SUBJECT OUTLINE

ENDEAVOUR College of Natural Health

Subject Name:

Clinical Pathophysiology and Pharmacology 1

Subject Code:

BIOP212

SECTION 1 – GENERAL INFORMATION

Award/s:		**Total Course Credit Points:**	**Level:**
	Bachelor of Health Science (Chinese Medicine)	128	2nd Year
	Bachelor of Health Science (Acupuncture Therapies)	96	2nd Year
Duration:	1 Semester		
Subject is:	Core	**Subject Credit Points:**	4

Student Workload:

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

Delivery Mode*:

☐ **On campus** ☐ **Online / Digital** ☒ **Blended** ☐ **Intensive**

Weekly Session^ Format/s - 2 sessions per week:

All sessions except sessions 21 - 26:

☒ Livestream lectures:	☒ 2 hours	☐ 3 hours	2 x 2 hour lectures per week
☒ eLearning modules / tutorial:	Tutorials: 2 x 1 hour Interactive online learning modules that include learning journal activities, interactive clinical cases or other web-based resources		

Sessions 21 - 26:

☒ On campus workshops / tutorials:	☐ 2 hour	☒ 3 hours	1 x 3 hour practical workshop per session

*All modes are supported by the online learning management system which will include subject documents such as handouts, readings and assessment guides.

^A 'session' is made up of 3 hours of timetabled / online study time per week unless otherwise specified. Each subject has a set number of sessions as outlined above.

Study Pattern:	☒ Full Time ☒ Part Time
Pre-requisites:	BIOA122
Co-requisites:	Nil

SECTION 2 – ACADEMIC DETAILS

Subject Rationale

This subject provides an introduction to the study of pathology and disease states and their pharmacological treatment in conventional medicine. It also integrates the clinical examination techniques used in the assessment of specific signs and symptoms that are essential to clinical competence of health professionals. The pathological processes of inflammation, hypersensitivity, autoimmunity, and immunodeficiency are covered. The pathological mechanisms related to bacterial, viral and fungal infections and their pharmacological treatment are also covered in this subject. The remainder of the course covers the disease states of the musculoskeletal/ neuromuscular system and gastrointestinal system. These systems are taught with respect to their pathophysiology, clinical presentation and diagnostic tests and pharmacological treatments. Upon successful completion of this subject, the students should be able to demonstrate a thorough understanding of pathology and disease states and their pharmacological treatments.

Learning Outcomes

1. Describe pathological processes and their contributions to the development of signs and symptoms of various diseases.
2. Identify key characteristics and basic differences in biochemistry, replication and transmission of viruses, prokaryotic and eukaryotic microbes including management of infections.
3. List common drug classes, indications, main adverse effects, drug-drug interactions and contraindications as applied to various disease states.
4. Discuss pharmacokinetics and pharmacodynamics of drugs at their target sites.
5. Discuss tests used in the diagnosis and management of various diseases.
6. Perform a range of clinical examination techniques to examine vital signs, musculoskeletal, neurological and gastrointestinal systems.

Assessment Tasks

Type	Learning Outcomes Assessed	Session Content Delivered	Due	Weighting
Attendance (Attendance at 100% of indicated sessions is required)	6	21-26	Sessions 21-26 (On campus practical workshops)	P/F
Online Quiz (50 minutes)	1-5	1-6	Week 5	20%

Written Assignment (1500 words)	1-5	7-20	Week 14	40%
Practical Exam (30 minutes)	6	21-26	Week 15	40%
All written assessments and online quizzes are due at 11:55 p.m. and submitted through the LMS.				

Pass Requirements

To achieve a passing grade in this subject students must:

- have a cumulative mark of at least 50%, and
- have submitted all assessment items with a value greater than 15%,
- and meeting attendance requirements. Absences require approved attendance waivers and subsequent make-up activity to be completed.

Prescribed Readings:

Penman, I. D., Ralston, S. H., Strachan, M. W. J., & Hobson, R. P. (Eds.). (2023). *Davidson's principles and practice of medicine* (24th ed.). Elsevier

Recommended Readings:

Bryant, B., & Knights, K. (2022). *Pharmacology for health professionals* (6th ed.). Elsevier. [ebook available].

