

## SUBJECT OUTLINE



Subject Name:

### Clinical Nutritional Medicine

Subject Code:

**NMDC221**

#### SECTION 1 – GENERAL INFORMATION

<b>Award/s:</b>	<b>Total course credit points:</b>	<b>Level:</b>
Bachelor of Health Science (Naturopathy)	128	3 <sup>rd</sup> Year
Bachelor of Health Science (Nutritional and Dietetic Medicine)	96	2 <sup>nd</sup> Year
Bachelor of Health Science (Nutritional Medicine)	96	2 <sup>nd</sup> Year
<b>Duration:</b> 1 Semester		
<b>Subject Coordinator:</b> Kristan Gilbert (Melbourne campus)		
<b>Subject is:</b> Core	<b>Subject Credit Points:</b> 6	

#### Student Workload:

<b>No. timetabled hours per week:</b> <b>9</b>	<b>No. personal study hours per week:</b> <b>6</b>	<b>Total hours per week:</b> <b>15</b>
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#### Delivery Mode:

Face to face                      3 x 3 hour lecture  
Full Time  
Part Time

**Pre-requisites:** NMDF211, NMDM121, BIOC211

**Co-requisites:** BIOS222 (pre- or co-)

#### SECTION 2 – ACADEMIC DETAILS

##### Subject Rationale

This subject integrates and consolidates knowledge gained from previous health science and nutritional and dietetic medicine subjects through an exploration of the nutritional management of various health conditions and individual cases. Students learn treatment strategies that incorporate dietary modification and nutritional management and learn to critically evaluate these from the perspectives of traditional empirical knowledge and evidence-based research. Potential drug-herb-nutrient interactions are critically discussed. Clinical Nutritional Medicine is an essential foundation for clinical practice.

##### Learning Outcomes

1. Apply professional judgement in interpreting clinical symptoms and signs, clinical examinations, and pathology testing in assessment of nutritional status and management of complex pathologies.
2. Analyse and evaluate current research to determine nutritional medicine treatments appropriate for the management of different population groups and a variety of health conditions.
3. Determine appropriate therapeutic goals and strategies for the dietary and nutritional management of clients with complex pathologies.
4. Analyse and evaluate the evidence for potential drug-herb-nutrient interactions in the treatment of individual cases.
5. Discuss the advantages and limitations of nutrition and diet therapy in the management of common health conditions and individual case examples.

Assessment Tasks				
Type	Learning Outcomes Assessed	Session Content Delivered	Session Due	Weighting
Mid Semester Exam (1 hour)	1,3,4,5	1-18	19	20%
Case Study Analysis (1500 words)	1,2,4,5	1-21	Sunday following Session 24	20%
Case Study Analysis (1500 words)	1,2,4,5	1-36	Sunday following Session 36	20%
Final Exam Short Answer & Case Studies (2 hours)	1,3,4,5	1-39	Final Exam Period	40%

#### Prescribed readings:

- Mahan, L. K., & Raymond, J. L. (Eds.) (2016). *Krause's food & the nutrition care process* (14th ed.). St. Louis, MO: Elsevier.

#### Recommended readings:

- Braun, L., & Cohen, M. (2014). *Herbs and natural supplements, an evidence-based guide* (4th ed., Vol. I – II). Sydney, NSW: Churchill Livingstone Elsevier. [ebook available]
- Sarris, J., & Wardle, J. (2014). *Clinical naturopathy: An evidence-based guide to practice* (2nd ed.). Sydney, NSW: Churchill Livingstone Elsevier. [ebook available]
- Stargrove, M. B., Treasure, J., & McKee, D. L. (2008). *Herb, nutrient and drug interactions: Clinical implications and therapeutic strategies*. St Louis, MO: Mosby Elsevier.
- Worsely, T. (2008). *Nutrition promotion, theories and methods, systems and settings*. Cambridge, MA: CABI.

