

# SUBJECT OUTLINE



Subject Name:

## Pathology and Clinical Science 1

Subject Code:

## BIOC211

### SECTION 1 - GENERAL INFORMATION

<b>Award/s:</b>	<b>Total Course Credit Points:</b>	<b>Level:</b>
Bachelor of Health Science (Acupuncture)	128	2 <sup>nd</sup> Year
Bachelor of Health Science (Naturopathy)	128	2 <sup>nd</sup> Year
Bachelor of Health Science (Nutritional and Dietetic Medicine)	96	2 <sup>nd</sup> Year
Bachelor of Health Science (Myotherapy)	96	2 <sup>nd</sup> Year
Bachelor of Complementary Medicine	48	2 <sup>nd</sup> Year
<b>Duration:</b>	1 Semester	
<b>Subject Coordinator:</b>	Jenny Yeeles (Adelaide campus)	
<b>Subject is:</b>	Core	<b>Subject Credit Points:</b> 4

### Student Workload:

<b>No. timetabled hours per week:</b>	<b>No. personal study hours per week:</b>	<b>Total hours per week:</b>
6	4	10

### Delivery Mode:

Face to Face (On campus)	2 x 2 hour lectures	2 x 1 hour tutorials
e-Learning (Online)	Narrated PowerPoint presentations Tutorials: Asynchronous tutor moderated discussion forum and activities Student handouts, web-based resources, videos, readings, case studies	
Intensive Delivery (Summer School)	Contact hours are delivered over 5 weeks with 4 x 4 hour days delivered per week Content: combination lecture and tutorial activities Assessment: Summary Table 1 - Week 1; Quiz - Week 2; Summary Table 2 - Week 2; Journal Article Review - Week 4; Summary Table 3 - Week 5; Summary Table 4 - Week 5; Case Study Assignment - Week 6 Full Time Part Time	
<b>Pre-requisites:</b>	BIOH122	
<b>Co-requisites:</b>	SOCQ121	

## 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 and for the advanced pathology and clinical science subjects.

### Learning Outcomes

1. Define the role of clinical medicine and its relationship to the disease process.
2. Identify cellular adaptations and major immune responses to stress (injury) leading to homeostatic imbalance and disease e.g. inflammation, hypersensitivity, autoimmunity, immunodeficiency, neoplasia, and infection.
3. Demonstrate the key characteristics and basic differences in biochemistry, replication and transmission of viruses, prokaryotic and eukaryotic microbes and their management.
4. Describe pathological processes and analyse how they contribute to the development of the signs and symptoms of various diseases.
5. Identify appropriate investigations and recognise abnormal results that aid in clinical management.
6. Develop clinical analysis skills to formulate clinical management plans for various diseases.

### Assessment Tasks

Type	Learning Outcomes Assessed	Session Content Delivered	Due	Weighting
Quiz	1-3	1-9	Week 6	20%
Summary Table 1	4-5	10-13	Week 7	5%
Summary Table 2	4-5	16-19	Week 9	5%
Journal Article Review (1000 words)	4-5	10-18	Week 10	30%
Summary Table 3	4-5	19-22	Week 11	5%
Summary Table 4	4-5	23-26	Week 13	5%
Case Study Assignment (1500 words)	4-6	19-26	Week 14	30%

All written assessments and online quizzes are due at 11:55 p.m. and submitted through the LMS

