



MEDI2103

Alimentary System, Nutrition and Metabolism

Session 1, In person-scheduled-weekday, North Ryde 2022

Medicine, Health and Human Sciences Faculty level units

Contents

| | |
|---------------------------------------|----|
| <u>General Information</u> | 2 |
| <u>Learning Outcomes</u> | 3 |
| <u>General Assessment Information</u> | 3 |
| <u>Assessment Tasks</u> | 4 |
| <u>Delivery and Resources</u> | 7 |
| <u>Unit Schedule</u> | 8 |
| <u>Policies and Procedures</u> | 10 |

Disclaimer

Macquarie University has taken all reasonable measures to ensure the information in this publication is accurate and up-to-date. However, the information may change or become out-dated as a result of change in University policies, procedures or rules. The University reserves the right to make changes to any information in this publication without notice. Users of this publication are advised to check the website version of this publication [or the relevant faculty or department] before acting on any information in this publication.

General Information

Unit convenor and teaching staff

Unit Convenor

Mirjana Strkalj

mirjana.strkalj@mq.edu.au

Contact via Email

Email for appointment

Lecturer

Christine Chiu

christine.chiu@mq.edu.au

Contact via Email

Email for appointment

Lecturer

Elena Shklovskaya

elena.shklovskaya@mq.edu.au

Contact via Email

Email for appointment

Lecturer

Marina Junqueira Santiago

marina.junqueirasantiago@mq.edu.au

Contact via Email

Email for appointment

Credit points

10

Prerequisites

Admission to BCLinSc and (HLTH108 or ANAT1001) and (MEDI209 or MEDI219 or MEDI2200)

Corequisites

Co-badged status

Unit description

In this unit you will develop an in depth understanding of the anatomy, physiology and biochemistry of the alimentary system. You will be provided with a unique learning experience that encompasses anatomy wet laboratory sessions, simulation laboratory classes, and interactive tutorials. Gross and surface anatomy will be taught alongside gastrointestinal physiology and the major metabolic pathways (carbohydrate, protein and fatty acid metabolism). You will engage in clinical problem solving supported by relevant medical and scientific literature and discuss the ways in which scientific advances translate into clinical practice.

Important Academic Dates

Information about important academic dates including deadlines for withdrawing from units are available at <https://www.mq.edu.au/study/calendar-of-dates>

Learning Outcomes

On successful completion of this unit, you will be able to:

ULO1: Describe the anatomy of the gastrointestinal system, including structural components and structural organisation of the abdominopelvic wall and viscera.

ULO2: Describe the physiology of the gastrointestinal system, including regulation of motility, secretory function and absorption.

ULO3: Describe the pathways involved in the metabolism of glucose, fatty acids and amino acids.

ULO4: Describe the hormonal mechanisms that regulate food intake and metabolism.

ULO5: Explain anatomical and physiological changes that occur in common gastrointestinal diseases.

ULO6: Discuss case studies by organising and integrating knowledge of gastrointestinal structures and functions (as well as concepts of pathophysiology) and by critically evaluating evidence from scientific and medical literature.

General Assessment Information

Grade descriptors and other information concerning grading are contained in Schedule 1 of the Macquarie University Assessment Policy, available at <https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policies/assessment>.

All final grades are determined by a grading committee, in accordance with the Macquarie University [Assessment Policy](#), and are not the sole responsibility of the Unit Convenor.

Students will be awarded a final grade and a mark which must correspond to the grade descriptors specified in the [Assessment Procedure](#) (clause 128).

To pass this unit, students must demonstrate sufficient evidence of achievement of the learning outcomes, meet any ungraded requirements including professionalism and achieve a final mark of 50 or better.

Further details for each assessment task will be available on iLearn.

Student Professionalism

In the Faculty of Medicine, Health and Human Sciences, professionalism is a key capability embedded in all our courses. As part of developing professionalism, students are expected to attend all small group interactive sessions including tutorials, as well as clinical- and laboratory-based practical sessions.

Students are expected to attend a minimum of 80% of all small group interactive sessions. If you are unable to attend a small group activity, please refer to the iLearn site regarding further action.

Similarly, as part of developing professionalism, students are expected to submit all work by the due date. Applications for assessment task extensions must be supported by appropriate evidence and submitted via www.ask.mq.edu.au. For further details, please refer to the Special Consideration Policy available at <https://students.mq.edu.au/study/my-study-program/special-consideration>.

