MEDI2102

Renal, Reproductive and Endocrine Systems

Session 2, Weekday attendance, North Ryde 2020

Medicine, Health and Human Sciences Faculty level units

Contents

Notice

As part of Phase 3 of our return to campus plan, most units will now run tutorials, seminars and ot her small group learning activities on campus for the second half-year, while keeping an online ver sion available for those students unable to return or those who choose to continue their studies onli ne.

To check the availability of face-to-face and onlin e activities for your unit, please go to timetable vi ewer. To check detailed information on unit asses sments visit your unit's iLearn space or consult yo ur unit convenor.

General Information

Unit convenor and teaching staff
Lucinda McRobb
lucinda.mcrobb@mq.edu.au

Cara Hildreth
cara.hildreth@mq.edu.au

Credit points
10

Prerequisites
Admission to BClinSc and (HLTH108 or ANAT1001) and (MEDI209 or MEDI219 or MEDI2200)

Corequisites

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 Schedule 1 of the Macquarie University Assessment Policy, which is available at: https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policies/assessment.

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

All final grades in the Bachelor of Clinical Science are determined by a grading committee and are not the sole responsibility of the Unit Convenor.

Students will be awarded a final grade plus a Standardised Numerical Grade (SNG). The SNG is not necessarily a summation of the individual assessment components. The final grade and SNG that are awarded reflect the corresponding grade descriptor in the Grading Policy.

To pass this unit, students must demonstrate sufficient evidence of achievement of the learning outcomes, attempt all assessment tasks, meet any ungraded requirements including professionalism and achieve an SNG of 50 or better.

It is our professional responsibility as your mentors to assign you a grade that accurately reflects your performance. Our grading decisions are subject to scrutiny by academic colleagues at the Program, Faculty and University level.

Grades ranging from High Distinction to Fail are defined as follows:

Grade	SNG	Description
HD High Distinction	85-100	Work of outstanding quality. This may be demonstrated in areas such as criticism, logical argument, and interpretation of materials or use of methodology. This grade may also be awarded to recognise a high order of originality or creativity in student performance

D Distinction	75-84	Work of superior quality in the same areas of performance as above. This grade may also be awarded to recognise particular originality or creativity in student performance
Cr Credit	65-74	Work of predominantly good quality, demonstrating a sound grasp of content together with efficient organisation, selectivity and use of techniques
P Pass	50-64	Satisfactory achievement of unit objectives
F Fail	0-49	Failure to achieve unit objectives

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.

Furthermore, lectures and seminars are key learning activities that you are expected to attend throughout completion of the Bachelor of Clinical Science. While audio recordings and lecture slides may be made available following these large group sessions, it is important to recognise that such resources are a study aid - and should not be considered an alternative to lecture or seminar attendance.

Students are required to **attend a minimum of 80% of all small group interactive sessions**. Students that do not meet this requirement may be deemed unable to meet expectations regarding professionalism and may be referred for disciplinary action (which may include exclusion from assessments and unit failure).

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

All assignments which are officially received after the due date, and where no extension has been granted, will incur a deduction of 5% for the first day, and 5% for each subsequent day including the actual day on which the work is received up until 10 days late. No submissions will be accepted after 10 days. Weekends and public holidays are included. For example:

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

Formative Assessment tasks

Team-based learning (TBL) sessions

Due: **Run in weekly tutorial sessions** Weighting: **0% (formative)**

A series of TBL sessions will be run in the tutorial sessions across the semester. Students will be assigned to work in small teams to apply their learning to exam-style multiple choice questions and to solve simple clinical cases studies. These are ongoing formative exercises. Students will have the opportunity to assess their own individual learning through these sessions.

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.

Assessment Tasks

Name	Weighting	Hurdle	Due
Group Presentation	20%	No	Week 9/10
Flow chart	30%	No	Reproductive flow chart (Week 7), Renal flow chart (Week 12)
Final Exam	50%	No	University examination period

Group Presentation

Assessment Type [1]: Presentation
Indicative Time on Task [2]: 10 hours

Due: **Week 9/10**
Weighting: **20%**

A short 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:

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- 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.

Flow chart

Assessment Type [1]: Problem set
Indicative Time on Task [2]: 10 hours
Due: **Reproductive flow chart (Week 7), Renal flow chart (Week 12)**
Weighting: **30%**

Produce a flow chart of an urinary and reproductive system condition that integrates knowledge of endocrine system.

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.
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to influence phenotypic development throughout the lifecycle.

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

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.

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.

Recommended texts (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

Unit Schedule

Unit Schedule

Week	Lecture topics	Assessment	Tutorial activity
1	Hormone biology and cell signalling Hormone axes and feedback loops		Introduction to unit (online)
2	Signal integration at the hypothalamus-pituitary The thyroid and parathyroid glands		TBL session
3	The adrenal glands - beyond fight or flight The pancreas as an endocrine organ: insulin signalling and diabetes		TBL session
4	Endocrinology and systems development Embryology of the reproductive system		Group research
5	Anatomy of the male reproductive system Physiology of the male reproductive system		TBL session
6	Anatomy of the female reproductive system Physiology of the female reproductive system		TBL session

Week	Lecture topics	Assessment	Tutorial activity
7	Female reproduction: procreation, pregnancy and parturition Current concepts in hormone use (or abuse)?	Flow chart 1 (Reproductive system)	Group research
Recess			
8	Renal System - Body fluid compartments Anatomy of the urinary system		TBL
9	The nephron and urine production (Renal function and structure) The nephron and urine production (Blood flow and glomerular filtration)	Group presentation submission	TBL
10	Urine formation - tubular reabsorption and secretion Urine formation - concentration, dilution and electrolyte balance	Group presentation delivery	Presentations in class
11	Acid-base balance Role of kidneys in blood pressure control and disease		TBL
12	Urinalysis and kidney function tests Pharmacology and the kidneys	Flow chart 2 (Renal system)	TBL
13	Revision week		

*TBL = team-based learning session

Policies and Procedures

Macquarie University policies and procedures are accessible from Policy Central (https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central). 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
- Grade Appeal Policy
- Complaint Management Procedure for Students and Members of the Public
- Special Consideration Policy *(**Note:** The Special Consideration Policy is effective from 4*

December 2017 and replaces the Disruption to Studies Policy.)

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

If you would like to see all the policies relevant to Learning and Teaching visit Policy Central (https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central).

Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: https://students.mq.edu.au/study/getting-started/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

Student Support

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

Learning Skills

Learning Skills (mq.edu.au/learningskills) provides academic writing resources and study strategies to help you improve your marks and take control of your study.

- Getting help with your assignment
- Workshops
- StudyWise
- 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

Students with a disability are encouraged to contact the Disability Service who can provide appropriate help with any issues that arise during their studies.

Student Enquiries

For all student enquiries, visit Student Connect at ask.mq.edu.au

If you are a Global MBA student contact globalmba.support@mq.edu.au

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

MEDI2102 is a new unit commencing in S2 2020