Unit Outline 2014
Faculty of Health

Nutritional Science
8257
This Unit Outline must be read in conjunction with:

a) *UC Student Guide to Policies*, which sets out University-wide policies and procedures, including information on matters such as plagiarism, grade descriptors, moderation, feedback and deferred exams, and is available at *(scroll to bottom of page)*

b) *UC Guide to Student Services*, and is available at *(scroll to bottom of page)*

c) Any additional information specified in section 6h.

### 1: General Information

1a **Unit title:** Nutritional Science

1b **Unit number:** 8257

1c **Teaching Period and year offered:** Semester 1, 2014

1d **Credit point value:** 3

1e **Unit level:** 2

1f **Name of Unit Convener and contact details (including telephone and email)**

   Dr Fiona Lithander  
   Room: 1C136  
   Phone: 6206 8746  
   Email: fiona.lithander@canberra.edu.au

1g **Administrative contact details (including name, location, telephone and email)**

   *Contact during February/March*  
   Mr Marial Kot  
   Room 1C127  
   Phone 6201 5403  
   Email: Marial.kot@canberra.edu.au

   *Contact from the end of March, onwards*  
   Mrs Sheetal Singhal  
   Room: 1C127  
   Phone: 6201 5403  
   Email: Sheetal.Singhal@canberra.edu.au
2: Academic Content

2a Unit description and learning outcomes

This unit provides students with a sound understanding of the roles, functions and metabolic processes of macronutrients, micronutrients and functional components in foods including the impact of nutrient deficiencies and toxicities. Advanced techniques for measuring and assessing the nutrient adequacy of diets of individuals and population groups relevant for an adult population are introduced from which the principles of a healthy diet for adults are addressed through an understanding of Australian dietary reference standards. Interactions between drugs, both recreational and medicinal and nutrients are also explored. This unit is co-taught with unit 8258 Nutritional Science G.

On completion of this unit, students will be able to:
1. describe the function and metabolic processes of macro- and micronutrients and other functional components in foods and their role in maintaining health, and nutritional deficiencies and toxicities
2. critically evaluate techniques for assessment of nutritional status of healthy individuals: anthropometry; biochemical markers; clinical assessment and dietary intake;
3. demonstrate an understanding of drug-nutrient interactions; and
4. demonstrate an understanding of the purpose, application and derivation of the Australian Nutrient Reference Values.

2b Generic skills

Students will have the opportunity to develop the following generic skills in Nutritional Science:

1. **Communication** – The ability to present knowledge, ideas and opinions effectively and communicate within and across professional and cultural boundaries;
2. **Analysis and inquiry** – The ability to gather information, and to analyse and evaluate information and situations in a systematic, creative and insightful way;
3. **Problem solving** – The ability to apply problem-solving processes in novel situations; to identify and analyse problems then formulate and implement solutions;
4. **Working independently and with others** – The ability to plan their own work, be self-directed and use interpersonal skills and attitudes to work collaboratively;
5. **Professionalism and social responsibility** – The capacity and intention to use professional knowledge and skills ethically and responsibly, for the benefit of others and the environment.

2c Prerequisites and/or co-requisites

Introductory Nutrition (9280) and Systematic Anatomy and Physiology (6529). Students enrolled in the Bachelor of Public Health may enrol in this unit without these pre-requisites.

3: Delivery of Unit and Timetable

3a Delivery mode

Nutritional Science is delivered in an on-campus format, this means, a combination of face-to-face and online modes will be used to deliver this unit.

**Face-to-Face lectures:** There will be 9 x 1.5 hour face-to-face lectures. The lectures will be recorded and will be made available on the unit Moodle site after the lecture. In addition, a pdf copy of the lecture slides will be made available on the unit Moodle site prior to the lecture.
Online lectures: There will be 3 x 1.5 hour online lectures. The lectures will be pre-recorded and made available on the unit Moodle site. The lecture will also be accompanied by a pdf copy of the lecture slides.

Tutorials: There will be 9 x 2 hour face-to-face tutorials, including one in the computer lab (week 5). Instructions and readings for the tutorials will be made available on Moodle. To assist students with the self-directed tutorials, online recordings providing instruction will be available on the Moodle site. For more information regarding the tutorials please see the unit Moodle site.