Jarvis, C., & Eckhardt, A. (2023). *Physical examination & health assessment* (9th ed.). Elsevier.

Norris, T. L. (2019). *Porth's pathophysiology: Concepts of altered health states* (10th ed.). Wolters Kluwer.

Subject Content

Week	Lecture	Tutorial
1.	Session 1 **Introduction to Pathophysiology / Pharmacology / Clinical Assessment** • Cellular adaptions in health & disease. • Medical Terminology .	• Tutorial on cellular adaptions.
	Session 2 **Pathophysiology and contribution to Symptomology** • Pain, nausea, cough, breathless, constipation, diarrhoea, weight changes, fatigue, fever, rash. • Clinical Investigations.	• Tutorial on symptomology & medical terminologies.

2.	Session 3 **Cellular responses/Inflammation** • Abnormal Immune responses. • Hypersensitivity. • Autoimmunity. • Immunodeficiency.	• Tutorial on abnormal immune response
	Session 4 **Introduction to Pharmacology** • Drugs, medicines and health professionals. • Legal and ethical foundations of pharmacotherapy. • Over the counter (OTC) drugs and complementary and alternative medicine (CAM). • Branches of pharmacology • Pharmacodynamics. • Introduction to pharmacokinetics.	• Tutorial on pharmacodynamics and pharmacokinetics.
3.	Session 5 **Fever & Inflammation -Anti-inflammatory drugs (NSAIDS / Steroids)** • Drugs used to treat Fever & Inflammation. • Mechanism of action, indications, interactions, contraindications and adverse effects.	• Tutorial on pain and NSAIDs / steroids.
	Session 6 **Infection** • Organisms that cause infection. • Transmission pathways, presentation and complications.	• Tutorial on sources of infection, transmission of infections and typical course of infection. • Tutorial on epidemics and pandemics.
4.	Session 7 **Bacteria & Antibiotics** • Classification of bacteria. • Drugs used to treat bacterial infections. • Mechanism of action, indications, interactions and adverse effects.	• Tutorial on bacteria, antibiotics and resistance.

	• Types & terminology used to describe bacteria. • Drugs used to treat bacterial infections.	
	Session 8 **Virus & Antivirals** • Classification of viruses. • Drugs used to treat viral infection. • Mechanism of action, indications, contraindications, interactions and adverse effects.	• Tutorial on viral replication and anti-virals.
5.	Session 9 **Fungi and Parasites** • Classification of Fungi and Parasites. • Drugs used to treat fungal and parasitic infection. • Mechanism of action, indications, contraindications, interactions and adverse effects.	• Tutorial on fungi, antifungals and malaria.
	Session 10 **Pain** • Pathways, presentation and types. • Headache. • Opioid Analgesics.	• Tutorial on pain types, pain pathways, headache types • Tutorial on opioid analgesics.
6.	Session 11 **Musculoskeletal system (MSK) 1** • Overview of the musculoskeletal system • Presenting problems in musculoskeletal diseases. • Examination and investigation of the musculoskeletal system. • Principles of management of musculoskeletal disorders.	• Tutorial on clinical manifestations of MSK disease, pattern of joint involvement.
	Session 12 **Musculoskeletal system (MSK) 2 / Pathophysiology / Clinical manifestations** • Osteoarthritis.	• Tutorial on cases of arthritis and other MSK conditions.

	• Inflammatory joint diseases. • Rheumatoid arthritis. • Seronegative Spondylarthritis.	
	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 non-teaching week falls between Weeks 7 and 8.	
7.	Session 13 **Musculoskeletal system (MSK) 3 / Pathophysiology / Clinical manifestations** • Gout. • Bone and joint Infection. • Diseases of bone. • Osteoporosis. • Osteomalacia and rickets. • Paget's disease. • Bone tumours. • Fibromyalgia.	• Tutorial on cases of arthritis, gout and other MSK conditions.
	Session 14 **Musculoskeletal system (MSK) 4 / Pathophysiology / Clinical manifestations** • Neuromuscular disorders. • Gait disorders. • Involuntary movement. • Disorders of the spine and spinal cord. • Diseases of nerve. • Diseases of the neuromuscular junction.	• Tutorial on cases of gait disorders and diseases of spinal cord, nerves and neuromuscular junction.

