

MEDS90001 Foundations of Biomedical Science

Credit Points:	81.25
Level:	9 (Graduate/Postgraduate)
Dates & Locations:	2016, Parkville This subject commences in the following study period/s: Year Long, Parkville - Taught on campus.
Time Commitment:	Contact Hours: 10 hours of lectures, 6 hours of small group case based tutorials, 6 hours of practical classes per week (configurations will vary) Total Time Commitment: 1340 hours
Prerequisites:	None
Corequisites:	None
Recommended Background Knowledge:	None
Non Allowed Subjects:	N/A
Core Participation Requirements:	<p><p>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.</p> <p>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</p></p>
Coordinator:	Assoc Prof James Ziogas, Dr Simone Elliott
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Subject Overview:	This subject will build on the prerequisite knowledge for the course to consolidate the bioscience knowledge and skills necessary for establishing clinical competence in the remainder of the course. Learning will be in the context of clinical cases using a body system integration of the core bioscience disciplines of anatomy/embryology, physiology, biochemistry, pathology, pharmacology, microbiology, immunology, behavioural science and population health.
Learning Outcomes:	<p>In line with the graduate attributes of the MD, by the end of the subject students should have developed the following objectives to a level appropriate for the first year of the course:</p> <p>Knowledge</p> <ol style="list-style-type: none"> 1. Understand normal structure, function and development of the human body and mind at all stages of life 2. Understand the principles (pharmacological, physical, nutritional, behavioural and psychological) underlying key medical conditions 3. Understand the molecular, biochemical and cellular mechanisms that are important in maintaining the body's homeostasis 4. Understand normal life processes including conception, development, birth, ageing and death 5. Understand the factors that might disturb normal structure, function and development 6. Understand the basic aetiology and pathology, of important illnesses 7. Understand the scientific method relevant to biological, behavioural and social science

	<p>8. Understand research methods 9. Access new knowledge from key sources and to analyse and interpret it in a critical manner 10. Understand the importance of learning from teachers and peers 11. Understand the importance of contributing towards the generation of new knowledge</p> <p>Self</p> <p>1. Understand the principles of reflective practice 2. Understand the principles of self awareness 3. Identify and address learning needs in a preclinical setting 4. Respond constructively to assessment feedback 5. Apply effective time-management and organisational skills to the preclinical setting</p> <p>Patient</p> <p>1. Understand the rights of patients including patient choice, dignity and privacy 2. Understand the factors affecting human relationships and the psychological, cultural and spiritual well-being of patients 3. Understand chronic illness and disability and its impact on the patient, their carers and communities</p> <p>Society</p> <p>1. Understand the interactions between humans and their social and physical environment 2. Understand the determinants of a well society and the economic, political, psychological, social and cultural factors that contribute to the development and persistence of health and illness 3. Understand the principles of health promotion including primary and secondary prevention 4. Understand the health of indigenous Australians including their history, cultural development and the impact of colonisation and the ongoing health disparities of indigenous people in this country and globally 5. Understand the burden of disease in differing populations and geographic locations 6. Consider local, regional, national and global ramifications of health care issues 7. Understand the relationship between environmental issues and the health of local communities and society</p> <p>Medical Profession</p> <p>1. Understand the principles of ethics in the provision of health care and research. 2. Give effective feedback to colleagues in a small group tutorial setting</p> <p>Systems of Health Care</p> <p>1. Understand the principles of team work and the ability to work effectively in a team 2. Understand the principles of efficient and equitable allocation and use of finite resources in health care systems, locally and globally</p>
Assessment:	Seven hours of written tests throughout the year (35%); One essay of 2000 words due during semester 1 (5%); Tutor mark: End of semester 1 (5%); End of semester 2 (5%); Three hour written examination (Short Answer Questions), end of year (30%); Two hour written examination (MCQ), end of year (20%); Hurdle requirements: Achievement of a satisfactory grade for Professional Behaviour; 75% attendance at CSL tutorials; 75% attendance at all other practical classes, tutorials and workshops.
Prescribed Texts:	Naish J, Revest P, Syndercrombe Court D, editors. Medical Sciences. Saunders Elsevier; 2009. Goering R. et al. Mims Medical Microbiology. 5th ed. Elsevier; 2013 (unlimited online access available through ClinicalKey). Kumar V, Abbas AK, and Aster J, editors. Robbins and Cotran Pathologic Basis of Disease. 9th ed. Saunders Elsevier; 2015 (unlimited online access available through ClinicalKey). Young, B, O'Dowd G, Woodford, P. Wheater's Functional Histology: A Text and Colour Atlas. 6th ed. Elsevier; 2014 (unlimited online access available through ClinicalKey). Young, B, Stewart W, O'Dowd G. Wheater's Basic Pathology, A Text, Atlas and Review of Histopathology. 5th ed. Churchill Livingstone Elsevier; 2011 (online access available through Clinicalkey).
Recommended Texts:	<p>Anatomy and Cell Biology</p> <p># Drake, Vogl and Mitchell. <i>Gray's Anatomy for Students</i>. 2nd ed. Churchill Livingstone; 2010 (unlimited online access available through ClinicalKey).</p> <p># Moore KL, Dalley AF. <i>Clinically Oriented Anatomy</i>. 7th ed. Philadelphia: Lippincott Williams & Wilkins; 2014.</p> <p># Eizenberg N, Briggs C, Adams C and Ahern G. <i>General Anatomy: Principles and Applications</i>. McGraw-Hill; 2007.</p> <p># Eizenberg N, Briggs C, Barker P and Grkovic I. <i>An@tomed</i> An online version of the An@tomed CAL program is available</p>

