

## EXSS6030: Exercise for Metabolic and Kidney Disease

Ourimbah

Semester 2 - 2023



THE UNIVERSITY OF  
NEWCASTLE  
AUSTRALIA

## OVERVIEW

### Course Description

In Australia, two thirds (67%) of adults are overweight or obese, and therefore at high risk of metabolic complications such as diabetes and chronic kidney disease. This costs the Australian government \$8.6 billion annually, but regular exercise has been proposed as a cost-effective intervention to improve societal health. This course will develop the clinical exercise physiology expertise of students in safely and effectively prescribing and delivering exercise for clients with obesity, diabetes, liver disease, kidney disease, polycystic ovary syndrome and gastrointestinal disease. The pathophysiology, medical and clinical considerations (including management/treatment avenues and common co-morbid conditions), and the role that exercise may play in the various stages of these conditions (including enhancing physical function & quality of life and preventing/managing complications & disease progression) will be explored. Students will also learn to apply techniques to modify behaviour both within and beyond supervised exercise interventions, as well as the roles of other health professionals in delivering multi-disciplinary care to clients with these conditions.

### Assumed Knowledge

EXSS6020 and PHAR6704

### Contact Hours

#### Ourimbah

#### Laboratory \*

Face to Face On Campus

2 hour(s) per Week for 12 Weeks starting Week 1

#### Lecture

Online

1 hour(s) per Week for 12 Weeks starting Week 1

#### Self-Directed Learning

Online

6 hour(s) per Week for 12 Weeks

#### Tutorial \*

Online

1 hour(s) per Week for 12 Weeks starting Week 1

\* This contact type has a compulsory requirement.

### Unit Weighting

10

### Workload

Students are required to spend on average 120-140 hours of effort (contact and non-contact) including assessments per 10 unit course.

# COURSE OUTLINE

[www.newcastle.edu.au](http://www.newcastle.edu.au)

CRICOS Provider 00109J

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# CONTACTS

<b>Course Coordinator</b>	<b>Ourimbah</b> Dr Emily Cox <a href="mailto:Emily.Cox10@newcastle.edu.au">Emily.Cox10@newcastle.edu.au</a> (02) 4985 4515 Consultation: By appointment
<b>Teaching Staff</b>	Other teaching staff will be advised on the course Canvas site.
<b>School Office</b>	<b>School of Environmental and Life Sciences</b> SO-104 Science Offices OURIMBAH <a href="mailto:Science-SELS@newcastle.edu.au">Science-SELS@newcastle.edu.au</a> (02) 4349 4568 / (02) 4348 4115 9am-5pm (Mon-Fri)

# SYLLABUS

<b>Course Content</b>	<ol style="list-style-type: none"><li>1. Pathophysiology, and pharmacological/medical management of metabolic and kidney disease.</li><li>2. Supervised and client-managed exercise for metabolic and kidney disease, including considerations, contraindications, and current recommendations.</li><li>3. Exercise-related health and behaviour change.</li><li>4. Multi-disciplinary care of metabolic and kidney disease.</li><li>5. Communication with stakeholders including other health and exercise professionals and clients.</li></ol>
<b>Course Learning Outcomes</b>	<p><b>On successful completion of this course, students will be able to:</b></p> <ol style="list-style-type: none"><li>1. Describe the aetiology, pathophysiology and pharmacological/medical management of metabolic and kidney disease, including the implications for exercise prescription.</li><li>2. Design, justify and deliver safe and effective assessments and exercise interventions for people with metabolic and kidney disease, in consideration of clinical and psychosocial factors.</li><li>3. Recognise and respond to adverse clinical signs and symptoms that typically present during and between exercise sessions in people with metabolic and kidney disease.</li><li>4. Implement effective behaviour change strategies to improve exercise adherence and self-management in metabolic and kidney disease.</li><li>5. Demonstrate appropriate verbal and non-verbal communication to suit different stakeholders (i.e. client and/or general population, versus other health and exercise professionals).</li><li>6. Describe the role of accredited exercise physiologists in managing metabolic and kidney disease within a multi-disciplinary team.</li></ol>

# COMPULSORY REQUIREMENTS

In order to pass this course, each student must complete ALL of the following compulsory requirements:

## Contact Hour Requirements:

- Laboratory There is a compulsory attendance requirement in this course. Students must attend a minimum of 80% of laboratory sessions.
- Tutorial There is a compulsory attendance requirement in this course. Students must attend a minimum of 80% of tutorial sessions.

## Course Assessment Requirements:

- Assessment 3 - Practical Demonstration: Pass Requirement - Students must pass this assessment item to pass the course. There is a compulsory requirement that students must pass this assessment to pass the course.