### 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. Jamison, J. R. (2006). *Differential diagnosis for primary care: A handbook for health care practitioners* (2nd ed.). Edinburgh, Scotland: Churchill Livingstone.
2. Jarvis, C. (2016). *Physical examination & health assessment* (7th ed.). St Louis, MO: Elsevier. [ebook available]
3. Lee, G., & Bishop, P. (2016). *Microbiology and infection control for health professionals* (6th ed.). Frenchs Forest, NSW: Pearson Australia.
4. Murphy, K. (2011). *Janeway's immunobiology* (8th ed.). New York, NY: Garland Science.
5. Pagana, K. D., & Pagana, T. J. (2014). *Mosby's diagnostic and laboratory test reference* (12th ed.). St Louis, MO: Elsevier. [ebook available]
6. 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	Lectures	Tutorials
1.	Session 1 Introduction (Subject Outline / Subject Aims / Assessment / Teaching Resources) <b>An Introduction to Pathophysiology</b> <ul style="list-style-type: none"> <li>• Review of the normal immune response               <ul style="list-style-type: none"> <li>○ Non-specific immunity</li> <li>○ Specific immune responses</li> </ul> </li> <li>• Cell Adaptation</li> <li>• Inflammation               <ul style="list-style-type: none"> <li>○ Acute</li> <li>○ Chronic</li> </ul> </li> <li>• Tissue Repair</li> </ul>	Revision of the concepts of medical terminologies and normal immune response of our body Review and video on inflammation and deep wound healing
	Session 2 <b>The Abnormal Immune Response</b> <ul style="list-style-type: none"> <li>• Hypersensitivity</li> <li>• Autoimmunity</li> <li>• Immunodeficiency</li> </ul>	Review and video on allergies, HIV and AIDs Review of autoimmunity and its importance in overall health
2.	Session 3 <b>Infection</b> <ul style="list-style-type: none"> <li>• Causes of infection</li> <li>• The normal course of an infection</li> <li>• Presenting problems in infections</li> <li>• Common infections and their management</li> </ul>	Review of concept of infection control and prevention using the case scenarios
	Session 4 <b>Bacteria</b> <ul style="list-style-type: none"> <li>• Classification, biochemistry and replication</li> <li>• Normal flora, pathogenic organisms of clinical importance</li> </ul>	Interactive activity sheets on bacterial structure and replication and discussion on current treatments Use of multimedia activities where relevant
3.	Session 5 <b>Viruses</b> <ul style="list-style-type: none"> <li>• Classification, biochemistry and replication</li> <li>• Pathogenic organisms of clinical importance</li> </ul>	Interactive activity sheets on viral structure and replication and discussion on current treatments Use of multimedia activities where relevant

	Session 6 <b>Fungi</b> <ul style="list-style-type: none"> <li>• Classification, biochemistry and replication</li> <li>• Pathogenic organisms of clinical importance</li> </ul> <b>Parasites</b> <ul style="list-style-type: none"> <li>• Classification, biochemistry and replication</li> <li>• Pathogenic organisms of clinical importance</li> </ul>	Interactive activity sheets on fungal and discussion on parasitic biochemistry, replication, transmission and clinical treatments Use of multimedia activities where relevant
4.	Session 7 <b>Neoplasia</b> <ul style="list-style-type: none"> <li>• Three step model of cancer development</li> <li>• Epidemiology</li> <li>• Malignant vs. benign cancer: Patterns of presentation and prognosis</li> <li>• Staging of cancers</li> </ul>	Review on Neoplasia on concepts of cell mutation, carcinogenesis and risk factors for cancer Concept map on Neoplasia
	Session 8 <b>Current Advances in Cancer Pathology</b> <ul style="list-style-type: none"> <li>• Pathophysiology of cancer</li> <li>• Diagnostic measures of cancer</li> <li>• Treatment of cancer</li> </ul>	
5.	Session 9 <b>Pain, Common Symptomatology</b> <ul style="list-style-type: none"> <li>• Pain and pain management</li> <li>• Headache</li> <li>• Nausea and vomiting</li> <li>• Cough and breathlessness</li> <li>• Diarrhoea and constipation</li> <li>• Anorexia and weight change</li> <li>• Fatigue, malaise and lethargy</li> <li>• Fever</li> <li>• Skin changes and rashes</li> </ul>	Design a questionnaire for clients presenting with pain Flow chart on differential diagnosis from some common signs and symptoms <ul style="list-style-type: none"> <li>• Cough</li> <li>• Vomiting</li> <li>• Diarrhoea</li> <li>• Fever</li> <li>• Chest pain</li> <li>• Breathlessness</li> <li>• Skin rashes</li> </ul>
	Session 10 <b>Assessment Support</b>	
6.	Session 11 <b>Gastrointestinal Tract Disorders 1</b> Mouth and upper gastrointestinal tract <ul style="list-style-type: none"> <li>• Examination and investigation of the digestive system</li> <li>• Clinical features of gastrointestinal disease</li> <li>• Diseases of the mouth</li> <li>• Diseases of the oesophagus             <ul style="list-style-type: none"> <li>○ GORD</li> <li>○ Hiatus hernia</li> <li>○ Oesophagitis</li> </ul> </li> </ul>	Discussion of medical vs surgical management of GORD Case study based review of concepts of disease relating to the oesophagus and stomach

