



# MEDI2102

## Renal, Reproductive and Endocrine Systems

Session 2, In person-scheduled-weekday, North Ryde 2023

*Macquarie Medical School*

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#### **Disclaimer**

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## General Information

Unit convenor and teaching staff

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Credit points

10

Prerequisites

Admission to BClinSc and (HLTH108 or ANAT1001) and (100 cp at 1000 level or above)

Corequisites

(MEDI209 or MEDI219 or MEDI2200) and (MEDI201 or MEDI211 or MEDI2101)

Co-badged status

### Unit description

This unit builds up knowledge acquired in the foundation and systems units in the Bachelor of Clinical Science. You will extend your knowledge of the anatomy and physiology of the urinary system by focusing on renal blood flow, glomerular filtration, urine production and importance of kidneys in homeostasis of various body fluid compartments. You will study how various hormones interact with target cell receptors in regulating and modifying organ and cellular functions within the human body. You will discuss hormonal mechanisms and their regulatory activities on the structure and function of reproductive organs during puberty, reproductive stages and aging in humans. You will investigate how genetics and hormones interact with environmental and social influences to affect systems development and lifecycle outcomes. Key learning activities will include lectures, tutorial classes, and group presentations.

## 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 structural components of the genitourinary systems, endocrine glands and structural organisation of the abdomino-pelvic wall and viscera.

**ULO2:** Identify the structural components of the nephron and interpret its function and contribution to fluid and electrolyte balance.

**ULO3:** Demonstrate an understanding of the embryological development of the major structures of the genitourinary and endocrine systems and apply that knowledge to describe common embryological abnormalities.

**ULO4:** Describe the mechanisms of hormonal control, action and feedback to explain how hypersecretion or hyposecretion of hormones leads to symptoms and signs of endocrine disorders.

**ULO5:** Explain how genetic, hormonal, environmental and socioeconomic factors may interact to influence phenotypic development throughout the lifecycle.

**ULO6:** Discuss case studies by organising and integrating knowledge of genitourinary and endocrine glands 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 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, you 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 Submissions

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 11.55pm. A 1-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](http://ask.mq.edu.au).

## Assessment Tasks

Name	Weighting	Hurdle	Due
<a href="#">Flow chart</a>	30%	No	Week 7 (Reproductive flow chart), Week 13 (Renal Flow Chart)
<a href="#">Group Presentation</a>	20%	No	Week 9 (Group component)/Week 10 (Individual Component)
<a href="#">Final Exam</a>	50%	No	Examination Period

### Flow chart

Assessment Type <sup>1</sup>: Poster

Indicative Time on Task <sup>2</sup>: 15 hours

Due: **Week 7 (Reproductive flow chart), Week 13 (Renal Flow Chart)**

Weighting: **30%**

Produce and discuss a flow chart of a reproductive and/or urinary system condition that integrates knowledge of endocrine systems.

On successful completion you will be able to:

- Describe the structural components of the genitourinary systems, endocrine glands and structural organisation of the abdomino-pelvic wall and viscera.
- Identify the structural components of the nephron and interpret its function and contribution to fluid and electrolyte balance.
- Demonstrate an understanding of the embryological development of the major structures of the genitourinary and endocrine systems and apply that knowledge to describe common embryological abnormalities.
- Describe the mechanisms of hormonal control, action and feedback to explain how hypersecretion or hyposecretion of hormones leads to symptoms and signs of endocrine disorders.
- Explain how genetic, hormonal, environmental and socioeconomic factors may interact to influence phenotypic development throughout the lifecycle.
- Discuss case studies by organising and integrating knowledge of genitourinary and endocrine glands structures and functions (as well as concepts of pathophysiology) and by critically evaluating evidence from scientific and medical literature.

## Group Presentation

Assessment Type <sup>1</sup>: Media presentation

Indicative Time on Task <sup>2</sup>: 10 hours

Due: **Week 9 (Group component)/Week 10 (Individual Component)**

Weighting: **20%**

A short recorded presentation that relates to the structure, development and/or function of the genitourinary and/or endocrine systems

On successful completion you will be able to:

- Describe the structural components of the genitourinary systems, endocrine glands and structural organisation of the abdomino-pelvic wall and viscera.
- Demonstrate an understanding of the embryological development of the major structures of the genitourinary and endocrine systems and apply that knowledge to describe common embryological abnormalities.
- Describe the mechanisms of hormonal control, action and feedback to explain how hypersecretion or hyposecretion of hormones leads to symptoms and signs of endocrine disorders.
- Explain how genetic, hormonal, environmental and socioeconomic factors may interact to influence phenotypic development throughout the lifecycle.
- Discuss case studies by organising and integrating knowledge of genitourinary and endocrine glands structures and functions (as well as concepts of pathophysiology) and by critically evaluating evidence from scientific and medical literature.