#### Resources:

- Allman, T. (2010). *Nutrition and disease prevention*. New York, NY: Chelsea House. Retrieved from [http://dlx.bookzz.org/genesis/562000/237c0bf981663c79e8582c1c0f63de8e/\\_as/\[Toney\\_Allman\]\\_Nutrition\\_and\\_Disease\\_Prevention\\_\(H\(BookZZ.org\).pdf](http://dlx.bookzz.org/genesis/562000/237c0bf981663c79e8582c1c0f63de8e/_as/[Toney_Allman]_Nutrition_and_Disease_Prevention_(H(BookZZ.org).pdf)
- Dietitians of Canada. (2014). *PEN: practice-based evidence in nutrition*. Retrieved from <http://www.pennutrition.com/index.aspx>

Subject Content	
Week	Lecture
1.	Session 1 <b>Gastrointestinal and Alimentary disease Part I:</b> <ul style="list-style-type: none"> <li>Introduction to clinical decision making. Revision basic pharmacology / drug schedules, history / adverse reactions</li> <li>Overview of principles and considerations in nutritional management of the GIT disorders</li> <li>Nutritional management of gastro-oesophageal reflux disease</li> <li>Review mechanisms of nutrient-drug interactions and discuss relevant interactions</li> </ul>
	Session 2 <b>Gastrointestinal and Alimentary disease Part II:</b>

	<ul style="list-style-type: none"> <li>• Introduction to the importance of communication with concurrent healthcare professionals (e.g. medical practitioners) and the elements of a referral letter</li> <li>• Discussion on the importance of reporting interactions to relevant bodies</li> <li>• Nutritional management of hypochlorhydria, gastritis, peptic ulcers / helicobacter pylori, constipation, diarrhoea and haemorrhoids</li> <li>• Relevant nutrient-drug interactions</li> </ul>
	<p>Session 3</p> <p><b>Gastrointestinal and Alimentary disease Part III:</b></p> <ul style="list-style-type: none"> <li>• Nutritional management of gut dysbiosis, irritable bowel syndrome, cholecystitis, cholelithiasis and pancreatitis.</li> <li>• Therapeutic diets: FODMAP, Lactose-free diet</li> <li>• Relevant nutrient-drug interactions.</li> </ul>
2.	<p>Session 4</p> <p><b>Gastrointestinal and Alimentary disease Part IV:</b></p> <ul style="list-style-type: none"> <li>• Nutritional management of complex GIT disorders; inflammatory bowel disease and coeliac disease</li> <li>• Therapeutic diets: soft diet, gluten free diet, dairy free diet</li> <li>• Relevant nutrient-drug interactions.</li> </ul>
	<p>Session 5</p> <p><b>Hepatic disease:</b></p> <ul style="list-style-type: none"> <li>• Nutritional management of liver detoxification pathways, alcoholic liver disease, steatosis, hepatitis A,B,C.</li> <li>• Nutritional support and modulation of hepatological disorders</li> <li>• Therapeutic diet: reduced-fat diet</li> <li>• Relevant nutrient-drug interactions</li> </ul>
	<p>Session 6</p> <p><b>Immune System Disease Part I:</b></p> <ul style="list-style-type: none"> <li>• Introduction - overview of principles and considerations in nutritional management of the immune system</li> <li>• Immunological basis of food allergy and intolerance</li> <li>• Nutritional management of food allergies and intolerances</li> <li>• Therapeutic diets: Elimination diet, low reactive diet</li> <li>• Relevant nutrient-drug interactions</li> </ul>
3.	<p>Session 7</p> <p><b>Immune System Disease Part II:</b></p> <ul style="list-style-type: none"> <li>• Nutritional management of varicella zoster, herpes simplex 1 &amp; 2, herpes zoster, ringworm, tinea, warts and cellulitis</li> <li>• Relevant nutrient-drug interactions</li> </ul>
	<p>Session 8</p> <p><b>Immune System Disease Part III:</b></p> <ul style="list-style-type: none"> <li>• Nutritional management and support of measles, mumps and rubella, acute food poisoning with vomiting &amp; diarrhoea, parasitic causes of acute diarrhoea and chronic diarrhoea, candidiasis and mononucleosis</li> <li>• Relevant nutrient-drug interactions.</li> </ul>
	<p>Session 9</p> <p><b>Autoimmune Disease:</b></p> <ul style="list-style-type: none"> <li>• Nutritional support and modulation of autoimmune conditions</li> <li>• Therapeutic diet: anti-inflammatory diet</li> <li>• Relevant nutrient-drug interactions</li> </ul>
4.	<p>Session 10</p> <p><b>HIV/AIDS:</b></p>