	<p>Session 12</p> <p><b>Gastrointestinal Tract Disorders 2</b></p> <p>Stomach and small intestine</p> <ul style="list-style-type: none"> <li>• Diseases and disorders of the stomach and duodenum</li> <li>• Diseases of the small intestine</li> <li>• Infections of the small intestine</li> <li>• Food intolerance</li> </ul>	<p>Case study based review of concepts of disease relating to the stomach and small intestine</p>
7.	<p>Session 13</p> <p><b>Gastrointestinal Tract Disorders 3</b></p> <p>Pancreas and inflammation</p> <ul style="list-style-type: none"> <li>• Diseases of the pancreas</li> <li>• Inflammatory bowel disease</li> <li>• Irritable bowel syndrome (IBS)</li> </ul>	<p>Case study based review of concepts of disease relating to the small intestine and pancreas</p>
	<p>Session 14</p> <p><b>Gastrointestinal Tract Disorders 4</b></p> <p>Large intestine and GI cancers</p> <ul style="list-style-type: none"> <li>• Disorders of the colon and rectum <ul style="list-style-type: none"> <li>○ Diverticulosis</li> <li>○ Constipation and problems with defecation</li> <li>○ Anorectal disorders</li> <li>○ Haemorrhoids</li> <li>○ Anal fissure</li> <li>○ Oesophageal cancer</li> <li>○ Gastric carcinoma</li> <li>○ Pancreatic carcinoma</li> <li>○ Colorectal cancer</li> </ul> </li> <li>• Tumours of the digestive system</li> </ul>	<p>Case study based review of concepts of disease relating to the colon and rectum</p>
<p><b>NON-TEACHING WEEK</b> (note that make-up classes may be scheduled in this week)</p> <p><b>Semester 1</b> - This aligns with the week after Easter so it may fall between Weeks 6 to 8</p> <p><b>Semester 2 &amp; Online students</b> - The non-teaching week falls between Weeks 7 and 8</p>		

8.	Session 15 <b>Gastrointestinal Tract Disorders 5</b> Liver and biliary tract <ul style="list-style-type: none"> <li>• Liver and biliary tract disease</li> <li>• Common clinical features</li> <li>• Hepatic encephalopathy</li> <li>• Acute liver failure</li> <li>• Chronic liver failure</li> <li>• Chronic liver disease</li> <li>• Cirrhosis</li> <li>• Portal hypertension</li> <li>• Viral hepatitis</li> <li>• Alcoholic liver disease</li> <li>• Non-alcoholic fatty liver disease</li> <li>• Inherited liver diseases</li> <li>• Haemochromatosis</li> <li>• Tumours of the liver</li> <li>• Gallstones</li> <li>• Cholecystitis</li> </ul>	Case study based review of concepts of disease relating to the liver and biliary tree
	Session 16 <b>Urinary Tract Disorders 1</b> <ul style="list-style-type: none"> <li>• Examination and investigation of the urinary system</li> <li>• Clinical features of renal disease</li> <li>• Cystitis/ UTIs</li> <li>• Urinary incontinence</li> <li>• Reflux nephropathy / Chronic pyelonephritis</li> </ul>	Case study based review of concepts of renal hypertension and effects
9.	Session 17 <b>Urinary Tract Disorders 2</b> <ul style="list-style-type: none"> <li>• Renal vascular disease</li> <li>• Glomerular diseases</li> <li>• Kidney stones</li> <li>• Nephrocalcinosis</li> </ul>	Case study based review of concepts of glomerular diseases
	Session 18 <b>Urinary System Disorders 3</b> <ul style="list-style-type: none"> <li>• Tubulo-interstitial diseases</li> <li>• Acute / Chronic renal failure</li> <li>• Polycystic kidney disease</li> <li>• Tumours of the kidney</li> </ul>	Case study based review of concepts of tubulointerstitial diseases and urinary tract calculi
10.	Session 19 <b>Cardiovascular System Disorders 1</b> <ul style="list-style-type: none"> <li>• Examination and investigation of the cardiovascular system</li> <li>• Clinical features of cardiovascular disease</li> <li>• Disorders of heart rate, rhythm and conduction</li> <li>• Complications of cardiovascular disease</li> <li>• Acute circulatory failure</li> <li>• Heart failure</li> </ul>	Case study based review of concepts of disease related to cardiac arrhythmia

