ENDEAVOUR College of Natural Health

SUBJECT OUTLINE

Subject Name: **Clinical Diagnostic Techniques**

Subject Code: **HMCL223**

SECTION 1 – GENERAL INFORMATION

Award/s:		**Total Course Credit Points:**	**Level:**
	Bachelor of Health Science (Naturopathy)	128	3rd Year
	Bachelor of Health Science (Nutritional and Dietetic Medicine)	96	2nd Year
Duration:	1 Semester		
Subject is:	Core	**Subject Credit Points:**	2

Student Workload:

No. timetabled hours per week: 3	No. personal study hours per week: 2	Total hours per week: 5

Delivery Mode*:

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

Weekly Session^ Format/s - 1 session per week:

☒ Livestream lectures:	☐ 2 hours	☒ 3 hours	1 x 3 hour integrated lecture and tutorial per week

*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.

Note: As they are aware, international students on a Student Visa (500) must attend livestream classes on their local campus, using the Virtual Classrooms provided.

Study Pattern:	☒ Full Time ☒ Part Time
Pre-requisites:	BIOC211, BIOP211
Co-requisites:	BIOS222

SECTION 2 – ACADEMIC DETAILS

Subject Rationale

Building on Pathology and Clinical Science, Pharmacology and Foundations of Human Nutrition, this subject introduces diagnostic and functional assessment techniques useful to the naturopathic and nutrition practitioners. Both in-office tests as well as those conducted through external laboratories are included. These procedures and the information are essential to guide and assess naturopathic and nutritional care. Correct interpretation and

consideration of clinical context is fundamental to safe and effective case management, both in developing a working diagnosis and monitoring the effectiveness and safety of treatment.

Learning Outcomes

1. Describe the range of laboratory and other diagnostic tests available and their role in clinical case management.
2. Demonstrate an understanding of the pathophysiological and biochemical imbalances that lead to alterations in the results of various diagnostic tests that are indicative of chronic disease states.
3. Describe the correct specimen collection and analytical processes for a variety of diagnostic tests.
4. Interpret laboratory and other diagnostic test results in the context of client's presenting complaints and incorporate results into the appropriate holistic case analysis.
5. Select and justify the choice of appropriate diagnostic tests in the context of a patient's presenting symptoms and history for the purpose of informing future treatment.
6. Discuss the context, strengths and limitations of laboratory and other tests in clinical cases.
7. Demonstrate effective communication of laboratory and other diagnostic test results to other health professionals.

Assessment Tasks

Type	Learning Outcomes Assessed	Session Content Delivered	Due	Weighting
Mid-semester Online Quiz (50 min)	1-6	1-6	Week 7	30%
Case Study Assessment 1 (800 words)	1-7	1-7	Week 9	25%
Case Study Assessment 2 (1200 words)	1-7	1-13	Week 14	45%

All written assessments and online quizzes are due at 11:55 p.m. Sunday 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%.

Prescribed Readings:

Pagana, K. D. (2023). *Mosby's diagnostic and laboratory test reference* (16th ed.). Elsevier.

Pathology Tests Explained. (n.d.). Understanding your tests. https://pathologytestsexplained.org.au/

The Royal College of Pathologists of Australasia. (2019, December 4). *RCPA manual*. http://rcpamanual.edu.au/

Recommended Readings:

Chernecky, C. C., & Berger, B. J. (2013). *Laboratory tests and diagnostic procedures* (6th ed.). Elsevier. [ebook available]

Gibson, R. S. (2005). *Principles of nutritional assessment* (2nd ed.). Oxford University Press.

Lord, R. S., & Bralley, J. A. (2008). *Laboratory evaluations for integrative and functional medicine* (2nd ed.). Metametrix Institute.

Nicoll, D., Lu, C. M., Pignone, M., & McPhee, S. J. (2012). *Pocket guide to diagnostic tests* (6th ed.). McGraw-Hill Medical.

Subject Content

Week	Lectures	Tutorials

1.	**Introduction** (Subject Outline / Subject Aims / Assessment / Teaching Resources)
	Introduction to Clinical Diagnostic Techniques
	• Australian Government, Department of Health: National Pathology Accreditation Advisory Council (NPAAC)
	• National Association of Testing Authorities (NATA)
	• Your role in health care landscape
	• Testing standards, populations, and reference ranges (including outliers)
	• Ranges for optimal health
	• Gender and age variation
		• Medico-legal aspects relating to pathology testing, ordering, requests, and interpretation
		• Communication with health practitioners
		  ◦ Patient note taking
		  ◦ Referral letters

2.	**Screening Blood Tests I** • Electrolyte • Liver Function Test • Anion Gap • Kidney function tests	• Case studies ◦ Analysis of normal and abnormal test results and holistic case analysis: E/LFTs, FBCs, Anion Gap and Kidney function tests
3.	**Screening Blood Tests II** • Full Blood Count (FBC) • Iron studies	• Case studies ◦ Analysis of normal and abnormal test results and holistic case analysis: FBC and Iron studies

4.	**Screening Blood Tests III** • Blood lipids • Homocysteine • Inflammatory markers of disease • Urinalysis	• Case studies ◦ Analysis of normal and abnormal test results and holistic case analysis: Lipids, homocysteine, inflammatory markers and urinalysis
5.	**Glucose/Insulin Regulation Analysis** • Glucose / Insulin testing • HbA1c • HOMA-IR	• Case studies ◦ Analysis of normal and abnormal test results and holistic case analysis: Glucose, insulin, HbA1c and HOMA-IR
6.	**Chronic Disease State Diagnostics** • Metabolic syndrome • Diabetes • Anaemia of chronic disease	• Case studies • Analysis of normal and abnormal test results and holistic case analysis: Chronic disease states
7.	**Nutritional Status Analysis** • Micronutrients • Essential fatty acid profiles	• Case studies ◦ Analysis of normal and abnormal test results and holistic case analysis: Micronutrient Assessment
	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	
8.	**Allergy/Autoimmune Testing** • Immunoglobulin testing • Antibody food panels • In-office testing (scratch testing) • Autoantibodies	• Case studies ◦ Analysis of normal and abnormal test results and holistic case analysis: Allergy screening panels and autoantibody testing
9.	**Functional Hormone Testing I** • Cortisol • Reproductive hormones • Menstrual cycle assessment • Pregnancy testing	• Case studies ◦ Analysis of normal and abnormal test results and holistic case analysis: Fertility testing and hormone profile analysis.
10.	**Functional Hormone Testing II** • Thyroid: Thyroid Stimulating Hormone (TSH), fT3, fT4, • Thyroid autoantibodies	• Case studies • Analysis of normal and abnormal test results and holistic case analysis: Thyroid hormone analysis
11.	**Genetic testing** • Types of genetic testing • HLA markers • Ethical issues in genetic testing	• Case study ◦ Analysis of normal and abnormal test results and holistic case analysis: Genetic screening

		○ Ethical and legal aspects of genetic testing from patient and practitioner perspective
12.	**Stool Analysis** ● Clinical stool analysis ● CDSA screening panels ● Microbiome analysis	● Case study ○ Analysis of normal and abnormal test results and holistic case analysis: Stool analysis, gut microbiome tests
13.	**Environmental toxicology** ● Toxicity screening ● Environmental exposure screening panels	● Case study ○ Analysis of normal and abnormal test results: Toxicity screening panels
14.	**Non-Teaching Week/Practical Examination Week 1** Note that make-up classes may be scheduled in this week ***Case Study 2 due***	
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	