Late Submission

Late submissions will receive a 5% per day penalty including weekends and public holidays. If you submit the assessment task 10 days or more beyond the due date, without an approved extension, you will be awarded a maximum of 50% of the overall assessment marks. For example:

| Due date | Received | Days late | Deduction | Raw mark | Final mark |
|-------------|-------------|-----------|-----------|----------|------------|
| Friday 14th | Monday 17th | 3 | 15% | 75% | 60% |

Assessment Tasks

| Name | Weighting | Hurdle | Due |
|---|-----------|--------|-------------------------------------|
| Online Quiz | 5% | No | Week 4 |
| Anatomy and Physiology Test | 25% | No | Week 7 |
| Video Infographic | 20% | No | Week 10 |
| Final Exam | 50% | No | Week 14-16 (University Exam Period) |

Online Quiz

Assessment Type ¹: Quiz/Test

Indicative Time on Task ²: 2 hours

Due: **Week 4**

Weighting: **5%**

Online quiz assessing integrated knowledge of anatomy and physiology (MCQ, problem solving questions)

On successful completion you will be able to:

- Describe the anatomy of the gastrointestinal system, including structural components and structural organisation of the abdominopelvic wall and viscera.
- Describe the physiology of the gastrointestinal system, including regulation of motility, secretory function and absorption.
- Describe the pathways involved in the metabolism of glucose, fatty acids and amino acids.
- Describe the hormonal mechanisms that regulate food intake and metabolism.
- Explain anatomical and physiological changes that occur in common gastrointestinal diseases.

Anatomy and Physiology Test

Assessment Type ¹: Quiz/Test

Indicative Time on Task ²: 10 hours

Due: **Week 7**

Weighting: **25%**

In class practical test assessing integrated anatomy and physiology knowledge of the alimentary system.

On successful completion you will be able to:

- Describe the anatomy of the gastrointestinal system, including structural components and structural organisation of the abdominopelvic wall and viscera.
- Describe the physiology of the gastrointestinal system, including regulation of motility, secretory function and absorption.
- Explain anatomical and physiological changes that occur in common gastrointestinal diseases.

Video Infographic

Assessment Type ¹: Media presentation

Indicative Time on Task ²: 10 hours

Due: **Week 10**

Weighting: **20%**

Creation of a three minute video that provides a newly diagnosed patient with relevant medical and scientific information about the disease.

On successful completion you will be able to:

- Describe the anatomy of the gastrointestinal system, including structural components and structural organisation of the abdominopelvic wall and viscera.
- Describe the physiology of the gastrointestinal system, including regulation of motility, secretory function and absorption.
- Describe the pathways involved in the metabolism of glucose, fatty acids and amino acids.
- Describe the hormonal mechanisms that regulate food intake and metabolism.
- Explain anatomical and physiological changes that occur in common gastrointestinal diseases.
- Discuss case studies by organising and integrating knowledge of gastrointestinal structures and functions (as well as concepts of pathophysiology) and by critically evaluating evidence from scientific and medical literature.

Final Exam

Assessment Type ¹: Examination

Indicative Time on Task ²: 20 hours

Due: **Week 14-16 (University Exam Period)**

Weighting: **50%**

Formal written exam using a combination of question types assessing content delivered across the session. This task is completed under examination conditions during the University examination period.

On successful completion you will be able to:

- Describe the anatomy of the gastrointestinal system, including structural components and structural organisation of the abdominopelvic wall and viscera.
- Describe the physiology of the gastrointestinal system, including regulation of motility, secretory function and absorption.
- Describe the pathways involved in the metabolism of glucose, fatty acids and amino acids.
- Describe the hormonal mechanisms that regulate food intake and metabolism.
- Explain anatomical and physiological changes that occur in common gastrointestinal diseases.
- Discuss case studies by organising and integrating knowledge of gastrointestinal

structures and functions (as well as concepts of pathophysiology) and by critically evaluating evidence from scientific and medical literature.

¹ If you need help with your assignment, please contact:

- the academic teaching staff in your unit for guidance in understanding or completing this type of assessment
- the [Writing Centre](#) for academic skills support.