3b Timetable of activities, such as lectures/ tutorials/ practicals/ field classes, showing key dates and topics (Information might be provided in the form of a table)

<table>
<thead>
<tr>
<th>Lecture</th>
<th>Monday</th>
<th>9.00-10.30</th>
<th>(12B02, weeks 1-3, 5-7, 9, 11-13)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tutorial 1:</td>
<td>Monday</td>
<td>10.30-12.30</td>
<td>(12A3, weeks 1-3, 6-7, 10-13, 11A40 week 5)</td>
</tr>
<tr>
<td>Tutorial 2:</td>
<td>Monday</td>
<td>2.30-4.30</td>
<td>(12A3, weeks 1-3, 6-7, 10-13, 7A45 week 5)</td>
</tr>
<tr>
<td>Tutorial 3:</td>
<td>Wednesday</td>
<td>12.30-2.30</td>
<td>(12A3, weeks 1-3, 6-7, 10-13, 11A40 week 5)</td>
</tr>
</tbody>
</table>

**Week 1: 17 - 21 February 2014**

*Lecture 1: (Face-to-face)*
Introduction to the unit

*Lecture 2: (Face-to-face)*
Recap of (a) Introductory Nutrition and (b) Core concepts in nutritional science

*Tutorial 1:*
1. Core concepts in nutritional science
2. Major assignment overview

**Readings from text:**
*Chapter 1: An overview of nutrition*

**Week 2: 24 - 28 February 2014**

Data collection for Major Assignment can take place anytime between 24 February and Week 5. It must be completed in time for the Computer Lab in Week 5.

*Lecture 3: (Face-to-face)*
Assessment of nutritional status

*Tutorial 2:*
Anthropometry; weight, height, waist circumference, mid upper arm circumference (MUAC)

**Readings from text:**
*Appendix E: Nutrition assessment*

**Week 3: 3 - 7 March 2014**

*Lecture 4: (Face-to-face)*
Energy balance; energy intake and energy expenditure

*Lecture 5: (Face-to-face)*
Estimation of energy expenditure

*Tutorial 3:*
Estimating energy requirements for individuals and groups and calculating physical activity levels (PAL)

**Readings from text:**
*Chapter 8: Energy balance and body composition*
*Appendix F: Physical activity and energy requirements*
### Week 4: 10 - 14 March 2014

It is Canberra Day on Monday 10 March; no face-to-face lectures or tutorials this week.

**Complete Quiz 1 (online) by 3pm, Wednesday 12 March (this week)**

<table>
<thead>
<tr>
<th>Lecture 6: (Online)</th>
<th>Tutorial 4:</th>
<th>Readings from text:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nutrient reference values – how are they derived?</td>
<td>Student directed learning on nutrient reference values</td>
<td><em>Chapter 1: Nutrient reference values (p16)</em></td>
</tr>
</tbody>
</table>

### Week 5: 17 - 21 March 2014

<table>
<thead>
<tr>
<th>Lecture 7: (Face-to-face)</th>
<th>Computer lab 1:</th>
<th>Readings from text:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbohydrate; dietary intake and metabolism</td>
<td>All tutorial groups in the computer lab this week</td>
<td><em>Chapter 3: Digestion, absorption and transport</em></td>
</tr>
<tr>
<td></td>
<td>Food Composition using the computer analysis program</td>
<td><em>Chapter 4: The carbohydrates: sugars, starches and dietary fibre</em></td>
</tr>
<tr>
<td></td>
<td>FoodWorks®</td>
<td></td>
</tr>
</tbody>
</table>

### Week 6: 24 - 28 March 2014

<table>
<thead>
<tr>
<th>Lecture 8: (Face-to-face)</th>
<th>Tutorial 5:</th>
<th>Readings from text:</th>
</tr>
</thead>
</table>
| Lipids; dietary fat intake and metabolism | 1. Dietary fat and cardiovascular disease; what is the latest evidence?  
2. Major assignment – review of components | *Chapter 5: The lipids: triglycerides, phospholipids and sterols* |