8.	Session 15
	DMARDs / Gout / Types of Arthritis / Bisphosphonates/ Drugs acting at NMJ
	• Drugs used to treat:
	  ◦ Rheumatoid arthritis (RA).
	  ◦ Gout.
	  ◦ Osteoporosis.
	  ◦ Neuromuscular disorders.	

	• Mechanism of action, indications, contraindications, interactions and adverse effects.	
	Session 16 **Gastrointestinal System (GIT) Disorders 1 / Pathophysiology / Clinical manifestations** • Mouth and upper gastrointestinal tract. • Investigation of the digestive system. • Clinical features of gastrointestinal disease. • Diseases of the mouth. • Diseases of the oesophagus. • GORD. • Hiatus hernia. • Oesophagitis. ◦ Pharmacological treatments to manage GIT disorders.	• Tutorial using case studies of disease states.
9.	Session 17 **Gastrointestinal System (GIT) 2 / Pathophysiology / Clinical manifestations** • Stomach and small intestine. • Diseases and disorders of the stomach and duodenum. • Diseases of the small intestine. • Infections of the small intestine. • Food intolerance. • Pharmacological treatments to management of GIT disorders.	• Tutorial on cases of GORD, Barrett's oesophagus. • Tutorial on prevalence of GORD and drugs used to treat GORD.
	Session 18 **Gastrointestinal System (GIT) 3** • Pancreas and inflammation. • Diseases of the pancreas. • Inflammatory bowel disease. • Irritable bowel syndrome (IBS). • Pharmacological treatments to management of GIT disorders.	• Tutorial on *helicobacter pylori* infections and case of gastritis and peptic ulcer disease (PUD). • Tutorial on drugs for treatment of PUD such as cytoprotective agents, antacids, H2 antagonists.

10.	Session 19 **Gastrointestinal System (GIT) 4 / Pathophysiology / Clinical manifestations** • Large intestine and GI cancers. • Disorders of the colon and rectum. • Diverticulosis. • Constipation and problems with defecation. • Anorectal disorders. • Haemorrhoids. • Oesophageal, Gastric, Pancreatic Colorectal cancer.	• Tutorial on case of Crohn's disease and ulcerative colitis, inflammatory bowel disease. • Tutorial on antispasmodics and antiemetics.
	Session 20 **Gastrointestinal System (GIT) 5 / Pathophysiology / Clinical manifestations** • Liver and biliary tract. • Liver and biliary tract disease. • Common clinical features. • Acute & Chronic liver failure. • Chronic liver disease. • Viral hepatitis. • Alcoholic liver disease. • Non-alcoholic fatty liver disease. • Haemochromatosis. • Liver cancer. • Gallstones. • Cholecystitis. • Pharmacological treatments to management of GIT disorders.	• Tutorial on cases of haemorrhoids diverticulitis. • Tutorial on case of colorectal cancer / appendicitis / pancreatitis. • Tutorial on cases of liver cirrhosis. • Tutorial on hepatitis anti-viral treatment (HAART) and hep C.
11.	Session 21 **General Survey Vital Signs**	• Practical activities on general survey & vital signs
	Session 22 **General Survey and Vital signs**	• Practical activities on general survey & vital signs.
12.	Session 23 **Musculoskeletal system Clinical Examination**	• Practical activities on MSK clinical examination.

	Session 24 **Neurological 1 Clinical Examination**	• Practical activities on Neurological examination.
13.	Session 25 **Neurological 2 Clinical Examination**	• Practical activities on Neurological examination.
	Session 26 **Gastrointestinal Examination**	• Practical activities on abdominal clinical examination.
14.	**Non-Teaching Week/Practical Examination Week 1** Note that make-up classes may be scheduled in this week.	
15.	**Non-Teaching Week/Practical Examination Week 2** Note that make-up classes may be scheduled in this week.	
16.	**Final Examination Week 1** There is no final exam for this subject.	
17.	**Final Examination Week 2** There is no final exam for this subject.	