² Indicative time-on-task is an estimate of the time required for completion of the assessment task and is subject to individual variation

Delivery and Resources

Unit Organisation

This unit runs over a 13 week session. Each week students will complete two hour pre-recorded lectures, a 90 minute on-campus tutorial, and a two hour practical classes during Weeks 2-6. Further information is available in iLearn.

iLearn: This unit's iLearn site will provide resources for students, including:

- Assessment details
- Online pre-recorded lecture material
- Tutorial material
- Preparation and consolidation material

Unit materials and readings

The following texts are recommended. Copies are available electronically via MQ Library - ClinicalKey Student and/or held in library reserve.

- Anatomy: Moore, K.L., Dalley, A.F. & Agur, A.M.R. (2017). *Clinically oriented anatomy* (8th ed). Lippincott Williams & Wilkins.
- Alternate Anatomy: Drake RL & Lowrie (2020) *Gray's Anatomy for Students*. (4th ed). Elsevier.
- Anatomy Atlas: Abrahams, P.H. *et al.* (2008) *McMinn's clinical atlas of human anatomy* (6th ed). Elsevier.
- Embryology: Moore and Persaud. (2020) *The developing human: Clinically oriented embryology* (11th ed). Elsevier.

- Physiology: Guyton and Hall. (2021) *Guyton and Hall Textbook of Medical Physiology* (14th ed). Elsevier.
- Biochemistry: Baynes. (2019) *Medical Biochemistry* (5th ed). Elsevier

Technology and equipment

MQ is a BYOD environment where students are encouraged to bring their personally owned devices to class and to use these devices to access information and study. Teaching rooms are equipped with audio-visual equipment. To study optimally when off campus you will need to have access to a reliable internet connection to retrieve unit information, engage with online resources, and complete and submit assessments.

Consultation with staff

Staff will be available for individual consultations, please see the iLearn site for information on staff availability for consultation.

Unit Schedule

| WEEK | LECTURES 2 h (ONLINE) | TUTORIALS 1.5 h | PRACTICALS 2 h | TESTS AND EXAMS |
|----------------------|--|---|--|-----------------------|
| W1 21 February | Introduction to the unit 1. Oral cavity and principles of mastication 2. Structures of the neck and anatomy of the pharynx and principles of swallowing | TUTORIAL Oral cavity | | <u>Formative quiz</u> |
| W2 28 February | 3. Histology of the oral cavity and pharynx, anatomy and histology of the oesophagus Salivary glands 4. Development of the structures of the head and neck | TUTORIAL Structures of the neck, pharynx | <u>ANAT LAB</u> Oral cavity Muscles of mastication and facial expression, temporal, infratemporal and pterygopalatine fossae | <u>Formative quiz</u> |

| | | | | |
|--------------------------------------|---|---|--|---|
| <p>W3 7 March</p> | <p>5. General organization of the abdominal wall and cavity, peritoneum</p> <p>6. Stomach and small intestine</p> | <p>TUTORIAL</p> <p>Abdominal wall and cavity</p> | <p><u>ANATOMY LAB</u></p> <p>Abdominal wall, peritoneum, and abdominal viscera</p> | |
| <p>W4 14 March</p> | <p>7. Accessory digestive organs (liver, gall bladder and pancreas)</p> <p>8. Gastrointestinal secretion</p> | <p>TUTORIAL</p> <p>Structure and function of the accessory digestive organs</p> <p>Gastrointestinal secretion</p> | <p><u>ANAT LAB</u></p> <p>Oral cavity</p> <p>Muscles of mastication and facial expression, temporal, infratemporal and pterygopalatine fossae</p> | <p><u>Formative quiz</u></p> |
| <p>W5 21 March</p> | <p>9. Large intestine</p> <p>10. Gastrointestinal absorption</p> | <p>TUTORIAL</p> <p>Anatomy of the large intestine and GI absorption</p> | <p><u>ANAT LAB</u></p> <p>Oral cavity</p> <p>Muscles of mastication and facial expression, temporal, infratemporal and pterygopalatine fossae</p> | <p><u>Online quiz 5%</u></p> <p>Tests topics from W1-W4 included</p> |
| <p>W6 28 March</p> | <p>11. Physiology of the smooth muscle and regulation of GI motility</p> <p>12. Anatomy of the pelvis and general organization of the pelvic viscera, rectum and anal canal</p> | <p>TUTORIAL</p> <p>Anatomy of the pelvis and pelvic viscera</p> | <p><u>ANATOMY LAB</u></p> <p>Anatomy of the accessory digestive organs, large intestine, pelvis</p> | |
| <p>W7 4 April</p> | <p>13. Embryology of the GI</p> <p>14. Gut microbiome (online)</p> | <p>NO TUTORIAL CLASSES IN W 7</p> | | <p><u>In class practical test 25%</u></p> |
| <p>11-26 April</p> | <p>SEMESTER 1 BREAK</p> | | | |
| <p>W8 26 April</p> | <p>15. Common disorders of GI</p> <p>16. Pharmacology of GI</p> | <p>TUTORIAL</p> <p>Pharmacology of GI</p> | | <p><u>Formative quiz</u></p> |

