BMSC13016 *Advanced Histopathology and Cytopathology*
Term 2 - 2019

Profile information current as at 01/05/2024 08:46 am

Corrections

Unit Profile Correction added on 04-09-19

The Exam Condition should read 'Closed Book' and not 'Restricted' as in the original profile.

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 be provided with the knowledge and skill to perform microscopic examination of tissues and cells. Case studies will include new developments in immunohistochemistry and fluorescence imaging. Attendance at residential school practical activities in Rockhampton is a requirement of this unit.

Details

Career Level: *Undergraduate*
Unit Level: *Level 3*
Credit Points: *6*
Student Contribution Band: *8*
Fraction of Full-Time Student Load: *0.125*

Pre-requisites or Co-requisites

Prerequisites BMSC12001 Histological and Cytological Techniques
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 - 2019

- 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 Undergraduate 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. **Practical Assessment**
Weighting: 40%
3. **Examination**
Weighting: 40%

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.

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. Discuss the features of inflammatory disease processes and the range of tissue responses
3. Perform techniques and explain the principles, mechanisms and requirements of use for special stain procedures and specialised fixation techniques
4. Describe the neoplastic process, grading systems for staging malignant neoplasms and correlation with gene expression
5. Discuss the principles, mechanisms, requirements and the application of use for special stain procedures and specialised fixation techniques of new molecular and hybridisation techniques in histology and cytology.

The learning outcomes achieved are linked to the objectives of the accrediting body, Australian Institute of Medical Scientists (AIMS).

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 - Practical Assessment - 40%	•		•		
2 - Written Assessment - 20%	•	•		•	•
3 - Examination - 40%		•	•	•	•

Alignment of Graduate Attributes to Learning Outcomes

Graduate Attributes	Learning Outcomes				
	1	2	3	4	5
1 - Communication	•	•	•	•	•
2 - Problem Solving			•		•
3 - Critical Thinking					•
4 - Information Literacy	•	•	•	•	•
5 - Team Work					
6 - Information Technology Competence	•		•		
7 - Cross Cultural Competence					

Graduate Attributes	Learning Outcomes				
	1	2	3	4	5
8 - Ethical practice					
9 - Social Innovation					
10 - Aboriginal and Torres Strait Islander Cultures					

Alignment of Assessment Tasks to Graduate Attributes

Assessment Tasks	Graduate Attributes									
	1	2	3	4	5	6	7	8	9	10
1 - Practical Assessment - 40%	•	•	•	•				•		
2 - Written Assessment - 20%	•	•	•	•		•				
3 - Examination - 40%	•	•	•	•				•		

Textbooks and Resources

Textbooks

BMSC13016

Prescribed

Functional histology
Edition: 2nd (2010)
Authors: Jeffrey B Kerr
Elsevier
Chatswood , NSW , Australia
ISBN: 9780729538374
Binding: Paperback
BMSC13016

Prescribed

Wheater's Fuctional Histology A Text and Colour Atlas
Edition: 6th (2014)
Authors: Young, B., O'Dowd, G., Woodford, P.
Elsevier
Philadelphia , PA , USA
ISBN: 978-0-7020-4747-3
Binding: Paperback

View textbooks at the CQUniversity Bookshop

IT Resources

You will need access to the following IT resources:

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

Referencing Style

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

- American Psychological Association 6th Edition (APA 6th edition)
- Harvard (author-date)

For further information, see the Assessment Tasks.

Teaching Contacts

Ingrid Christiansen Unit Coordinator
i.christiansen@cqu.edu.au
Wayne Pederick Unit Coordinator
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Schedule

Week 1 - 15 Jul 2019

Module/Topic	Chapter	Events and Submissions/Topic
Lecture 1: The cell and tissue types Lecture 2: Body systems (revision)	Kerr: 1, 2 Young et. *al*., 1	

Week 2 - 22 Jul 2019

Module/Topic	Chapter	Events and Submissions/Topic
Lecture 1: Injury, inflammation and repair Lecture 2: Dysplasia and neoplasia		Tutorial (Week 1 material)

Week 3 - 29 Jul 2019

Module/Topic	Chapter	Events and Submissions/Topic
Lecture 1: Integumentary system 1 Lecture 2: Integumentary system 2	Kerr, 9 Young et. *al*., 9	Tutorial (Week 2 material)

Week 4 - 05 Aug 2019

Module/Topic	Chapter	Events and Submissions/Topic
Lecture 1: Respiratory System Lecture 2: Digestive System	Kerr, 12, 13, 14, 15 Young et. *al*., 12, 13, 14, 15	Tutorial (Week 3 material)

