

SUBJECT OUTLINE

Subject Name:

Pathology and Clinical Science 1

Subject Code:

BIOC211

SECTION 1 – GENERAL INFORMATION

Award/s:

	Total course credit points:	Level:
Bachelor of Health Science (Naturopathy)	128	2 nd Year
Bachelor of Health Science (Acupuncture)	128	2 nd Year
Bachelor of Health Science (Nutritional and Dietetic Medicine)	96	2 nd Year
Bachelor of Health Science (Myotherapy)	96	2 nd Year
Bachelor of Complementary Medicine	48	48 2 nd Year 2 nd Year

Duration: 1 Semester

Subject Coordinator: Jenny Yeeles (Adelaide campus)

Subject is: Core

Subject Credit Points: 4

Student Workload:

No. timetabled hours per week:	No. personal study hours per week:	Total hours per week:
6	4	10

Delivery Mode:

Face to face	2 x 2 hour lectures	2 x 1 hour tutorials
E-Learning	Details:	Narrated Powerpoint presentations Tutorials - Asynchronous tutor moderated discussion forum and activities Student handouts, web-based resources, videos, readings, case studies
Intensive Delivery	Details:	Summer school - offered 4 x 4hrs per week for 5 weeks. Mid-semester exam conducted in Week 3. Case study assignment for intensive delivery is due to be uploaded by Sunday in Week 5. Final exam conducted in Week 6 of Summer School.
Full Time		
Part Time		

Pre-requisites: BIOH122

Co-requisites: Nil

SECTION 2 – ACADEMIC DETAILS

Subject Rationale

This subject provides a comprehensive grounding in the study of pathology and disease states in conventional medicine. The emphasis in the beginning of the subject is on general pathological processes and how they affect the whole body, as well as specific body systems. These responses include inflammation, hypersensitivity, autoimmunity, immunodeficiency and neoplasia and how they give rise to clinical signs and symptoms. There will also be an introduction to the concepts associated with the study of microbiology. In the latter part of this subject the emphasis is on the disease states of the systems involved with transport and metabolism — cardiovascular, respiratory, digestive and urinary. Students also learn the pathophysiology, clinical presentations, investigation tests, and management of significant systemic disorders relating to these systems. Upon successful completion of this subject, students should be able to apply the knowledge of basic pathological processes and to analyse and critically evaluate clinical features and tests and to understand the basis for the conventional differential diagnosis of relevant disorders related to the above systems. This is a foundational subject for the further study of clinical examination, western diagnostic techniques and for the advanced pathology and clinical science subjects.

Learning Outcomes

1. Define the nature and role of clinical medicine and its relationship to the disease process.
2. Analyse various cellular adaptations and major immune responses to stress (injury) which may lead to homeostatic imbalance and hence disease e.g. inflammation, hypersensitivity, autoimmunity, immunodeficiency, neoplasia, and infection.
3. Demonstrate the basic differences in biochemistry among viruses, prokaryotic and eukaryotic microbes, especially as they relate to antibiotic therapy and other chemotherapeutic agents.
4. Interpret the key characteristics of fungi and parasites, and be able to distinguish various moulds and yeasts, and be able to categorise parasites into the major groups.
5. Analyse and describe how underlying pathological processes contribute to signs and symptoms in diseases of the digestive, urinary, cardiovascular and respiratory systems and dictate patient management.
6. Describe how clinical features aid in differential diagnosis.
7. Identify and apply appropriate diagnostic investigations to the differential diagnosis of diseases.

Assessment Tasks

Type	Learning Outcomes Assessed	Session Content Delivered	Session Due	Weighting
Mid Semester Exam Multiple choice, Matching, Pathological images (45 minutes)	1,2,3,4,5	1-10	13	25%
Case Study Assignment (1500 words)	5,6,7	11-18	Sunday following Session 24	30%
Final Exam Case-based, extended response (2 hours)	1-7	1-26 (maximum of 50% weight on material from sessions 1-18)	Final Exam Period	45%

Prescribed readings:

1. Grossman, S. C., & Porth, C. M. (2014). *Porth's pathophysiology: Concepts of altered health states* (9th ed.). Philadelphia, PA: Wolters Kluwer Health.
2. Walker, B. R., Colledge, N. R., Ralston, S. H., & Penman, I. D. (Eds.). (2014). *Davidson's principles and practice of medicine* (22nd ed.). Edinburgh, Scotland: Churchill Livingstone. [ebook available]

Recommended readings:

1. Davies, A., & Moores, C. (2010). *The respiratory system: Basic science and clinical conditions* (2nd ed.). Edinburgh, Scotland: Churchill Livingstone. [ebook available]
2. Field, M. (2010). *The Renal System: Basic Science and Clinical Conditions*. (2nd ed.). Edinburgh, Scotland: Churchill Livingstone Elsevier.
3. Jamison, J. R. (2006). *Differential diagnosis for primary care: A handbook for health care practitioners* (2nd ed.). Edinburgh, Scotland: Churchill Livingstone.
4. Lee, G., & Bishop, P. (2013). *Microbiology and infection control for health professionals* (5th ed.). Frenchs Forest, NSW: Pearson Australia.