### Week 7: 31 March – 04 April 2014

**Complete Quiz 2 (online) by 3pm Wednesday 02 April (this week)**

<table>
<thead>
<tr>
<th>Lecture 9: (Face-to-face)</th>
<th>Tutorial 6:</th>
<th>Readings from text:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protein; dietary intake and metabolism</td>
<td>High protein diets and health outcomes</td>
<td><em>Chapter 6: Protein: amino acids</em></td>
</tr>
</tbody>
</table>

### Week 8: 07 – 11 April 2014 – no lectures or tutorials this week

### CLASS FREE PERIOD

### Week 9: 14 - 18 April 2014

<table>
<thead>
<tr>
<th>Lecture 10: (Face-to-face)</th>
<th>Tutorial 7:</th>
<th>Readings from text:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol; dietary intake and metabolism</td>
<td>Metabolic adaptation to short and long-term starvation</td>
<td><em>Appendix C: Alcohol and nutrition (p668)</em></td>
</tr>
<tr>
<td>Lecture 11: (Face-to-face)</td>
<td></td>
<td><em>Chapter 7: Metabolism: transformations and interactions</em></td>
</tr>
<tr>
<td>Integration of macronutrient metabolism</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Week 10: 21 - 25 April 2014; Easter: no face-to-face lectures or tutorials this week

**Major Assignment Due at 3pm, Thursday 24 April, 2014**

Submit to Drop Box on Moodle

<table>
<thead>
<tr>
<th>Lecture 12: (Online)</th>
<th>Tutorial 8 (online):</th>
<th>Readings from text:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fat soluble vitamins; A, D, E and K</td>
<td>Vitamin D, sun exposure and health – current controversies</td>
<td>Chapter 11: The fat soluble vitamins: A, D, E and K</td>
</tr>
</tbody>
</table>

## Week 11: 28 April - 02 May 2014

<table>
<thead>
<tr>
<th>Lecture 13: (Face-to-face)</th>
<th>Tutorial 9:</th>
<th>Readings from text:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water soluble vitamins; B vitamins and vitamin C</td>
<td>Folate and neural tube defects; public health challenges</td>
<td>Chapter 10: The water soluble vitamins: B group vitamins and vitamin C</td>
</tr>
</tbody>
</table>

## Week 12: 05 - 09 May 2014

<table>
<thead>
<tr>
<th>Lecture 14: (Online)</th>
<th>Tutorial 10:</th>
<th>Readings from text:</th>
</tr>
</thead>
</table>
| Minerals and trace elements; dietary intake and metabolism | Student directed learning | Chapter 12: Water and the major minerals  
Chapter 13: The trace minerals  
Highlight 17: Nutrient-drug interactions |

| Lecture 15: (Online) | | |
|----------------------| | |
| Nutrient-drug interactions | | |

## Week 13: 12 - 16 May 2014

| Lecture 16: (Face-to-face) | Tutorial 11: | |
|---------------------------|-------------| |
| Unit revision and final exam information | Major assignment feedback and final exam information | |

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### 4: Unit Resources

#### 4a Lists of required texts/readings

The following text is required for this unit:


Students will be expected to read from this text on a regular basis. The text can be purchased from the Co-Op Bookshop on campus for approximately $126. Copies of the text will be available on short loan in the library, [Link to search page for Unit Readings](#).

#### e-Reserve:

Students will be directed to additional readings on e-reserve as required. E-reserve can be accessed from the Unit Moodle site [http://learnonline.canberra.edu.au/course/view.php?id=10781](http://learnonline.canberra.edu.au/course/view.php?id=10781) or from the following: [Link to search page for eReserve](#) (electronic materials).
4b Materials and equipment

A scientific calculator will be required throughout the unit to undertake assignments, quizzes and tutorial activities. Students will require access to FoodWorks®. FoodWorks® can be accessed from the computers in 7A45, 11A40 and 11A42. A 14-day free trial of FoodWorks® can also be downloaded from: http://www.xyris.com.au/foodworks/download.html.

