



MEDI2103

Alimentary System, Nutrition and Metabolism

Session 1, In person-scheduled-weekday, North Ryde 2023

Macquarie Medical School

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General Information

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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 the [Macquarie University Assessment Policy](#).

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 Convenors.

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, and achieve a final mark of 50 or better.

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

Late Submission

Unless a Special Consideration request has been submitted and approved, a 5% penalty (of the total possible mark) will be applied each day a written assessment is not submitted, up until the 7th day (including weekends). After the 7th day, a grade of '0' will be awarded even if the assessment is submitted. Submission time for all written assessments is set at 11.55 pm. A one-hour grace period is provided to students who experience a technical concern.

For example:

Number of days (hours) late	Total possible marks	Deduction	Raw mark	Final mark
1 day (1-24 hours)	100	5	75	70
2 days (24-48 hours)	100	10	75	65
3 days (48-72 hours)	100	15	75	60
7 days (144-168 hours)	100	35	75	40
>7 days (>168 hours)	100	-	75	0

For any late submissions of time-sensitive tasks, such as scheduled tests/exams, performance assessments/presentations, and/or scheduled practical assessments/labs, students need to submit an application for Special Consideration.

Special Consideration

If you are unable to complete an assessment task on or by the specified date due to circumstances that are unexpected, unavoidable, significantly disruptive and beyond your control, you may apply for special consideration in accordance with the [Special Consideration Policy](#). Applications for special consideration must be supported by appropriate evidence and submitted via ask.mq.edu.au.

Assessment Tasks

Name	Weighting	Hurdle	Due
Physiology Test	15%	No	Week 7
Anatomy test	15%	No	Week 8
Video Infographic	20%	No	Week 11
Final Exam	50%	No	University Examination Period

Physiology Test

Assessment Type ¹: Quiz/Test

Indicative Time on Task ²: 10 hours

Due: **Week 7**

Weighting: **15%**

In-class written test assessing physiology knowledge of the alimentary system.

On successful completion you will be able to:

- 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.

Anatomy test

Assessment Type ¹: Quiz/Test

Indicative Time on Task ²: 10 hours

Due: **Week 8**

Weighting: **15%**

In-class practical test assessing anatomy 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.
- 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 11**

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: **University Examination 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

As a student enrolled in this unit, you will engage in a range of online and face-to-face learning activities, including readings, online modules, videos and lectures etc. Details can be found on the iLearn site for this unit.

Recommended readings

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

- **Anatomy:** Drake RL *et al.* (2020) *Gray's Anatomy for Students*. (4th ed). Elsevier.
- **Anatomy Atlas:** Abrahams PH *et al.* (2020) *Abrahams' and McMinn's Clinical Atlas of Human Anatomy* (8th ed). Elsevier.
- **Embryology:** Moore KL *et al.* (2020) *The Developing Human: Clinically Oriented Embryology* (11th ed). Elsevier.
- **Physiology:** Hall JE & Hall ME (2021) *Guyton and Hall Textbook of Medical Physiology* (14th ed). Elsevier.
- **Biochemistry:** Baynes JW & Dominiczak MH (2023) *Medical Biochemistry* (6th ed). Elsevier

Technology used

Active participation in the learning activities throughout the unit will require students to have access to a tablet, laptop or similar device. Students who do not own their own laptop computer may borrow one from the university library.

Unit Schedule

Week	Lectures	Tutorial	Anatomy Practical	Assessment
1	Overview of alimentary system; oral cavity and mastication Temporal, infratemporal and pterygopalatine fossae	Oral cavity and mastication		
2	Neck, pharynx and oesophagus Development of the head and neck	Pharynx, neck and oesophagus	Oral cavity and associated structures	

Week	Lectures	Tutorial	Anatomy Practical	Assessment
3	Abdominal wall and cavity; peritoneum Stomach and small intestine	Stomach and small intestine	Pharynx, neck and oesophagus	
4	Accessory digestive organs (pancreas, liver, gallbladder) Gastrointestinal secretion	Accessory digestive organs and secretion	Abdominal wall, peritoneum, stomach and small intestine	
5	Large intestine Gastrointestinal absorption	Large intestine and absorption	Large intestine, accessory organs of digestion, posterior abdominal wall	
6	Pelvis, perineum, rectum and anus Smooth muscle physiology and GI motility	Pelvic viscera and GI motility	Pelvis and perineal region Revision	
7	Development of the GI tract Gut microbiome	<i>No tutorial</i>		Physiology Test (15%)
8	Common disorders of GI Pharmacology of GI	Pharmacology of GI		Anatomy Spot Test (15%)
9	Gut immunity	Gut immunity		
10	Carbohydrate metabolism Lipid metabolism	Nutrient metabolism I		
11	Protein metabolism Hormonal regulation of metabolism Micronutrients	Nutrient metabolism II		Video Infographic (20%)
12	Energy balance	Energy balance		
13	<i>No lectures</i>	<i>No tutorial</i>		
Exam Period				Final Exam (50%)

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 Advocacy](#) provides independent advice on MQ policies, procedures, and processes

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.

Changes from Previous Offering

In previous offerings, the Anatomy Test and Physiology Test were delivered as a combined Anatomy and Physiology Exam. This assessment was wholly paper-based and conducted in a lecture theatre or study space (e.g. tutorial room).

We value student feedback. Student survey results showed an interest in having a practical assessment for Anatomy, using specimens rather than images, to better reflect their competencies gained during the Anatomy Practical classes. Therefore, the current offering has separated the combined assessment into its two disciplines:

- Physiology Test will remain wholly paper-based;

- Anatomy Test will be delivered as a spot-test in the Anatomy laboratory. Students will also have the opportunity to practice for the spot-test during their Anatomy Practical classes.

Inclusion and Diversity

Social inclusion at Macquarie University is about giving everyone who has the potential to benefit from higher education the opportunity to study at university, participate in campus life and flourish in their chosen field. The University has made significant moves to promote an equitable, diverse and exciting campus community for the benefit of staff and students. It is your responsibility to contribute towards the development of an inclusive culture and practice in the areas of learning and teaching, research, and service orientation and delivery. As a member of the Macquarie University community, you must not discriminate against or harass others based on their sex, gender, race, marital status, carers' responsibilities, disability, sexual orientation, age, political conviction or religious belief. All staff and students are expected to display appropriate behaviour that is conducive to a healthy learning environment for everyone.

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 clinical, practical, laboratory, work-integrated learning (e.g., PACE placements), and team-based learning activities. Some learning activities are recorded (e.g., face-to-face lectures), however you are encouraged to avoid relying upon such material as they do not recreate the whole learning experience and technical issues can and do occur.

As an adult learner, we respect your decision to choose how you engage with your learning, but we would remind you that the learning opportunities we create for you have been done so to enable your success, and that by not engaging you may impact your ability to successfully complete this unit. We equally expect that you show respect for the academic staff who have worked hard to develop meaningful activities and prioritise your learning by communicating with them in advance if you are unable to attend a small group interactive session.

Another dimension of professionalism is having respect for your peers. It is the right of every student to learn in an environment that is free of disruption and distraction. Please arrive to all learning activities on time, and if you are unavoidably detained, please join activity as quietly as possible to minimise disruption. Phones and other electronic devices that produce noise and other distractions must be turned off prior to entering class. Where your own device (e.g., laptop) is being used for class-related activities, you are asked to close down all other applications to avoid distraction to you and others. Please treat your fellow students with the utmost respect. If you are uncomfortable participating in any specific activity, please let the relevant academic know.