5. McCance, K. L., & Huether, S. E. (Eds.). (2014). *Pathophysiology: The biologic basis for disease in adults and children* (7th ed.). St. Louis, MO: Elsevier. [ebook available]
6. Murphy, K. (2011). *Janeway's immunobiology* (8th ed.). New York, NY: Garland Science.
7. Noble, A., Johnson, R., Thomas, A., & Bass, P. (2010). *The cardiovascular system: Basic science and clinical conditions* (2nd ed.). Edinburgh, Scotland: Churchill Livingstone. [ebook available]
8. Pagana, K. D., & Pagana, T. J. (2014). *Mosby's diagnostic and laboratory test reference* (12th ed.). St Louis, MO: Elsevier. [ebook available]
9. Smith, M. E., & Morton, D. G. (2010). *The digestive system: Basic science and clinical conditions* (2nd ed.). Edinburgh, Scotland: Churchill Livingstone. [ebook available]
10. VanMeter, K. C., & Hubert, R. J. (2014). *Gould's pathophysiology for the health professions* (5th ed.). St Louis, MO: Saunders Elsevier. [ebook available]

Subject Content		
Week	Lecturer	Tutorial
1.	Session 1 Introduction – Cell and Disease <ul style="list-style-type: none"> • Subject Outline / Subject Aims / Assessment / Teaching Resources • An Introduction to Pathophysiology • Review of the normal immune response <ul style="list-style-type: none"> ○ Nonspecific immunity ○ Specific immune responses Cell Adaptation	Revision of the concepts of medical terminologies and normal immune response of our body.
	Session 2 Tissue and Diseases <ul style="list-style-type: none"> • Inflammation and wound healing <ul style="list-style-type: none"> ○ Factors that affect healing • Oedema and fluid compartment imbalance 	Review and video on inflammation and deep wound healing.
2.	Session 3 Infection <ul style="list-style-type: none"> • Causes of infection • The normal course of an infection • Presenting problems in infections • Common infections and their management 	Review of concept of infection control and prevention using the case scenarios.
	Session 4 Bacteria <ul style="list-style-type: none"> • Classification, Biochemistry, Reproduction • Normal flora, pathogenic organisms of clinical importance, common treatments 	Interactive activity sheets and discussion on bacterial structure and clinical treatment. Use of multimedia activities where relevant
3.	Session 5 Viruses <ul style="list-style-type: none"> • Classification, Biochemistry, Reproduction • Pathogenic organisms of clinical importance, common treatments 	Interactive activity sheets and discussion on viral structure. Use of multimedia activities where relevant
	Session 6 Fungi <ul style="list-style-type: none"> • Classification, Biochemistry, Reproduction, pathogenic 	Interactive activity sheets and discussion on fungal and parasitic biochemistry and clinical treatments.

	organisms of clinical importance, common treatments Parasites <ul style="list-style-type: none"> Classification, Biochemistry, Reproduction, pathogenic organisms of clinical importance, common treatments 	Use of multimedia activities where relevant
4.	Session 7 The Abnormal Immune Response <ul style="list-style-type: none"> Hypersensitivity Autoimmunity Immunodeficiency 	Review and video on allergies, HIV and AIDs.
	Session 8 Neoplasia <ul style="list-style-type: none"> Three step model of cancer development Epidemiology 	Review on Neoplasia on concepts of cell mutation, carcinogenesis and risk factors for cancer. Concept map on Neoplasia.
5.	Session 9 Neoplasia 2 <ul style="list-style-type: none"> Malignant vs. benign cancer: patterns of presentation and prognosis Staging of cancers General management principles 	Review on Neoplasia on concepts of cell mutation, carcinogenesis and risk factors for cancer. Concept map on Neoplasia.
	Session 10 Common symptomatology 2 <ul style="list-style-type: none"> Pain and pain management Headache Nausea and vomiting Cough and breathlessness Diarrhoea and constipation Anorexia and weight change Fatigue, malaise and lethargy Fever Skin changes and rashes 	Design a questionnaire for patients presenting with pain Flow chart on differential diagnosis from some common signs and symptoms: <ul style="list-style-type: none"> Cough Vomiting Diarrhoea Fever Chest pain Breathlessness Skin rashes
6.	Session 11 Digestive System Disorders 1 <ul style="list-style-type: none"> Examination and investigation of the digestive system Clinical Features of gastrointestinal disease Diseases of the mouth Diseases of the oesophagus <ul style="list-style-type: none"> GORD Hiatus hernia Oesophagitis 	Discussion of medical vs surgical management of GORD.
	Session 12 Digestive System Disorders 2 <ul style="list-style-type: none"> Diseases and disorders of the stomach and duodenum Diseases of the Small Intestine Infections of the small intestine 	Case study based review of concepts of disease relating to the stomach and oesophagus.
7.	Session 13 Digestive System Disorders 3 <ul style="list-style-type: none"> Diseases of the pancreas 	Case study based review of concepts of disease relating to the small intestine.