4c Unit website

The lectures, tutorials, readings, supplementary activities, announcements, discussion boards and other information for this unit can be accessed from the unit Moodle website: http://learnonline.canberra.edu.au/course/view.php?id=10781. Access to this website is an essential requirement of this unit.

To find your unit site online, login to LearnOnline(Moodle) using your student ID. Note that your unit site has a profiles page that displays your name and email address for the benefit of other students. If you prefer to hide your email address, click here for instructions.

5: Assessment

5a Assessment overview

<table>
<thead>
<tr>
<th>Assessment item (including exams held in the exam period)</th>
<th>Due date of assignments</th>
<th>Weighting (total to equal 100%)</th>
<th>Addresses learning outcome(s)</th>
<th>Related generic skill(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment item 1: Quizzes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Online Quiz 1</td>
<td>3pm Wednesday 12 March</td>
<td>10%</td>
<td>1, 2, 4</td>
<td>2, 3</td>
</tr>
<tr>
<td>Online Quiz 2</td>
<td>3pm Wednesday 02 April</td>
<td>10%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assessment 2: Major Assignment: 3-day dietary and physical activity record and analyses of these data</td>
<td>Part A: 3-day weighed dietary and physical activity data to be collected before Computer lab 1 in week 5</td>
<td>5%</td>
<td>1, 2, 4</td>
<td>1, 2, 3, 4</td>
</tr>
<tr>
<td></td>
<td>Part B: Written report due: 3pm Thursday 24 April</td>
<td>25%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assessment item 3: Final examination</td>
<td>During examination period</td>
<td>50%</td>
<td>1, 2, 3, 4</td>
<td>1, 2, 3, 4, 5</td>
</tr>
</tbody>
</table>

Key for generic skills and link to generic skill website:

UC Generic Skills
1 - Communication
2 - Analysis and Inquiry
3 - Problem Solving
4 - Working independently and with others
5 - Professionalism and Social Responsibility
5b Details of each assessment item

Assessment item 1: Online Quizzes

Value: 20% of overall assessment (each quiz is worth 10%)
Number of quizzes: 2
Questions each quiz: 15 Multiple Choice Questions
To be completed: During weeks 4 and 7
Time allocated: 12 minutes each test

Instructions:
1. The quizzes are to be completed during the students’ own time, not during lectures, tutorials or the computer lab.
2. The quizzes are based on the work covered in the previous weeks’ lectures, workshops and readings.
3. Each quiz can be accessed from the Unit Moodle site, and will be open for a period of 48 hours.
4. The following table shows the details of each quiz.
5. After commencing the quiz, you will have 12 minutes to complete the quiz.
6. You will only be able to attempt the quiz once.

<table>
<thead>
<tr>
<th>Online Quiz</th>
<th>Week conducted</th>
<th>Opening time and date</th>
<th>Closing time and date</th>
<th>Lectures, Workshop and readings covered</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Week 4</td>
<td>3pm Monday 10 March</td>
<td>3pm Wednesday 12 March</td>
<td>Lectures: 1, 2, 3, 4, 5, Tutorials 1, 2, 3 and associated readings</td>
</tr>
<tr>
<td>2</td>
<td>Week 7</td>
<td>3pm Monday 31 March</td>
<td>3pm Wednesday 02 April</td>
<td>Lectures: 6, 7, 8, Tutorial 4, 5, Computer Lab 1 and associated readings</td>
</tr>
</tbody>
</table>

Deferred quizzes:
1. Deferred quizzes will only be granted for a good reason (e.g. illness).
2. Requests should be made directly to the unit convenor, with a copy of the request for a deferred quiz form (copy can be found on the Unit Moodle site) and be accompanied by a medical certificate or other evidence (e.g. letter from a counsellor).