# SCHEDULE

Week	Week Begins	Topic	Learning Activity	Assessment Due
1	17 Jul	Obesity	Online Tutorial: Understanding exercise non-adherence  Laboratory: Special considerations for testing & training people with obesity	Online Learning Activity (2%)
2	24 Jul	Metabolic Syndrome	Online Tutorial: Promoting exercise adherence  Laboratory: Testing protocols for people with metabolic disease	Online Learning Activity (2%)
3	31 Jul	Liver Disease & Pre-Diabetes	Online Tutorial: High-intensity interval training for metabolic disease  Laboratory: Special considerations for testing & training people with liver disease	Online Learning Activity (2%)
4	7 Aug	Type 2 Diabetes	Online Tutorial: Exercise safety in people with type 2 diabetes  Laboratory: Special considerations for testing & training people with type 2 diabetes	Online Learning Activity (2%)
5	14 Aug	Type 1 Diabetes	Online Tutorial: Language for diabetes  Laboratory: Special considerations for testing & training people with type 1 diabetes	Online Learning Activity (2%)
6	21 Aug	Gestational Diabetes & Pregnancy	Online Tutorial: Pregnancy & female pelvic floor anatomy  Laboratory: Special considerations for testing & training people with	Online Learning Activity (2%)

			gestational diabetes/pregnancy	
7	28 Aug	Polycystic Ovary Syndrome	Online Tutorial: Special considerations for testing & training women with polycystic ovary syndrome  Laboratory: In-class presentation assessment	Online Learning Activity (2%)  Face-to-Face Presentation (20%)
8	4 Sep	Chronic Kidney Disease	Online Tutorial: Exercise during dialysis/with a fistula in situ  Laboratory: Special considerations for testing & training people with chronic kidney disease	Online Learning Activity (2%)
9	11 Sep	Organ Transplant	Online Tutorial (2 hours): Special considerations for testing & training people pre- and post-organ transplant  Laboratory: NO CLASS	Online Learning Activity (2%)
10	18 Sep	Gastrointestinal Disorders	Online Tutorial: Testing & training in the home environment  Laboratory: Group exercise sessions for people with metabolic and/or kidney disease	Online Learning Activity (2%)
<b>Mid Term Break</b>				
<b>Mid Term Break</b>				
11	9 Oct	NIL	Online Tutorial: NO CLASS  Laboratory: In-class practical assessment	Practical Examination (30%)
12	16 Oct	Interdisciplinary Care of Metabolic & Kidney Disease	Online Tutorial: Special considerations for testing & training people with complex, comorbid metabolic and/or kidney disease  Laboratory: Interdisciplinary care of metabolic disease (workshop with Podiatry students)	
13	23 Oct			
<b>Examination Period</b>				Formal Written Examination (30%)
<b>Examination Period</b>				

# ASSESSMENTS

This course has 4 assessments. Each assessment is described in more detail in the sections below.

	Assessment Name	Due Date	Involvement	Weighting	Learning Outcomes
1	Weekly Online Learning Activities	Tuesday's 11:59pm, Weeks 1-10	Individual	20%	1, 2, 3, 4, 6
2	Face-to-face Presentation	In laboratory time, Week 7	Individual	20%	1, 5
3	Practical Exam*	Wednesday, Week 11	Individual	30%	1, 2, 4, 5, 6
4	End of Semester Formal Written Exam	Formal Examination Period	Individual	30%	1, 2, 3, 4, 6

\* This assessment has a compulsory requirement.

## Late Submissions

The mark for an assessment item submitted after the designated time on the due date, without an approved extension of time, will be reduced by 10% of the possible maximum mark for that assessment item for each day or part day that the assessment item is late. Note: this applies equally to week and weekend days.

## Assessment 1 - Weekly Online Learning Activities

Assessment Type	Online Learning Activity
Description	The online activities may take a number of different formats but will generally be small tasks such as an online quiz or Canvas discussion board post. There are a total of 10 online activities spread from weeks 1-10. Therefore, each weekly online activity will be worth 2%.
Weighting	20%
Due Date	Tuesday's 11:59pm, Weeks 1-10
Submission Method	Online
Assessment Criteria	Provided on Canvas
Return Method	Online
Feedback Provided	Online - Feedback will be provided via Canvas upon completion of the online activity.

## Assessment 2 - Face-to-face Presentation

Assessment Type	Presentation
Description	Each student will be required to individually develop and deliver a 10-minute education presentation (including a PowerPoint) aimed at educating clients on a topic that will be allocated to them. Topics may include, but are not limited to, exercise guidelines, healthy eating guidelines, medications, or strategies for behaviour change.
Weighting	20%
Due Date	In laboratory time, Week 7
Submission Method	In Class
Assessment Criteria	Provided on Canvas
Return Method	Not Returned
Feedback Provided	Online - Written feedback will be provided online within two weeks of submission. Any changes to this will be communicated via Canvas.

## Assessment 3 - Practical Exam

Assessment Type	Practical Demonstration
Description	Each student will be given a case study about a client with a primary diagnosis of metabolic and/or kidney disease. During the exam, students will be required to identify all key aspects related to the primary diagnosis and the subsequent impact on exercise prescription; develop and justify an initial assessment and an exercise program for that client; and professionally instruct and cue an assessment and exercise, as selected by the examiner.
Weighting	30%
Compulsory Requirements	Pass Requirement - Students must pass this assessment item to pass the course.