| | | | |
|-----------------------------|--|--------------------------|--|
| W9 2 May | 17- 18. Gut Immunity | TUTORIAL Gut immunity | |
| W10 9 May | 19. Micronutrients and Macronutrients 20. Carbohydrate metabolism | TBL | <u>Video assignment 20%</u> |
| W11 16 May | 21. Fat metabolism 22. Protein metabolism | TBL | Formative quiz |
| W12 23 May | 23. Hormonal control of food intake 24. Obesity and starvation | TBL | Formative quiz |
| W13 30 May | Revision week | | <u>Final exam as per University timetable 50%</u> |

Policies and Procedures

Macquarie University policies and procedures are accessible from [Policy Central \(https://policies.mq.edu.au\)](https://policies.mq.edu.au). Students should be aware of the following policies in particular with regard to Learning and Teaching:

- [Academic Appeals Policy](#)
- [Academic Integrity Policy](#)
- [Academic Progression Policy](#)
- [Assessment Policy](#)
- [Fitness to Practice Procedure](#)
- [Assessment Procedure](#)
- [Complaints Resolution Procedure for Students and Members of the Public](#)
- [Special Consideration Policy](#)

Students seeking more policy resources can visit [Student Policies \(https://students.mq.edu.au/support/study/policies\)](https://students.mq.edu.au/support/study/policies). It is your one-stop-shop for the key policies you need to know about throughout your undergraduate student journey.

To find other policies relating to Teaching and Learning, visit [Policy Central \(https://policies.mq.edu.au\)](https://policies.mq.edu.au) and use the [search tool](#).

Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: <https://students.mq.edu.au/admin/other-resources/student-conduct>

Results

Results published on platform other than [eStudent](#), (eg. iLearn, Coursera etc.) or released directly by your Unit Convenor, are not confirmed as they are subject to final approval by the University. Once approved, final results will be sent to your student email address and will be made available in [eStudent](#). For more information visit ask.mq.edu.au or if you are a Global MBA student contact globalmba.support@mq.edu.au

Academic Integrity

At Macquarie, we believe [academic integrity](#) – honesty, respect, trust, responsibility, fairness and courage – is at the core of learning, teaching and research. We recognise that meeting the expectations required to complete your assessments can be challenging. So, we offer you a range of resources and services to help you reach your potential, including free [online writing and maths support](#), [academic skills development](#) and [wellbeing consultations](#).

Student Support

Macquarie University provides a range of support services for students. For details, visit <http://students.mq.edu.au/support/>

The Writing Centre

[The Writing Centre](#) provides resources to develop your English language proficiency, academic writing, and communication skills.

- [Workshops](#)
- [Chat with a WriteWISE peer writing leader](#)
- [Access StudyWISE](#)
- [Upload an assignment to Studiosity](#)
- [Complete the Academic Integrity Module](#)

The Library provides online and face to face support to help you find and use relevant information resources.

- [Subject and Research Guides](#)
- [Ask a Librarian](#)

Student Services and Support

Macquarie University offers a range of [Student Support Services](#) including:

- [IT Support](#)
- [Accessibility and disability support](#) with study

- Mental health [support](#)
- [Safety support](#) to respond to bullying, harassment, sexual harassment and sexual assault
- [Social support including information about finances, tenancy and legal issues](#)

Student Enquiries

Got a question? Ask us via [AskMQ](#), or contact [Service Connect](#).

IT Help

For help with University computer systems and technology, visit http://www.mq.edu.au/about_us/offices_and_units/information_technology/help/.

When using the University's IT, you must adhere to the [Acceptable Use of IT Resources Policy](#). The policy applies to all who connect to the MQ network including students.