	<ul style="list-style-type: none"> <li>• Nutritional management of HIV and AIDS</li> <li>• Nutritional support and modulation of quality of life (QoL)</li> <li>• Adjunctive support for individuals on HAART and treatment side effects</li> <li>• Relevant nutrient-drug interactions.</li> </ul>
	<p>Session 11</p> <p><b>Respiratory System Disease Part I:</b></p> <ul style="list-style-type: none"> <li>• Review anatomy and physiology of the respiratory system</li> <li>• Overview of principles and considerations in nutritional management of the respiratory system</li> <li>• Nutritional management for smoking cessation</li> </ul>
	<p>Session 12</p> <p><b>Respiratory System Disease Part II:</b></p> <ul style="list-style-type: none"> <li>• Nutritional management of colds, flu, sinusitis, tonsillitis, allergic rhinitis and asthma</li> <li>• Relevant nutrient-drug interactions</li> </ul>
5.	<p>Session 13</p> <p><b>Respiratory System Disease Part III:</b></p> <ul style="list-style-type: none"> <li>• Nutritional management of acute bronchitis, chronic obstructive airways disease (COAD), emphysema, bronchiectasis and pneumonia.</li> <li>• Relevant nutrient-drug interactions</li> </ul>
	<p>Session 14</p> <p><b>Nervous System Disease Part I:</b></p> <ul style="list-style-type: none"> <li>• Review the biochemical and physiological functions of the nervous system</li> <li>• Overview principles and considerations in nutritional management of nervous system conditions</li> <li>• Nutritional and holistic approaches to pain management</li> <li>• Relevant nutrient-drug interactions</li> </ul>
	<p>Session 15</p> <p><b>Nervous System Disease Part II:</b></p> <ul style="list-style-type: none"> <li>• Nutritional management of anxiety disorders, sleep disorders, depression, bipolar disorder, and schizophrenia</li> <li>• Relevant nutrient-drug interactions</li> </ul>
6.	<p>Session 16</p> <p><b>Nervous System Disease Part III:</b></p> <ul style="list-style-type: none"> <li>• Nutritional management of epilepsy, myasthenia gravis and multiple sclerosis</li> <li>• Nutritional support and modulation of these conditions</li> <li>• Therapeutic diets: ketogenic diet, Swank diet</li> <li>• Relevant nutrient-drug interactions</li> </ul>
	<p>Session 17</p> <p><b>Nervous System Disease Part IV:</b></p> <ul style="list-style-type: none"> <li>• Nutritional management of dementia, Alzheimer's disease and Parkinson's disease</li> <li>• Relevant nutrient-drug interactions</li> </ul>
	<p>Session 18</p> <p><b>Fatigue States:</b></p> <ul style="list-style-type: none"> <li>• Nutritional management of chronic fatigue syndrome and fibromyalgia</li> <li>• Nutritional support of these fatigue states drawing on relevant literature</li> <li>• Relevant nutrient-drug interactions</li> </ul>
7.	<p>Session 19</p> <p><b>Cardiovascular System Disease Part I:</b></p>