Assessment item 2: Major Assignment

There are two parts to the major assignment:
- Part A: Collection of 3-day weighed dietary intake data and physical activity data. You will record everything that you eat and drink over a period of 3 consecutive days, in addition to physical activity data. This data will then be analysed during the computer lab in Week 5.
- Part B: Major assignment written report about the dietary data that you have collected

At the end of this assignment, students will be able to:
- conduct a 3-day dietary intake record using weighed measures (i.e. weighed inventory method)
- analyse dietary intake for energy, macronutrients and micronutrients
- interpret a 3-day physical activity record
- estimate a subject’s energy expenditure using the factorial method and assess energy balance and weight status
critically evaluate the results against the appropriate Nutrient Reference Values (NRVs) recommended for assessing nutrient intakes of an individual subject, including the Acceptable Macronutrient Distribution Range (AMDRs);
critically evaluate the limitations/biases of the methods used for data collection and analysis;

Detailed information about the major assignment requirements, methods of data collection, and writing format for this assignment can be accessed via the Unit Moodle site.

Part A: Collection of 3-day dietary intake data and physical activity data

Value: 5% of overall assessment
Due date: Before computer lab in Week 5. The data will be analysed during this lab so it is essential that you bring the data with you to this lab

Part B: Major assignment – Report

Value: 25% of overall assessment
Due date: 3pm Thursday 24 April; submit to drop box on Moodle
Word limit: no greater than 1,600 words. This word limit does not include references and appendices
Assignment specifics: 1.5 spacing, size 12 font

Detailed information about the major assignment requirements, methods of data collection, writing format and marking criteria for this assignment can be accessed via the Unit Moodle site.

Assessment item 3: Final examination

Value: 50% of overall assessment
Due date: Examination period
Time allowed: 2 hours
Materials allowed: Scientific calculator and an unannotated English dictionary
Test format: Multiple choice questions and essay style/short answer questions

- The multiple choice questions will be based on the work (lectures, tutorials, computer labs and readings) from week 7 to week 14 i.e. lecture 9, 10, 11, 12, 13, 14, 15 and tutorials 6, 7, 8, 9, 10
- The essay style/short answer questions will be based on the work (lectures, tutorials, computer labs and readings) from the entire Semester and will assess your knowledge of the unit and your ability to apply the information to a case scenario or problem-solving situation.

Deferred examinations: Deferred examinations will only be granted for a good reason (e.g. illness). Requests should be made directly to the examination officer and be accompanied by a medical certificate or other evidence (e.g. letter from a counsellor). See http://www.canberra.edu.au/students-services/examinations/alternative-exams.
5c Submission of assessment items

All assessment items will be submitted online on the unit Moodle site. The first page of each assessment submission should include the following information:

Student Name:
Student ID:
Assessment Name:
Word Count (if applicable):

5d Special assessment requirements

Unit requirements:
To pass the unit, students must: check with Tanya
- submit all formal assessment items;
- attain at least 50% in the final exam; and
- attain at least 50% overall (total grade)

Repeat students:
Repeat students are required to comply with the unit requirements to pass the unit. If you are a repeat student please see the course convener regarding assessment.

Extension:
Requests for an extension need to be accompanied by a medical certificate or evidence from a student counsellor and should be submitted to the unit convener prior to the due date of the assessment. If an extension is granted, both the student and the unit convener must sign the extension request form, which sets out the revised conditions. Extension request forms can be obtained from the Toolbox on the Moodle site.

Penalties for late submission of assignment:
Marks will be deducted for an overdue assignment at the rate of 5% of the value of the assignment per day, including weekends. For example, the value of assignment 2 is 30 marks, therefore 1.5 marks will be deducted each day the assignment is late. Assignments that are more than 10 days late will be marked on a pass/fail basis only.

Referencing requirements for all assessments:
Students are required to follow the Vancouver referencing style as outlined on Moodle. The Vancouver referencing guide can be accessed from the Toolbox on the Moodle site.

5e Supplementary assessment

Supplementary assessment will only be offered to a student who has failed only one unit in their final semester of study, with a final grade between 45-49%. For more information about your eligibility to apply for a supplementary exam, refer to the UC SUPPLEMENTARY ASSESSMENT POLICY.

5f Academic Integrity

Students have a responsibility to uphold University standards on ethical scholarship. Good scholarship involves building on the work of others and use of others’ work must be acknowledged with proper attribution made. Cheating, plagiarism, and falsification of data are dishonest practices that contravene academic values. Please see UC's Academic Integrity Policy.

