LMED29002 *Anatomical Pathology 1*
Term 2 - 2023

Profile information current as at 05/05/2024 04:12 am

General Information

Overview

Identification of the characteristic histopathological and cytopathological features of human organ systems and the hallmarks of pathological dysregulation of tissue organisation is fundamental to the work of the medical laboratory scientist. In this unit you will study normal and abnormal histopathological features of a range of tissues along with normal and abnormal cytopathological features of a range of cells. The relationship between cellular injury, immune response, tumour formation, infection and pathological dysregulation of tissue organisation will be explored in relation to clinical cases you may encounter. You will develop the knowledge and skills to perform microscopic examination of tissues and cells. Case studies will include new developments in immunohistochemistry and fluorescence imaging. You will be required to attend a compulsory residential school on the Rockhampton campus for development and assessment of your skill in histological and cytological techniques. The residential school may be scheduled outside of the term of offering of the unit.

Details

Career Level: *Postgraduate*
Unit Level: *Level 9*
Credit Points: *6*
Student Contribution Band: *8*
Fraction of Full-Time Student Load: *0.125*

Pre-requisites or Co-requisites

Prerequisites:Enrolment in Master of Laboratory Medicine.
Important note: Students enrolled in a subsequent unit who failed their pre-requisite unit, should drop the subsequent unit before the census date or within 10 working days of Fail grade notification. Students who do not drop the unit in this timeframe cannot later drop the unit without academic and financial liability. See details in the Assessment Policy and Procedure (Higher Education Coursework).

Offerings For Term 2 - 2023

- Melbourne
- Mixed Mode
- Rockhampton

Attendance Requirements

All on-campus students are expected to attend scheduled classes – in some units, these classes are identified as a mandatory (pass/fail) component and attendance is compulsory. International students, on a student visa, must maintain a full time study load and meet both attendance and academic progress requirements in each study period (satisfactory attendance for International students is defined as maintaining at least an 80% attendance record).

Residential Schools

This unit has a Compulsory Residential School for distance mode students and the details are:
Click here to see your Residential School Timetable.

Website

This unit has a website, within the Moodle system, which is available two weeks before the start of term. It is important that you visit your Moodle site throughout the term. Please visit Moodle for more information.

Class and Assessment Overview

Recommended Student Time Commitment

Each 6-credit Postgraduate unit at CQUniversity requires an overall time commitment of an average of 12.5 hours of study per week, making a total of 150 hours for the unit.

Class Timetable

Regional Campuses
Bundaberg, Cairns, Emerald, Gladstone, Mackay, Rockhampton, Townsville

Metropolitan Campuses
Adelaide, Brisbane, Melbourne, Perth, Sydney

Assessment Overview

1. **Written Assessment**
Weighting: 20%
2. **Written Assessment**
Weighting: 30%
3. **Laboratory/Practical**
Weighting: Pass/Fail
4. **Examination**
Weighting: 50%

Assessment Grading

This is a graded unit: your overall grade will be calculated from the marks or grades for each assessment task, based on the relative weightings shown in the table above. You must obtain an overall mark for the unit of at least 50%, or an overall grade of 'pass' in order to pass the unit. If any 'pass/fail' tasks are shown in the table above they must also be completed successfully ('pass' grade). You must also meet any minimum mark requirements specified for a particular assessment task, as detailed in the 'assessment task' section (note that in some instances, the minimum mark for a task may be greater than 50%). Consult the University's Grades and Results Policy for more details of interim results and final grades.

CQUniversity Policies

All University policies are available on the CQUniversity Policy site.
You may wish to view these policies:

- Grades and Results Policy
- Assessment Policy and Procedure (Higher Education Coursework)
- Review of Grade Procedure
- Student Academic Integrity Policy and Procedure
- Monitoring Academic Progress (MAP) Policy and Procedure – Domestic Students
- Monitoring Academic Progress (MAP) Policy and Procedure – International Students
- Student Refund and Credit Balance Policy and Procedure
- Student Feedback – Compliments and Complaints Policy and Procedure
- Information and Communications Technology Acceptable Use Policy and Procedure

This list is not an exhaustive list of all University policies. The full list of University policies are available on the CQUniversity Policy site.

Previous Student Feedback

Feedback, Recommendations and Responses

Every unit is reviewed for enhancement each year. At the most recent review, the following staff and student feedback items were identified and recommendations were made.

Feedback from SUTE and self reflection

Feedback
The unit has a significant volume of material

Recommendation
Revise the unit's content and delivery for 2024. Construct some classes using Moodle Lessons to help students digest the material.