	<ul style="list-style-type: none"> <li>• Overview of principles and considerations in nutritional management of the cardiovascular system</li> <li>• Nutritional management of chilblains, Raynaud's disease, varicose veins, varicose ulcers and hyperlipidaemia</li> <li>• Relevant nutrient-drug interactions</li> </ul>
	<p>Session 20</p> <p><b>Cardiovascular System Disease Part II:</b></p> <ul style="list-style-type: none"> <li>• Nutritional strategies for primary prevention and the management of hypertension, atherosclerosis, heart disease (angina, myocardial infarction) and stroke.</li> <li>• Therapeutic diets: Mediterranean diet</li> <li>• Relevant nutrient-drug interactions</li> </ul>
	<p>Session 21</p> <p><b>Cardiovascular System Disease Part III:</b></p> <ul style="list-style-type: none"> <li>• Nutritional management of, anaemias, and haemochromatosis</li> <li>• Dietary considerations for cardiomyopathy and congestive heart failure</li> <li>• Nutritional support and modulation of these conditions drawing upon relevant literature</li> <li>• Relevant nutrient-drug interactions</li> </ul>
	<p><b>NON-TEACHING WEEK</b></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</b> - The break week falls between Weeks 7 and 8.</p>
8.	<p>Session 22</p> <p><b>Integumentary System Disease Part I:</b></p> <ul style="list-style-type: none"> <li>• Overview of principles and considerations in nutritional management of the integumentary system</li> <li>• Review the anatomy and physiology of the integumentary system</li> <li>• Nutritional management of eczema and dermatitis</li> <li>• Relevant nutrient-drug interactions</li> </ul>
	<p>Session 23</p> <p><b>Integumentary System Disease Part II:</b></p> <ul style="list-style-type: none"> <li>• Nutritional management of psoriasis, acne vulgaris and acne rosacea</li> <li>• Relevant nutrient-drug interactions</li> </ul>
	<p>Session 24</p> <p><b>Musculoskeletal System Disease Part 1:</b></p> <ul style="list-style-type: none"> <li>• Overview of principles and considerations in nutritional management of the musculoskeletal system</li> <li>• Review the anatomy and physiology of the musculoskeletal system</li> <li>• Nutritional management of osteoarthritis, gout and osteoporosis</li> <li>• Relevant nutrient-drug interactions</li> </ul>
9.	<p>Session 25</p> <p><b>Musculoskeletal System Disease Part 2:</b></p> <ul style="list-style-type: none"> <li>• Management of complex and multi-system conditions through the use of specific nutritional medicines and their specific biochemical and physiological applications in the management of ankylosing spondylitis and rheumatoid arthritis</li> <li>• Focus on the nutritional support and modulation of these conditions drawing upon relevant literature</li> <li>• Discuss relevant drug interactions and potentiations through an understanding of mechanisms of action of interactions</li> </ul>
	<p>Session 26</p> <p><b>Endocrine System Disease Part I:</b></p> <ul style="list-style-type: none"> <li>• Overview of principles and considerations in nutritional management of the endocrine system</li> <li>• Review the anatomy and physiology of the endocrine system.</li> </ul>