Week 5 - 12 Aug 2019

Module/Topic	Chapter	Events and Submissions/Topic
Lecture 1: Reproductive System 1 (Male) Lecture 2: Reproductive System 2 (Female)	Kerr, 18, 19 Young et. *al*., 18, 19	Tutorial (Week 4 & 5 material)

Vacation Week - 19 Aug 2019

Module/Topic	Chapter	Events and Submissions/Topic

Week 6 - 26 Aug 2019

Module/Topic	Chapter	Events and Submissions/Topic
Lecture 1: Cardiovascular System Lecture 2: Endocrine, blood and lymphatics	Kerr, 3, 8, 11, 17 Young et. *al*., 3, 8, 11, 17	Friday 30 August 2019 - Case study due **Case Study Report** Due: Week 6 Friday (30 Aug 2019) 11:45 pm AEST

Week 7 - 02 Sep 2019

Module/Topic	Chapter	Events and Submissions/Topic
Lecture 1: Muscle Lecture 2: Bones and skeletal tissue	Kerr, 6, 10 Young et. *al*., 6, 10	Tutorial (Week 6 material)

Week 8 - 09 Sep 2019

Module/Topic	Chapter	Events and Submissions/Topic
Lecture 1: Renal System Lecture 2: Nervous System	Kerr, 16, 7 Young et. *al*., 16, 7, 20	Tutorial (Week 7 material)

Week 9 - 16 Sep 2019

Module/Topic	Chapter	Events and Submissions/Topic
Lecture 1: Diagnostic cytopathology 1 Lecture 2: Diagnostic cytopathology 2		Tutorial (Week 8 material)

Week 10 - 23 Sep 2019

Module/Topic	Chapter	Events and Submissions/Topic
Residential School		Slide portfolio due 29 September 2019, at the end of the residential school. The workbook will be due for submission on 30 September as stated below.

Week 11 - 30 Sep 2019

Module/Topic	Chapter	Events and Submissions/Topic
Lecture 1: Autopsy and post mortem Lecture 2: Quality Assurance		Tutorial (Week 9 & 10 material) **Practical Portfolio and Workbook** Due: Week 11 Monday (30 Sept 2019) 3:00 pm AEST

Week 12 - 07 Oct 2019

Module/Topic	Chapter	Events and Submissions/Topic
Revision		

Review/Exam Week - 14 Oct 2019

Module/Topic	Chapter	Events and Submissions/Topic

Exam Week - 21 Oct 2019

Module/Topic	Chapter	Events and Submissions/Topic

Term Specific Information

Your unit coordinator for BMSC13016 Histopathology and Cytopathology is Ingrid Christiansen. You can contact me using the forum on the unit's Moodle site or alternatively through email (i.christiansen@cqu.edu.au) or on 07 4930 6518. The forum for this unit is continuously monitored and you can expect a response within 24 hours of posting your question.

As the name suggests, this unit will provide you with and extension of knowledge of histology and cytology, along with some of the pathologies identified in these laboratory spaces. BMSC13016 Histopathology and Cytopathology is a core unit in two courses,:

- Bachelor of Medical Sciences (Pathology)
- Bachelor of Medical Laboratory Science

You will be provided an opportunity to explore how to apply the knowledge learnt in lecture material in a compulsory residential school. Here you will extend on the microtomy techniques you have already learnt, and begin training in identification of basic tissue types and special stains which are associated with these tissues.

Tutorials are delivered each week via ZOOM. Students enrolled in distance delivery mode can also attend the live tutorials using ZOOM. These tutorials will also be recorded for the benefit of those students who are unable to attend the live tutorial. During these tutorials, we will work through the weekly study questions that are provided to you on the Moodle site. These weekly study questions will help you apply knowledge learned during the weekly lecture and prepare you for the assessments. You will get the most benefit from the tutorials if you watch the weekly lectures beforehand and attempt the weekly study questions. You are strongly encouraged to participate in tutorials. 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.

A poll will be conducted at the start of the Term to determine the most suitable day and time for the Zoom tutorial and the details will be made available on the Moodle site.

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

Assessment Tasks

1 Case Study Report

Assessment Type
Written Assessment

Task Description
You will be provided with an authentic clinical case study on the Moodle site.
The following information regarding the case will be available to you: clinical presentation, patient history, tissue morphology, haematoxylin and eosin images, special stain images and biochemistry results (if any).

You are then required to answer a series of questions in a Moodle Quiz to obtain further information and test results. This quiz is worth 40% of the marks for this assessment.

You are then required to write a report (around 1,000 words) using a case study approach describing the pathology observed, aetiology, specific morphological and histopathological characteristics observed that led to the diagnosis, differential diagnosis, treatment options and any recommended further tests. This case report is worth 60% of the marks for this assessment.

