & Disease major MUST consult the Majors Information Booklet for additional corequisite requirements and choices. B. Biomedical Science students: **Subject** / **Study Period Commencement:** / **Credit Points:** PATH30001 Mechanisms of Human Disease / Semester 1 / 12.50
Recommended Background Knowledge:	B. Science students should choose from: Biochemistry subjects: **Subject** / **Study Period Commencement:** / **Credit Points:**

	BCMB30001 Protein Structure and Function — Semester 2 — 12.50 BCMB30002 Functional Genomics and Bioinformatics — Semester 1 — 12.50 BCMB30003 Molecular Aspects of Cell Biology — March — 12.50 Micro and Immunology subjects: **Subject** — **Study Period Commencement:** — **Credit Points:** MIIM30002 Principles of Immunology — Semester 1 — 12.50 MIIM30011 Molecular and Medical Microbiology — Semester 1 — 12.50 MIIM30013 Techniques in Microbiology & Immunology — Semester 1, Semester 2 — 12.50 MIIM30003 Medical and Applied Immunology — Semester 2 — 12.50 Other subject combinations from: Pharmacology and Anatomy and Cell Biology.
Non Allowed Subjects:	None
Core Participation Requirements:	It is University policy to take all reasonable steps to minimise the impact of disability upon academic study and reasonable steps will be made to enhance a student's participation in the University's programs. This subject requires all students to actively and safely participate in laboratory activities. Students who feel their disability may impact upon their participation are encouraged to discuss this with the subject coordinator and the Disability Liaison Unit: http://www.services.unimelb.edu.au/disability/
Contact:	**johnru@unimelb.edu.au (mailto:johnru@unimelb.edu.au)** Administrative Coordinator: Mrs Katrina Rush
Subject Overview:	Techniques for Investigation of Disease aims to develop a sound practical and theoretical understanding of the scientific investigation of disease by the examination of key experimental techniques in the context of particular diseases. The techniques examined include: histology, immunohistochemistry, immunocytochemistry, quantitative ELISA, Southern blotting, immunoblotting, polymerase chain reaction. These techniques will be employed, in conjunction with critical analysis of published research papers, to understand the cellular, molecular and genetic processes involved in certain diseases and disease diagnosis. Diseases examined in this course include autoimmune diseases such as Systemic Lupus Erythematosus and Crohn's Disease, Alzheimer's Disease, Prostate, Breast and Colon cancer. The subject also includes a practical session involving the techniques employed for forensic analysis. This course will introduce students to basic principles of laboratory based analytical methods that are currently used in Pathology Research, Diagnostic Pathology and Forensic Pathology.
Objectives:	The general aims of the practical course are: # to extend and complement the 531-301 Mechanism of Human Disease lecture material. # to provide experience in a variety of experimental techniques related to pathology. # to provide experience in experimental design, data analysis and the experimental approach to problem solving.
Assessment:	Practical work submitted weekly in accordance with the subject handbook (65%). Continuous assessment of laboratory performance (10%). A 1-hour end-of-semester multiple choice examination (25%).All experiment-based practical reports, paper exercises and museum assignments are of equal assessment weight (6.5%) and must be of the order of 2000 – 2500 words in length excluding figures, diagrams, tables and the bibliography.Completion and submission of all assessment activities including experiment-based practical reports, paper exercises and museum assignments by the submission dates indicated in the subject practical manual is a compulsory requirement of the subject. Attendance at all pre-practical talks and all practical sessions as indicated in the subject practical manual is compulsory and a prescribed hurdle requirement of the subject.
Prescribed Texts:	Kumar V., et al., Robbins Pathologic Basis of Disease, Saunders Elsevier.

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:	The emphasis of this subject is to introduce students to the importance of research in the investigation of disease by undertaking experimental practicals and paper exercises. This will enable students to: # enhance practical skills by undertaking scientific techniques used for the investigation of disease. # develop skills in the experimental design, analysis and interpretation of scientific data which may be applied across the various scientific disciplines. # develop critical thinking and problem solving techniques by the analysis and interpretation of scientific data. # develop an understanding of the importance of accurate recording, storage and retrieval of scientific information based on the Code of Conduct for Research at the University of Melbourne. # understand the ethical considerations of reliably performing, recording, storing and reporting scientific information. # improve written and oral communication skills by the preparation of a detailed written scientific reports. # develop the capacity to work as part of a team or independently. # develop information management skills necessary for undertaking an informed research project.
Notes:	# Laboratory coat and safety glasses are required. # Students should be familiar with content of 531-201 Exploring Human Disease. # B. Science students should be enrolled in 531-301 Mechanisms of Human Disease. # B. Biomedicine students doing a Defence & Disease major MUST consult the Major Information Booklet for additional corequisite choices. # Students should be familiar with the University policy on Plagiarism and must sign and attach an Anti-Plagiarism declaration to each Assessment Activity. # Completion and submission of all assessment activities including experiment-based practical reports, paper exercises and museum assignments by the submission dates indicated in the subject practical manual is a compulsory requirement of the subject. # Attendance at all pre-practical talks and all practical sessions as indicated in the subject practical manual is compulsory and a prescribed hurdle requirement of the subject.
Related Course(s):	Bachelor of Science Graduate Diploma in Biotechnology
Related Majors/Minors/ Specialisations:	Defence and Disease Human Structure and Function Pathology Pathology Pathology