	<ul style="list-style-type: none"> <li>• Nutritional management of hypothyroidism, Hashimoto's disease, hyperthyroidism and Grave's disease</li> <li>• Relevant nutrient-drug interactions</li> </ul>
	<p>Session 27</p> <p><b>Endocrine System Disease Part II:</b></p> <ul style="list-style-type: none"> <li>• Nutritional management of adrenal exhaustion, Addison's disease and Cushing's syndrome</li> <li>• Relevant nutrient-drug interactions</li> </ul>
10.	<p>Session 28</p> <p><b>Endocrine System Disease Part III:</b></p> <ul style="list-style-type: none"> <li>• Nutritional management of dysglycaemias, insulin dependent diabetes mellitus, non-insulin dependent diabetes mellitus, metabolic syndrome and healthy blood glucose regulation</li> <li>• Nutritional support to reduce the risk of adverse health outcomes associated with dysglycaemias</li> <li>• Weight reduction strategies</li> <li>• Therapeutic diets; Low GI diet, Low GL diet</li> <li>• Relevant nutrient-drug interactions</li> </ul>
	<p>Session 29</p> <p><b>Genitourinary and Renal System Disease:</b></p> <ul style="list-style-type: none"> <li>• Overview of principles and considerations in nutritional management of the genitourinary and renal system</li> <li>• Review the biochemical and physiological function of the genitourinary and renal system.</li> <li>• Nutritional management of cystitis, interstitial cystitis, urethritis and renal calculi</li> <li>• Relevant nutrient-drug interactions</li> </ul>
	<p>Session 30</p> <p><b>Male Reproductive System Disease:</b></p> <ul style="list-style-type: none"> <li>• Overview of principles and considerations in nutritional management of the male reproductive system</li> <li>• Review the anatomy and physiology of the male reproductive system</li> <li>• Nutritional management of acute and chronic bacterial prostatitis, non-bacterial prostatitis, epididymitis, benign prostatic hypertrophy, erectile dysfunction and male infertility</li> <li>• Relevant nutrient-drug interactions</li> </ul>
11.	<p>Session 31</p> <p><b>Female Reproductive System Disease Part I:</b></p> <ul style="list-style-type: none"> <li>• Overview of principles and considerations in nutritional management of the female reproductive system</li> <li>• Review the anatomy and physiology of the female reproductive system</li> <li>• Nutritional management of pre-menstrual disorders: PMS-A, PMS-C, PMS-D, PMS-H, PMS-P.</li> <li>• Relevant nutrient-drug interactions</li> </ul>
	<p>Session 32</p> <p><b>Female Reproductive System Disease Part II:</b></p> <ul style="list-style-type: none"> <li>• Nutritional management of dysmenorrhoea, abnormal &amp; dysfunctional uterine bleeding and polycystic ovarian syndrome (PCOS)</li> <li>• Relevant nutrient-drug interactions</li> </ul>
	<p>Session 33</p> <p><b>Female Reproductive System Disease Part III:</b></p> <ul style="list-style-type: none"> <li>• Nutritional management of endometriosis and infertility</li> <li>• Relevant nutrient-drug interactions</li> </ul>
12.	<p>Session 34</p> <p><b>Female Reproductive Health Part I:</b></p> <ul style="list-style-type: none"> <li>• Nutritional management of pregnancy and preconception care</li> <li>• Relevant nutrient-drug interactions</li> </ul>

	Session 35 <b>Female Reproductive Health Part II:</b> <ul style="list-style-type: none"> <li>Nutritional management of menopause</li> <li>Relevant nutrient-drug interactions</li> </ul>
	Session 36 <b>Cancer Part I:</b> <ul style="list-style-type: none"> <li>Overview of cancer aetiology and progression</li> <li>Nutritional approach to cancer prevention</li> <li>Therapeutic diet: Ornish lifestyle program, Vegan diet, juicing</li> </ul>
<b>13.</b>	Session 37 <b>Cancer Part II:</b> <ul style="list-style-type: none"> <li>Conventional treatment – nutrient considerations and potential nutrient interactions and contraindications</li> <li>Nutritional management post conventional treatment</li> <li>Nutritional approaches for improved quality of life and survival</li> </ul>
	Session 38 <b>Paediatric Conditions:</b> <ul style="list-style-type: none"> <li>Nutritional management of otitis media, whooping cough, ADHD, and autistic spectrum disorders drawing upon relevant literature</li> <li>Relevant nutrient-drug interactions</li> </ul>
	Session 39 <b>Multi System Conditions:</b> <ul style="list-style-type: none"> <li>Nutritional management for comorbidities – cardiac, neurological and immune</li> <li>Relevant nutrient-drug interactions</li> </ul>
<b>14.</b>	<b>Non-Teaching Week/Practical Exam Week 1. Note that make-up classes may be scheduled in this week.</b>
<b>15.</b>	<b>Non-Teaching Week/Practical Exam Week 2. Note that make-up classes may be scheduled in this week.</b>
<b>16.</b>	<b>Final Exam Week 1</b> Please refer to the Exam Timetable for your local campus for the exact day and time of exam.
<b>17.</b>	<b>Final Exam Week 2</b> Please refer to the Exam Timetable for your local campus for the exact day and time of exam.