## Final Exam

Assessment Type <sup>1</sup>: Examination

Indicative Time on Task <sup>2</sup>: 20 hours

Due: **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 structural components of the genitourinary systems, endocrine glands and structural organisation of the abdomino-pelvic wall and viscera.
- Identify the structural components of the nephron and interpret its function and contribution to fluid and electrolyte balance.
- Demonstrate an understanding of the embryological development of the major structures of the genitourinary and endocrine systems and apply that knowledge to describe common embryological abnormalities.
- Describe the mechanisms of hormonal control, action and feedback to explain how hypersecretion or hyposecretion of hormones leads to symptoms and signs of endocrine disorders.
- Explain how genetic, hormonal, environmental and socioeconomic factors may interact to influence phenotypic development throughout the lifecycle.

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<sup>1</sup> 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.

<sup>2</sup> 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, recorded lecture materials and H5P activities, as well as tutorials including team-based learning activities. Details can be found on the iLearn site for this unit.

### Recommended Readings

There is no prescribed text for this Unit, however it is strongly recommended that you access the Unit readings listed in iLearn available via the university library website. Online access to texts 1 and 3 listed below will be provided via Elsevier Clinical Key, available via the university library.

Recommended texts (also available at the library with limited online access)

1: *Guyton and Hall Textbook of Medical Physiology (13th Edition)*, John E Hall, ISBN: 9781455770052

2: *Human Physiology: An Integrated Approach (8th Edition)*, Dee Unglaub Silverthorn, ISBN: 9781292259628

3: *Gray's Anatomy for Students (4th Edition)* Drake, Richard L. (Richard Lee), ISBN: 9780323611053

## 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	Lecture topics	Assessment	Tutorial Activity
1	<ul style="list-style-type: none"> <li>Hormone biology and cell signalling</li> <li>Hormone axes and feedback loops</li> </ul>		ALL classes - self-paced online introduction to unit (no face to face tutorial) (Online only)
2	<ul style="list-style-type: none"> <li>The thyroid</li> <li>The parathyroid and calcium signalling</li> </ul>		Team-based learning (on campus)
3	<ul style="list-style-type: none"> <li>The adrenal glands: beyond fight or flight</li> <li>The pancreas as an endocrine organ: insulin signalling and diabetes</li> </ul>		Team-based learning (on-campus)
4	<ul style="list-style-type: none"> <li>The male reproductive system (endocrinology and physiology)</li> <li>The female reproductive system (endocrinology and physiology)</li> </ul>		Team-based learning (on campus)
5	<ul style="list-style-type: none"> <li>Endocrinology and systems development</li> <li>Embryology of the reproductive system</li> </ul>		Team-based learning (on campus)
6	<ul style="list-style-type: none"> <li>Anatomy of the male reproductive system</li> </ul>		Team-based learning (on campus)
7	<ul style="list-style-type: none"> <li>Anatomy of the female reproductive system</li> <li>Pregnancy, parturition and lactation</li> </ul>	AT1a – Reproductive flow chart	Team-based learning (on campus)
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8	<ul style="list-style-type: none"> <li>Anatomy of the urinary system</li> <li>Functional anatomy of the nephron</li> </ul>		Team-based learning (on campus)
9	<ul style="list-style-type: none"> <li>Glomerular filtration</li> <li>Tubular reabsorption and secretion</li> </ul>	AT2 Group presentation (online submission)	Team-based learning (on campus)
10	<ul style="list-style-type: none"> <li>Fluid and electrolyte balance</li> <li>Acid-base balance</li> </ul>	AT2 group presentation (individual assessment, in-class)	Team-based learning (on campus)
11	<ul style="list-style-type: none"> <li>Pharmacology and the kidneys</li> </ul>		Team-based learning (on campus)
12	<ul style="list-style-type: none"> <li>Alterations of the kidneys function</li> </ul>		Team-based learning (on campus)
13	<ul style="list-style-type: none"> <li>No lectures</li> </ul>	AT1b – Renal flow chart	Online revision

## 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](http://ask.mq.edu.au) or if you are a Global MBA student contact [globalmba.support@mq.edu.au](mailto: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/](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

Minor changes to wording of assessment descriptors and estimated time on task from 2022.

MEDI209/MEDI219/MEDI2200 moved from pre-requisite to co-requisite. Pre-requisite as: Admission to BClinSc and (HLTH108 or ANAT1001) and (100 cp at 1000 level or above).

## 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.