through the Library (<http://203.129.255.81.ezp.lib.unimelb.edu.au/> (<http://203.129.255.81.ezp.lib.unimelb.edu.au/>)) The offline version is available on computers in the Museum and in W313 computer lab.

Biochemistry and Molecular Biology

- # Devlin T, editor. *Textbook of Biochemistry with Clinical Correlations*. 7th ed. Wiley-Liss; 2010.

Genetics

- # Metcalfe, S. *Medical GenetiX: Clinical and Molecular Aspects of Human Genetics Disorders*. CD-ROM, Version 3.0, 2009. ISBN: 978-0-7340-2774-0. (All students are provided with a copy as part of their enrolment in the MD).
- # Korf BR and Irons MB (ed). *Human Genetics*. 4th ed. Wiley-Blackwell; 2013.
- # Nussbaum RL, McInnes RR and Willard HF (ed). *Thompson & Thompson Genetics in Medicine*. 7th ed. Saunders Elsevier; 2007. (online access available through ClinicalKey).

Microbiology and Immunology

- # Murphy KM, Travers P, Walport M. *Janeway's Immunobiology*. 8th ed. Garland Science; 2011.

Neurosciences

- # Kandel ER, Schwartz JH and Jessell TM. *Principles of Neural Science*. 5th ed. McGraw-Hill; 2013.
- # Purves D, et.al. *Neuroscience*. 5th ed. Sinauer Associates Inc; 2012.
- # Bear MF, Connors BW and Paradiso MA. *Neuroscience, Exploring the Brain*. 3rd ed. Lippincott; 2007.
- # Haines DE. *Neuroanatomy: An atlas of structures, sections and systems*. 8th ed. Lippincott; 2011
- # Nolte J and Angevine JB. *The human brain: In photographs and diagrams*. 4th ed. Saunders; 2013.

Pathology

- # Lilly LS (ed). *Pathophysiology of Heart Disease, A Collaborative Project of Medical Students and Faculty*. 5th ed. Lippincott Williams and Wilkins; 2010.
- # Stevens A, Lowe J and Scott I. *Core Pathology*. 3rd ed. Mosby; 2009. (unlimited online access available through MD Consult)

Population Health

- # Jekel JF, Elmore JG, Wild DMG, Lucan JG. *Jekel's Epidemiology, Biostatistics and Preventive Medicine with Student Consult Online Access*. 4th ed. Philadelphia: Saunders Elsevier; 2014 (unlimited online access available through ClinicalKey).
- # Straus SE, Richardson WS, Glasziou P, Haynes RB. *Evidence-Based Medicine*. 3rd ed. Churchill Livingstone; 2005.
- # Kirkwood B, Sterne JAC. *Essential Medical Statistics*. 2nd ed. Blackwell Scientific Publishing; 2003.
- # Kerridge I, Lowe M, McPhee J. *Ethics and law for the health professions*. 3rd ed. Federation Press, Sydney; 2009.

Pharmacology

- # Rang H, Dale M, Ritter J and Flower RJ. *Rang & Dale's Pharmacology*. 7th ed. Churchill Livingstone; 2012. (online access available through ClinicalKey).
- # DE Golan Tashjian AH, Armstrong EJ & Armstrong AWI. *Principles of pharmacology: the pathophysiologic basis of drug therapy*. 3rd ed. Lippincott Williams & Wilkins; 2011.
- # Katzung BG. *Basic and clinical pharmacology*. 12th ed. McGraw Hill/Lange; 2012. (unlimited online access available through Access Medicine).
- # Brunton L, Lazo J & Parker KL. *Goodman and Gilman's The Pharmacological Basis of Therapeutics*. 12th ed. McGraw Hill; 2011. (unlimited online access available through Access Medicine).

Physiology

- # Boron WF, Boulpaep EL. *Medical Physiology*. Updated 2nd ed. Saunders; 2013 (unlimited online access available through ClinicalKey).
- # Barrett KE, Boitano S, Barman SM, Brooks H. *Ganong's Review of Medical Physiology*. 24th ed. McGraw-Hill; 2012 (unlimited online access available through Access Medicine).

Psychological Science

	Ayers S & de Visser R <i>Psychology for Medicine</i> . Sage Publications; 2011.
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: <ul style="list-style-type: none"># the ability to understand the relationship of basic scientific knowledge to health and disease# the capacity to integrate knowledge across disciplines# the ability to work in a team to understand a problem and communicate solutions.
Related Course(s):	Doctor of Medicine