	<ul style="list-style-type: none"> • Inflammatory Bowel Disease • Irritable bowel syndrome (IBS) 	
	Session 14 Digestive System Disorders 4 <ul style="list-style-type: none"> • Disorders of the colon and rectum <ul style="list-style-type: none"> ○ Diverticulosis ○ Constipation and problems with defecation ○ Anorectal disorders ○ Haemorrhoids ○ Anal fissure ○ Oesophageal cancer ○ Gastric carcinoma ○ Pancreatic carcinoma ○ Colorectal cancer • Tumours of the digestive system 	Case study based review of concepts of disease relating to the colon and rectum.
NON-TEACHING WEEK (note that make-up classes may be scheduled in this week) Semester 1 - This aligns with the week after Easter so it may fall between weeks 6 to 8. Semester 2 & Online students - The break week falls between Weeks 7 and 8.		
8.	Session 15 Digestive System Disorders 5 <ul style="list-style-type: none"> • Liver and Biliary Tract Disease • Common Clinical features • Hepatic encephalopathy • Acute Liver Failure • Chronic Liver Failure • Chronic Liver Disease • Cirrhosis • Portal hypertension • Viral Hepatitis • Alcoholic Liver Disease • Non-alcoholic fatty liver disease • Inherited Liver Diseases • Haemochromatosis • Tumours of the Liver • Gallstones • Cholecystitis 	Case study based review of concepts of disease relating to the liver and biliary tree.
	Session 16 Urinary System Disorders 1 <ul style="list-style-type: none"> • Examination and investigation of the urinary system • Clinical Features of renal disease 	Case study based review of concepts of renal hypertension and effects.
9.	Session 17 Urinary System Disorders 2 <ul style="list-style-type: none"> • Renal vascular Disease • Glomerular Diseases 	Case study based review of concepts of glomerular diseases.
	Session 18 Urinary System Disorders 3	Case study based review of concepts of tubulointerstitial diseases and urinary tract calculi.

	<ul style="list-style-type: none"> • Tubulo-Interstitial Diseases • Chronic pyelonephritis • Urinary tract calculi • Tumours of the kidney 	
10.	Session 19 Cardiovascular System Disorders 1 <ul style="list-style-type: none"> • Examination and investigation of the cardiovascular system • Clinical Features of cardiovascular disease • Disorders of Heart Rate, Rhythm and Conduction • Complications of cardiovascular disease • Acute circulatory failure • Heart failure 	Case study based review of concepts of disease related to cardiac arrhythmia.
	Session 20 Cardiovascular System Disorders 2 <ul style="list-style-type: none"> • Atherosclerosis • Coronary Heart Disease • Myocardial Infarction 	Case study based review of concepts of atherosclerosis and ischemic heart disease.
11.	Session 21 Cardiovascular System Disorders 3 <ul style="list-style-type: none"> • Vascular Disease • Hypertension 	Embedded Tutorial Activity: Case study based review of concepts of hypertension.
	Session 22 Cardiovascular System Disorders 4 <ul style="list-style-type: none"> • Diseases of the Heart Valves • Diseases of the Myocardium • Diseases of the pericardium • Chronic constrictive pericarditis 	Case study based review of concepts of disease affecting heart valves.
12.	Session 23 Respiratory System Disorders 1 <ul style="list-style-type: none"> • Examination and investigation of the respiratory system • Clinical Features of respiratory disease • Respiratory Failure 	Review of investigation tests for various clinical features of respiratory diseases.
	Session 24 Respiratory System Disorders 2 <ul style="list-style-type: none"> • Obstructive Pulmonary Disease • Cystic fibrosis 	Case study based review of concept of obstructive and congenital respiratory disorders.
13.	Session 25 Respiratory System Disorders 3 <ul style="list-style-type: none"> • Infections of the Lower Respiratory System • Respiratory Diseases caused by Fungi 	Case study based review of concept of respiratory infections.
	Session 26 Respiratory System Disorders 4 <ul style="list-style-type: none"> • Tumours of the bronchus and lung • Interstitial and Infiltrative Pulmonary Disease • Lung disease due to organic dust 	Case study based review of concept of infiltrative diseases and COPD.

	<ul style="list-style-type: none"> • Pulmonary Vascular Disease • Venous thromboembolism • Disorders of the chest wall and pleura • Diseases of the diaphragm • Deformities of the chest wall 	
14.	Non-Teaching Week / Practical Week 1: note that make-up classes may be scheduled in this week.	
15.	Non-Teaching Week / Practical Week 2: note that make-up classes may be scheduled in this week.	
16.	Final Exam Week 1 On campus enrolled students: please refer to the Exam Timetable for your local campus for the exact day and time of exam. Online enrolled students: You are required to sit examinations on campus per the Examination Policy - Higher Education . The Exam Week for subjects offered online is identified in the Online Calendar.	
17.	Final Exam Week 2 Please refer to the Exam Timetable for your local campus for the exact day and time of exam.	