Feedback from email and SUTE

Feedback
The student learning experience, and academic rigour of the unit, would be improved if there were more assessment tasks.

Recommendation
Discuss assessment options and gradings with the DDLT team and Head of Course for 2024.

Feedback from Self reflection

Feedback
Students appear to be largely disengaged and more could be done to promote engagement with the unit.

Recommendation
Implement more interactive tutorials. Provide students with a weekly discussion topic, and ensure they have time dedicated in the tutorial to discuss with peers. Implement Kahoot style quizzes in the tutorials to keep them engaged.

Unit Learning Outcomes

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

1. Distinguish histopathological and cytopathological specimens according to body system, pathology and artefactual morphology
2. Apply professional knowledge of inflammatory processes and tissue responses to clinical contexts
3. Demonstrate skills in histological and cytological techniques, including the process of sectioning, antigen retrieval and staining
4. Apply professional knowledge of the neoplastic process, grading and staging of neoplasms and gene expression to clinical contexts
5. Discuss the principles, mechanisms, requirements and the application of use for special stain procedures and specialised fixation techniques in histology and cytology.

Alignment of Learning Outcomes, Assessment and Graduate Attributes

— N/A Level | • Introductory Level | • Intermediate Level | • Graduate Level | ◦ Professional Level | ◦ Advanced Level

Alignment of Assessment Tasks to Learning Outcomes

Assessment Tasks	Learning Outcomes				
	1	2	3	4	5
1 - Written Assessment - 20%	•	•			•
2 - Written Assessment - 30%	•		•		
3 - Laboratory/Practical - 0%			•		
4 - Examination - 50%		•		•	•

Alignment of Graduate Attributes to Learning Outcomes

Graduate Attributes	Learning Outcomes				
	1	2	3	4	5
1 - Knowledge	◦	◦	◦	◦	◦
2 - Communication	◦	◦	◦	◦	◦
3 - Cognitive, technical and creative skills	◦	◦	◦	◦	◦
4 - Research					
5 - Self-management					
6 - Ethical and Professional Responsibility					
7 - Leadership					
8 - Aboriginal and Torres Strait Islander Cultures					

Textbooks and Resources

Textbooks

LMED29002

Prescribed

Cellular Pathology: An Introduction to Techniques and Applications
Edition: 3rd (2015)
Authors: D. J. Cook & P. J. Warren
Scion
Banbury , United Kingdom
ISBN: 9781907904356
Binding: Paperback
LMED29002

Prescribed

Wheater's Functional Histology A Text and Colour Atlas
Edition: Sixth (2014)
Authors: Young, B., O'Dowd, G., Woodford, P.
Elsevier
ISBN: 9780702047473
Binding: Paperback

IT Resources

You will need access to the following IT resources:

- CQUniversity Student Email
- Internet
- Unit Website (Moodle)
- Zoom

Referencing Style

All submissions for this unit must use the referencing styles below:

- Harvard (author-date)
- Vancouver

For further information, see the Assessment Tasks.

Teaching Contacts

Ingrid Christiansen Unit Coordinator
i.christiansen@cqu.edu.au

Schedule

Week 1 - 10 Jul 2023

Module/Topic	Chapter	Events and Submissions/Topic
1. Fixation, Cut-up 2. Tissue Processing and Embedding	1. Cook & Warren: Ch 3 2. Cook & Warren: Ch 4.1-4.4, 5	Discussion Forum: Experience in pathology

Week 2 - 17 Jul 2023

Module/Topic	Chapter	Events and Submissions/Topic

1. Sectioning, Coverslipping and Artefacts 2. Microscopy	1. Cook & Warren: Ch 4.5, 6.1, 1.2 2. Cook & Warren: Ch 17, 19	Tutorial: How to write a poster

Week 3 - 24 Jul 2023

Module/Topic	Chapter	Events and Submissions/Topic
Staining: 1. Haematoxylin and Eosin, 2. Carbohydrates, Connective Tissue and Muscle	1. Cook & Warren: Ch 7 2. Cook & Warren: Ch 8	Tutorial: Recap of topics 1-3

Week 4 - 31 Jul 2023

Module/Topic	Chapter	Events and Submissions/Topic
Staining: 1. Immunohistochemistry and Immunofluorescence 2. Molecular techniques	1. Cook & Warren: Ch 12 2. Cook & Warren: Ch 15-16	Discussion Forum