<b>Due Date</b>	Wednesday, Week 11
<b>Submission Method</b>	In Class
<b>Assessment Criteria</b>	Provided on Canvas
<b>Return Method</b>	Not Returned
<b>Feedback Provided</b>	Online - Written feedback will be provided online within two weeks of submission. Any changes to this will be communicated via Canvas.
<b>Opportunity to Reattempt</b>	Students WILL be given the opportunity to reattempt this assessment. Students who do not obtain 50% in their first attempt will be given the opportunity to re-attempt the assessment to demonstrate competency. If the student passes the re-attempt, then the mark will be capped at 50%.

## Assessment 4 - End of Semester Formal Written Exam

<b>Assessment Type</b>	Formal Examination
<b>Description</b>	The examination will utilise short and long answer questions to cover all material delivered throughout the course.
<b>Weighting</b>	30%
<b>Due Date</b>	Formal Examination Period
<b>Submission Method</b>	Formal Exam
<b>Assessment Criteria</b>	Correct/incorrect answers to questions
<b>Return Method</b>	Not Returned
<b>Feedback Provided</b>	No Feedback

## ADDITIONAL INFORMATION

### Grading Scheme

This course is graded as follows:

Range of Marks	Grade	Description
85-100	High Distinction (HD)	Outstanding standard indicating comprehensive knowledge and understanding of the relevant materials; demonstration of an outstanding level of academic achievement; mastery of skills*; and achievement of all assessment objectives.
75-84	Distinction (D)	Excellent standard indicating a very high level of knowledge and understanding of the relevant materials; demonstration of a very high level of academic ability; sound development of skills*; and achievement of all assessment objectives.
65-74	Credit (C)	Good standard indicating a high level of knowledge and understanding of the relevant materials; demonstration of a high level of academic achievement; reasonable development of skills*; and achievement of all learning outcomes.
50-64	Pass (P)	Satisfactory standard indicating an adequate knowledge and understanding of the relevant materials; demonstration of an adequate level of academic achievement; satisfactory development of skills*; and achievement of all learning outcomes.
0-49	Fail (FF)	Failure to satisfactorily achieve learning outcomes. If all compulsory course components are not completed the mark will be zero. A fail grade may also be awarded following disciplinary action.

\*Skills are those identified for the purposes of assessment task(s).

### Attendance

Attendance/participation will be recorded in the following components:

- Laboratory (Method of recording: Roll Call)
- Tutorial (Method of recording: Roll Call)

### Communication Methods

Communication methods used in this course include:

- Canvas Course Site: Students will receive communications via the posting of content or announcements on the Canvas course site.

- Email: Students will receive communications via their student email account.
- Face to Face: Communication will be provided via face to face meetings or supervision.

**Course Evaluation**

Each year feedback is sought from students and other stakeholders about the courses offered in the University for the purposes of identifying areas of excellence and potential improvement.

**Oral Interviews (Vivas)**

As part of the evaluation process of any assessment item in this course an oral examination (viva) may be conducted. The purpose of the oral examination is to verify the authorship of the material submitted in response to the assessment task. The oral examination will be conducted in accordance with the principles set out in the [Oral Examination \(viva\) Procedure](#). In cases where the oral examination reveals the assessment item may not be the student's own work the case will be dealt with under the [Student Conduct Rule](#).

**Academic Misconduct**

All students are required to meet the academic integrity standards of the University. These standards reinforce the importance of integrity and honesty in an academic environment. Academic Integrity policies apply to all students of the University in all modes of study and in all locations. For the Student Academic Integrity Policy, refer to <https://policies.newcastle.edu.au/document/view-current.php?id=35>.

**Adverse Circumstances**

The University acknowledges the right of students to seek consideration for the impact of allowable adverse circumstances that may affect their performance in assessment item(s). Applications for special consideration due to adverse circumstances will be made using the online Adverse Circumstances system where:

1. the assessment item is a major assessment item; or
2. the assessment item is a minor assessment item and the Course Co-ordinator has specified in the Course Outline that students may apply the online Adverse Circumstances system;
3. you are requesting a change of placement; or
4. the course has a compulsory attendance requirement.

Before applying you must refer to the Adverse Circumstance Affecting Assessment Items Procedure available at:

<https://policies.newcastle.edu.au/document/view-current.php?id=236>

**Important Policy Information**

The Help button in the Canvas Navigation menu contains helpful information for using the Learning Management System. Students should familiarise themselves with the policies and procedures at:

<https://www.newcastle.edu.au/current-students/no-room-for/policies-and-procedures> that support a safe and respectful environment at the University.

*This course outline was approved by the Head of School. No alteration of this course outline is permitted without Head of School approval. If a change is approved, students will be notified and an amended course outline will be provided in the same manner as the original.*

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