To enhance understanding of academic integrity, it is expected that all students will complete the LearnOnline Academic Integrity Module (AIM) at least once during their course of study. The module is automatically available as a listed site when students log into LearnOnline.
5g Use of text-matching software

The University of Canberra has available, through LearnOnline (Moodle), text-matching software that helps students and staff reduce plagiarism and improve understandings of academic integrity. Known as URKUND, the software matches submitted text in student assignments against material from various sources: the internet, published books and journals, and previously submitted student texts. Click here for further information on the URKUND text-matching software.

6: Student Responsibility

6a Workload

The amount of time you will need to spend on study in this unit will depend on a number of factors including your prior knowledge, learning skill level and learning style. Nevertheless, in planning your time commitments you should note that for a 3cp unit the total notional workload over the semester or term is assumed to be 150 hours. These hours include time spent in classes. The total workload for units of different credit point value should vary proportionally. For example, for a 6cp unit the total notional workload over a semester or term is assumed to be 300 hours.

6b Accessibility unit

Students who need assistance in undertaking the unit because of disability or other circumstances should inform their Unit Convener or UC AccessAbility as soon as possible so the necessary arrangements can be made.

6c Participation requirements

Participation in all lectures and tutorials is highly encouraged. Whilst lectures will be recorded and available on the Introductory Nutrition Moodle site, tutorials will not be recorded.

6d Withdrawal

If you are planning to withdraw please discuss with your unit convener. Please see Withdrawal of Units for further information on deadlines.

6e Required IT skills

Students are expected to have basic computer literacy skills, access to a computer and the internet (in order to access Moodle, Mahara and their university email account for notices). If students do not own a computer, there are computers available in building 11 and building 7 (24 hours/day). Do not submit any work on flash-drive or by email and always keep a backup copy.

Access to Foodworks

Students are required to input data and use the analysis tools on FoodWorks®. FoodWorks® can be accessed from the computers in 7A45 and 11A40. Students can also download a 14-day free trial of FoodWorks® from: http://www.xyris.com.au/foodworks/download.html. Copies of the FoodWorks® data input and analysis are required in the appendix of your assignment.

6f In-Unit Costs

Understanding Nutrition: Australia and New Zealand Edition (approximately $130), scientific calculator (approximately $20-30).

(Note: To calculate your unit fees see: How do I calculate my fees?. The online UC Co-op Textbook Search is available for purchasing text books.)
6g  Work placements, internships or practicums

Nil

6h  Additional information

Information relevant to this unit will be uploaded on the unit Moodle site. You will be required to undertake readings and activities prior to the tutorial sessions. Information on the required readings will be listed in the tutorial notes which will be available on the unit Moodle site.

Please note it is the responsibility of the student to ensure they check the Moodle site for updates and announcements. Students should also regularly check their student email.

The Faculty of Health, Learning and Resource Centre provides a mentor, 2 hours per week to provide assistance to students on assessments, referencing and researching tasks related to this unit (see the Moodle site for the Faculty of Health Learning and Resource Centre for further details regarding the mentor sessions). Availability of the student mentor will also be posted in the Toolbox on the unit Moodle site.

7:  Student Feedback

All students enrolled in this unit will have an opportunity to provide anonymous feedback on the unit at the end of the Semester via the Unit Satisfaction Survey (USS) which you can access by logging into MyUC via the UC homepage: http://www.canberra.edu.au/home/. Your lecturer or tutor may also invite you to provide more detailed feedback on their teaching through an anonymous questionnaire. Amendments based on the feedback from the 2013 Unit Satisfaction Survey have been made to this unit.

8:  Authority of this Unit Outline

Any change to the information contained in Section 2 (Academic content), and Section 5 (Assessment) of this document, will only be made by the Unit Convener if the written agreement of Head of Discipline and a majority of students has been obtained; and if written advice of the change is then provided on the unit site in the learning management system. If this is not possible, written advice of the change must be then forwarded to each student enrolled in the unit at their registered term address. Any individual student who believes him/herself to be disadvantaged by a change is encouraged to discuss the matter with the Unit Convener.