Week 5 - 07 Aug 2023

Module/Topic	Chapter	Events and Submissions/Topic
Staining: 1. Pigments, microbiology and amyloid 2. Silver, Lipids and enzymes	1. Cook & Warren: Ch 10.1, 11 2. Cook & Warren: Ch 7.6, 8.6, 9.3	Assessing a case study **Poster** Due: Week 5 Friday (11 Aug 2023) 11:45 pm AEST

Vacation Week - 14 Aug 2023

Module/Topic	Chapter	Events and Submissions/Topic
Break Week		

Week 6 - 21 Aug 2023

Module/Topic	Chapter	Events and Submissions/Topic
1. Tissues, inflammation and repair 2. Cell death and the 'plasias'.	1. Cook & Warren: Ch 2.1, 2.2; Young et. al., Ch 4, 5, 6, 7 2. Cook & Warren: Ch 2.3-2.7	Tutorial: Recap of topics 4-6

Week 7 - 28 Aug 2023

Module/Topic	Chapter	Events and Submissions/Topic
1. The Integumentary System 2. The Respiratory System	1. Young et al.: Ch 9 2. Young et al.: Ch 12	Discussion Forum

Week 8 - 04 Sep 2023

Module/Topic	Chapter	Events and Submissions/Topic
1. The Digestive System 2. The Liver	1. Young et al.: Ch 14 2. Young et al.: Ch 15	No tutorial this week

Week 9 - 11 Sep 2023

Module/Topic	Chapter	Events and Submissions/Topic
1. The Female Reproductive System 2. The Male Reproductive System	1. Young et al.: Ch 19 2. Young et al.: Ch 18	Tutorial: Recap weeks 7-9

Week 10 - 18 Sep 2023

Module/Topic	Chapter	Events and Submissions/Topic
1. The Cardiovasucular System and Musculoskeletal System 2. The Endocrine and Lymphatic Systems	1. Young et al.: Ch 8, 10 2. Young et al.: Ch 15, 11, 17	Discussion Forum: Case Study

Week 11 - 25 Sep 2023

Module/Topic	Chapter	Events and Submissions/Topic
1. The Renal System 2. The Nervous System	1. Young et al.: Ch 16 2. Young et al.: Ch 20	Tutorial: Image analysis

Week 12 - 02 Oct 2023

Module/Topic	Chapter	Events and Submissions/Topic
1. Cytology and Techniques 2. Diagnostic Cytopathology	1. Cook & Warren: Ch 13 2. Young et al.: Ch 14	Tutorial: Recap weeks 1-12

Review/Exam Week - 09 Oct 2023

Module/Topic	Chapter	Events and Submissions/Topic

Exam Week - 16 Oct 2023

Module/Topic	Chapter	Events and Submissions/Topic
		An invigilated examination will be scheduled in the scheduled examination period from 12 October 2023 - 20 October 2023. Students will be notified of the exact date once it has been scheduled.

Term Specific Information

Your unit coordinators for LMED29002 Anatomical Pathology 1 are Ingrid Christiansen and Associate Professor Paul Neilsen. Your primary contact point is Ingrid and you can contact Ingrid using the following means:

- Via the forum on the unit's Moodle site. The forum for this unit is continuously monitored and you can expect a response within one (1) business day of posting your question;
- Through email (i.christiansen@cqu.edu.au) or
- Via telephone on 07 4930 6518.

As the name suggests, this unit will provide you with technical and applied knowledge of anatomical pathology. LMED29002 Anatomical Pathology 1 is a core unit in one course:

- CM18 - Master of Laboratory Medicine

Tutorials will be delivered each week at the Rockhampton campus, and students who are enrolled in either mixed mode or at the Melbourne campus will be able to join these classes via Zoom. These tutorials will also be recorded for the benefit of those students who are unable to attend the live lectures and tutorials. During the tutorials, you will work through the discussion topics or weekly study questions that are provided to you on the Moodle site. These discussion topics and weekly study questions will help you apply knowledge learned during the weekly lecture and prepare you for the assessments. You will gain the most benefit from the tutorials if you watch/attend the weekly lectures beforehand and attempt the weekly study questions. You are strongly encouraged to participate in tutorials, as studies have shown that students who attend the tutorials and participate in discussions have higher rates of success (Karnik et al., 2020). Weekly revision quizzes are also provided to reinforce the knowledge you have gained from the lectures and to support your learning experience in this unit.
You will be provided an opportunity to explore how to apply the knowledge learnt in lecture material in a compulsory residential school (exact dates to be advised). This residential school is planned to take place outside of the standard teaching term and students will be advised of the dates as organised through the timetabling team in Term 3. Here you will be mirroring anatomical pathology laboratory techniques with guidance from an industry professional.
As per Australian educational standards, you are expected to commit 150 hours of engagement to your study of this unit. This is broken down as:

- 2 - 3 hours per week watching recorded lectures and revising the content through study notes
- 3 - 4 hours per week completing the weekly study questions and weekly revision quizzes on the unit's Moodle site.
- 1 - 2 hours per week attending the weekly tutorial and reflecting on your answers to the weekly study questions
- 3 - 4 hours per week preparing your assessments or studying for your exams

Karnik, A., Kishore, P., & Meraj, M. (2020). Examining the linkage between class attendance at university and academic performance in an International Branch Campus setting. Research in Comparative and International Education, 15(4), 371-390. https://doi.org/10.1177/1745499920958855

Assessment Tasks

1 Poster

Assessment Type
Written Assessment

Task Description
Diagnostic anatomical pathology is a dynamic landscape. Most of the tissue and cell slide preparation techniques have existed for >100 years, but are constantly evolving.
You will be required to create a poster outlining the evolution of one of these slide preparation techniques and how it has improved the diagnosis in anatomical pathology. You will NOT be required to provide diagnoses, rather outline the development and enhancement of existing slide preparation techniques.
Some of the topics include (but are not limited to):
* Fixation
* Cut-Up / Macrodissection
* Cytology slide preparation
* Tissue Processing
* Embedding
* Microtomy
* Staining (there are many of these to choose from)
* Coverslipping
Remember to include a technique which is unique to anatomical pathology.
The poster should be completed in Microsoft PowerPoint or similar.

Assessment Due Date
Week 5 Friday (11 Aug 2023) 11:45 pm AEST

Return Date to Students
Week 6 Friday (25 Aug 2023)

Weighting
20%

Minimum mark or grade
50%

Assessment Criteria
Marks for this assessment will be awarded as per the rubric/marking guide provided in the Assessment tile on the Moodle site. Your written assessment will be marked on the following criteria:

- Critical evaluation of how the technique has evolved over time;
- Presents a clear and detailed understanding of the technique/topic;
- Sections are clearly outlined and there is structured flow;
- Appropriate use of images;
- Quality of poster presentation - i.e. eye-catching, self-explanatory, etc.
- Quality, quantity and formatting of references;
- Grammar, sentence construction and spelling;
- Formatting of the poster.

Referencing Style

- Harvard (author-date)
- Vancouver

Submission
Online

Learning Outcomes Assessed

- Distinguish histopathological and cytopathological specimens according to body system, pathology and artefactual morphology
- Apply professional knowledge of inflammatory processes and tissue responses to clinical contexts
- Discuss the principles, mechanisms, requirements and the application of use for special stain procedures and specialised fixation techniques in histology and cytology.

2 Practical Portfolio

Assessment Type
Written Assessment

Task Description
Over the duration of the residential school / block practical you will learn to perform slide preparation processes, learn how to recognise different tissue types, simulate a Fine Needle Aspirate (FNA) technique and prepare a series of stains in accordance with instructions in the practical manual. You will be assessed on the quality of those stains by academic staff with expertise in histology. You must achieve a collective minimum of 50% (skills plus theory components) to pass this assessment. The practical will include:

Skills component:
This assessment must be handed to the assessor for marking on completion. This part of the assessment is worth 60% of assessment 2. You must achieve a minimum of 50% of the marks available for this component in order to pass this unit. Items assessed include:

- Microtomy and H&E staining. You will section 5 different blocks of tissue, stain them using H&E staining, and label the slide accordingly.
- Three different special histochemical stains. The stains used will depend on the type of tissue obtained for the residential school. Full details on how to perform these stains will be provided in the laboratory manual.
- Simulated fine needle aspirate and exfoliative cell collection followed by preparation of slides and cytology staining.
- Immunohistochemistry stain.

Students who fail to achieve 50% (Pass) on the first attempt of the skills component will be granted a second attempt. The maximum mark for the second attempt will be 50% of the allocated marks.

Theory component:
This assessment must be handed to the assessor for marking on completion. This part of the assessment is worth 40% of assessment 2. Items assessed include:

- Identification of five tissue blocks (which you have sectioned).
- Identification of tissue at 20 microscope stations (OSCE)
- Completion of the workbook. A series of questions will assess your knowledge and understanding of histology, cytology and histological/cytological techniques. It is recommended that you do some pre-reading prior to residential school / block practical.