	Session 20 <b>Cardiovascular System Disorders 2</b> <ul style="list-style-type: none"> <li>• Atherosclerosis</li> <li>• Vascular disease</li> <li>• Hypertension</li> </ul>	Case study based review of concepts of atherosclerosis and ischemic heart disease Case study based review of concepts of hypertension
11.	Session 21 <b>Cardiovascular System Disorders 3</b> <ul style="list-style-type: none"> <li>• Coronary heart disease</li> <li>• Angina</li> <li>• Myocardial infarction</li> </ul>	Case study based review of concepts of heart disorders
	Session 22 <b>Cardiovascular System Disorders 4</b> <ul style="list-style-type: none"> <li>• Diseases of the heart valves</li> <li>• Diseases of the myocardium</li> <li>• Diseases of the pericardium</li> <li>• Chronic constrictive pericarditis</li> </ul>	Case study based review of concepts of disease affecting heart valves
12.	Session 23 <b>Respiratory System Disorders 1</b> <ul style="list-style-type: none"> <li>• Examination and investigation of the respiratory system</li> <li>• Clinical features of respiratory disease</li> <li>• Respiratory failure</li> </ul>	Review of investigation tests for various clinical features of respiratory diseases
	Session 24 <b>Respiratory System Disorders 2</b> Diseases of trachea and bronchi <ul style="list-style-type: none"> <li>• Obstructive pulmonary disease</li> <li>• Cystic fibrosis</li> <li>• Asthma</li> <li>• COPD</li> </ul>	Case study based review of concept of obstructive and congenital respiratory disorders
13.	Session 25 <b>Respiratory System Disorders 3</b> Respiratory infections <ul style="list-style-type: none"> <li>• Pneumonia</li> <li>• Tuberculosis</li> <li>• Infections of the lower respiratory system</li> <li>• Respiratory diseases caused by fungi</li> <li>• Pulmonary vascular disease</li> </ul>	Case study based review of concept of respiratory infections
	Session 26 <b>Respiratory System Disorders 4</b> <ul style="list-style-type: none"> <li>• Tumours of the bronchus and lung</li> <li>• Interstitial and infiltrative pulmonary disease</li> <li>• Lung disease due to organic dust</li> <li>• Disorders of the chest wall and pleura</li> <li>• Diseases of the diaphragm</li> <li>• Deformities of the chest wall</li> </ul>	Case study based review of concept of infiltrative diseases
14.	<b>Non-Teaching Week/Practical Examination Week 1</b> Note that make-up classes may be scheduled in this week	

15.	<b>Non-Teaching Week/Practical Examination Week 2</b> Note that make-up classes may be scheduled in this week
16.	<b>Final Examination Week 1</b> There is no final exam for this subject
17.	<b>Final Examination Week 2</b> There is no final exam for this subject