Guidelines to complete the report, marking rubric and a template will be available on the Moodle site.

Assessment Due Date
Week 6 Friday (30 Aug 2019) 11:45 pm AEST
Quiz answers automatically save in Moodle, case report to be submitted online.

Return Date to Students
Week 8 Monday (9 Sept 2019)

Weighting
20%

Minimum mark or grade
Minimum grade - 50%

Assessment Criteria
The written assessment task is marked according to how well you have met the specific requirements and in accordance with the criteria outlined below:

Presentation: The report is presented in the required template. Clarity of purpose and coherence of expression (spelling, grammar, syntax); Clear and organised flow of information.

Abstract: Provides a clear overview and overall summary of the case study.

Introduction: Provides necessary background information and pathophysiology of the case. Does not discuss the final diagnosis rather supports the intended diagnosis via arguments.

Materials and Methods: Briefly describes all the methods used to aid in diagnosis. Discusses further tests to be employed to confirm the diagnosis.

Results: All data presented clearly with reference ranges. Layout is clear with further tests and expected results discussed.

Discussion: Clear discussion of the results with supporting arguments and reasoning for arriving at the final diagnosis.

References: Harvard or APA referencing system used with appropriate in-text references

Referencing Style

- American Psychological Association 6th Edition (APA 6th edition)
- Harvard (author-date)

Submission
Online

Learning Outcomes Assessed

- Distinguish histopathological and cytopathological specimens according to body system, pathology and artefactual morphology
- Discuss the features of inflammatory disease processes and the range of tissue responses
- Describe the neoplastic process, grading systems for staging malignant neoplasms and correlation with gene expression
- Discuss the principles, mechanisms, requirements and the application of use for special stain procedures and specialised fixation techniques of new molecular and hybridisation techniques in histology and cytology.

Graduate Attributes

- Communication
- Problem Solving
- Critical Thinking
- Information Literacy
- Information Technology Competence

2 Practical Portfolio and Workbook

Assessment Type
Practical Assessment

Task Description
Over the 3 days of the residential school / block practical you will perform a series of histological 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. The practical will include (but is not limited to);

- Microtomy and H&E staining. You will section 10 different blocks of tissue, stain them using H&E staining, identify the tissue and label the slide accordingly.
- Four different special/Immunohistological stains. Which stains will depend on the type of tissues that can be obtained, full details to perform the stains will be given in the laboratory manual.
- Simulated fine needle aspirate collection followed by preparation of slides and staining.
- Immunohistochemical / Immunofluorescent staining
- Completion of the workbook. A series of questions will assess your knowledge and understanding of histology, cytology and histological/cytological technique. This may require you to do some pre-reading before the residential school / block practical.

Assessment Due Date
Week 11 Monday (30 Sept 2019) 3:00 pm AEST
The slide portfolio will be due on the completion of the residential school (Sunday 29/9/19), while the workbook may be handed in up to 24 hours after the completion of the residential school.

Return Date to Students
Week 12 Friday (11 Oct 2019)

Weighting
40%

Minimum mark or grade
A minimum grade of 50% is required to pass this task.

Assessment Criteria
Assessment of the slides will be done by academic staff with expertise in histology and cytology. A maximum of sixteen (16) slides will be handed in with a workbook.

- Immunohistochemical / Immunofluorescent stain: Quality of the stain will be marked out of 10 marks - 1 slide
- Special stains. The quality of four stains will be marked out of 20 marks (5 marks per stain) - 4 slides
- Fine needle aspirate collection, preparation of slide and staining will be assessed in this FNA simulation and marked out of 10 marks - 1 slide
- Microtomy and H&E staining. Each section is worth 1 mark for correctly identifying the tissue and 4 marks for the produced slide. (5 marks per slide x 10 slides = 50 marks in total)
- The workbook will be marked against a set of correct answers (10 marks available)

Referencing Style

- American Psychological Association 6th Edition (APA 6th edition)
- Harvard (author-date)

Submission
Offline

Submission Instructions
The stained and labelled slides will be submitted on a slide tray provided along with the completed workbook.

Learning Outcomes Assessed

- Distinguish histopathological and cytopathological specimens according to body system, pathology and artefactual morphology

- Perform techniques and explain the principles, mechanisms and requirements of use for special stain procedures and specialised fixation techniques

Graduate Attributes

- Communication
- Problem Solving
- Critical Thinking
- Information Literacy
- Ethical practice

Examination

Outline
Complete an invigilated examination.

Date
During the examination period at a CQUniversity examination centre.

Weighting
40%

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