Assessment Due Date

Due to be handed in at the completion of the residential school

Return Date to Students

Due to be marked and returned within two weeks following the residential school

Weighting
30%

Minimum mark or grade
50%

Assessment Criteria
Assessment of the slides will be done by academic staff with expertise in histology and cytology. A maximum of eleven (11) slides will be submitted with a workbook.

Skills

- Microtomy and H&E staining: There will 6 marks for each produced slide (6 marks per slide x 5 slides = 30 marks in total).
- Special stains: There will be 6 marks assessing the quality of each slide (6 marks per slide x 3 slides = 18 marks in total).
- Fine needle aspirate collection, exfoliative cell collection, preparation of slides and staining will be assessed in this cytology simulation: There will be 3 marks per slide (3 marks per slide x 2 slides = 6 marks in total).
- Immunohistochemistry staining: There will be 6 marks assessing the quality of the slide (6 marks per slide x 1 slide = 6 marks in total).
- Total Skills marks = 60 marks

Theory

- Identification of 5 tissue blocks (5 marks available).
- The workbook will be marked against a set of correct answers (15 marks available).
- Identification of tissue at 20 microscope stations (OSCE) (20 marks).
- Total Theory marks = 40 marks

Referencing Style

- Harvard (author-date)
- Vancouver

Submission
Offline

Submission Instructions
To be submitted as a portfolio at the completion of the residential school

Learning Outcomes Assessed

- Distinguish histopathological and cytopathological specimens according to body system, pathology and artefactual morphology
- Demonstrate skills in histological and cytological techniques, including the process of sectioning, antigen retrieval and staining

3 Laboratory/Practical

Assessment Type
Laboratory/Practical

Task Description
Attendance at the Residential School / Laboratory is mandatory to pass the unit. The exact dates will be advised.

Assessment Due Date

Return Date to Students

Weighting
Pass/Fail

Assessment Criteria
Attendance at the Residential School / Laboratory is mandatory to pass the unit. You will be assessed on both theory and skills as part of the Practical Portfolio.

Referencing Style

- Harvard (author-date)
- Vancouver

Submission
Offline

Learning Outcomes Assessed

- Demonstrate skills in histological and cytological techniques, including the process of sectioning, antigen retrieval and staining

Examination

Outline
Complete an invigilated examination.

Date
During the examination period at a CQUniversity examination centre.

Weighting
50%

Length
180 minutes

Minimum mark or grade
50

Exam Conditions
Closed Book.

Materials
Dictionary - non-electronic, concise, direct translation only (dictionary must not contain any notes or comments).

Academic Integrity Statement

As a CQUniversity student you are expected to act honestly in all aspects of your academic work.

Any assessable work undertaken or submitted for review or assessment must be your own work. Assessable work is any type of work you do to meet the assessment requirements in the unit, including draft work submitted for review and feedback and final work to be assessed.

When you use the ideas, words or data of others in your assessment, you must thoroughly and clearly acknowledge the source of this information by using the correct referencing style for your unit. Using others' work without proper acknowledgement may be considered a form of intellectual dishonesty.

Participating honestly, respectfully, responsibly, and fairly in your university study ensures the CQUniversity qualification you earn will be valued as a true indication of your individual academic achievement and will continue to receive the respect and recognition it deserves.

As a student, you are responsible for reading and following CQUniversity's policies, including the **Student Academic Integrity Policy and Procedure**. This policy sets out CQUniversity's expectations of you to act with integrity, examples of academic integrity breaches to avoid, the processes used to address alleged breaches of academic integrity, and potential penalties.

What is a breach of academic integrity?
A breach of academic integrity includes but is not limited to plagiarism, self-plagiarism, collusion, cheating, contract cheating, and academic misconduct. The Student Academic Integrity Policy and Procedure defines what these terms mean and gives examples.

Why is academic integrity important?
A breach of academic integrity may result in one or more penalties, including suspension or even expulsion from the University. It can also have negative implications for student visas and future enrolment at CQUniversity or elsewhere. Students who engage in contract cheating also risk being blackmailed by contract cheating services.

Where can I get assistance?
For academic advice and guidance, the Academic Learning Centre (ALC) can support you in becoming confident in completing assessments with integrity and of high standard.

What can you do to act with integrity?

Be Honest
If your assessment task is done by someone else, it would be dishonest of you to claim it as your own

Seek Help
If you are not sure about how to cite or reference in essays, reports etc, then seek help from your lecturer, the library or the Academic Learning Centre (ALC)

Produce Original Work
Originality comes from your ability to read widely, think critically, and apply your gained knowledge to address a question or problem