



# LMED28002 Haematopathology 1

## Term 1 - 2024

Profile information current as at 19/05/2024 01:49 am

All details in this unit profile for LMED28002 have been officially approved by CQUniversity and represent a learning partnership between the University and you (our student). The information will not be changed unless absolutely necessary and any change will be clearly indicated by an approved correction included in the profile.

### General Information

#### Overview

On completion of this unit, you will be able to evaluate the evidence base for haematological tests used in the diagnosis and monitoring of diseases in the major organ systems of the body. Problem-solving and decision making skills will be developed through the use of authentic case studies. Skill development in instrument calibration, best practice measurement, interpretation of test results and test quality control monitoring will occur through practical exercises. You will be required to attend a compulsory residential school on the Rockhampton campus to promote the development of unit learning outcomes. The residential school may be scheduled outside of the term of offering of the unit.

#### Details

Career Level: *Postgraduate*

Unit Level: *Level 8*

Credit Points: 6

Student Contribution Band: 8

Fraction of Full-Time Student Load: 0.125

#### Pre-requisites or Co-requisites

Prerequisite 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 1 - 2024

- 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

**Feedback**

Lecture style could be enhanced through lectorial style teaching.

**Recommendation**

Enhance the lectures by incorporating some lectorial styles of learning.

#### Feedback from SUTE, student feedback, self reflection

**Feedback**

There is too much content for 11 weeks of learning.

**Recommendation**

Look at ways to teach some of the content before lectures (lectorial style), and in other formats of learning.

#### Feedback from SUTE, student feedback and reflection

**Feedback**

The academic rigour and weightings of the assessments could improve.

**Recommendation**

Review of the context of the assessments and to improve assessments and feedback to students.

#### Feedback from Self reflection

**Feedback**

The inclusion of more dry practical through case study interpretations would improve the student learning.

**Recommendation**

Include more case study analysis and result interpretations into tutorials.

## Unit Learning Outcomes

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

1. Distinguish benign from malignant haematological disorders based on numerical, cytogenetic and morphological changes in the cells
2. Critique the detection and monitoring of blood diseases using laboratory tests appropriate to the patient's clinical condition
3. Evaluate disorders of haemostasis and the use of anticoagulant therapies
4. Analyse results of haematological tests and provide provisional and differential diagnoses with suggested further testing to support and confirm the diagnosis
5. Perform core haematology and haemostasis tests including quality control procedures.

# 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
<b>1 - Knowledge</b>	○	○	○	○	○
<b>2 - Communication</b>	○	○	○	○	○
<b>3 - Cognitive, technical and creative skills</b>	○	○	○	○	○
<b>4 - Research</b>					
<b>5 - Self-management</b>					
<b>6 - Ethical and Professional Responsibility</b>					○
<b>7 - Leadership</b>					
<b>8 - Aboriginal and Torres Strait Islander Cultures</b>					

## Textbooks and Resources

### Textbooks

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#### Prescribed

##### **Clinical Haematology Atlas**

6th edition (2021)

Authors: Bernadette F. Rodak, Jacqueline H. Carr

Elsevier - Health Sciences Division

St Louis , Missouri , USA

ISBN: 9780323322492

Binding: Paperback

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#### Prescribed

##### **Rodak's Haematology**

6th edition (2020)

Authors: Elaine Keohane, Catherine Otto, Jeanine Walenga

Saunders

Philadelphia , Pennsylvan , USA

ISBN: 9780323530453

Binding: Hardcover

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#### Supplementary

##### **Blood cells**

6th Edition (2022)

Authors: Bain, Barbara

John Wiley & Sons, Inc

Hoboken , New Jersey , USA

ISBN: 1-119-82029-4

Binding: Hardcover

[View textbooks at the CQUniversity Bookshop](#)

### IT Resources

**You will need access to the following IT resources:**

- CQUniversity Student Email
- Internet
- Unit Website (Moodle)
- Zoom (both microphone and webcam capability)
- WBC Counter App on mobile device
- BM Counter App on mobile device

## Referencing Style

All submissions for this unit must use the referencing style: [Vancouver](#)

For further information, see the Assessment Tasks.

## Teaching Contacts

**Jacqui Dennis** Unit Coordinator

[j.dennis@cqu.edu.au](mailto:j.dennis@cqu.edu.au)

## Schedule

**Week 1 - 04 Mar 2024**

Module/Topic	Chapter	Events and Submissions/Topic
1. Introduction to Haematopathology 1 and Haematology. 2. Haematopoiesis, 3. Red cells, Iron and Haemoglobin	Rodak's: Ch 1, 4-8, Clinical Hematology Atlas: Ch 1-2	Tutorial: Introduction to Diagnostic Haematology Introduction to blood film morphology

**Week 2 - 11 Mar 2024**

Module/Topic	Chapter	Events and Submissions/Topic
1. Anaemia: Microcytic, Macrocytic, Normocytic and Haemolytic 2. Thalassemia and Haemoglobinopathies	Rodak's: Ch 16-18, 24-25 Clinical Hematology Atlas: Ch 10-13	Tutorial: Introduction to normal Red blood cell morphology.

**Week 3 - 18 Mar 2024**

Module/Topic	Chapter	Events and Submissions/Topic
1. Haemolytic Anaemia: 3 parts 2. Erythrocyte Inclusions and other abnormalities	Rodak's: Ch 20-23, 12-13 Clinical Hematology Atlas: Ch 10-13	Tutorial: Blood film morphology: Red cell abnormalities and overview

**Week 4 - 25 Mar 2024**

Module/Topic	Chapter	Events and Submissions/Topic
1. White cells structure, function, differential count. 2. Platelet structure and function	Rodak's: Ch 9-10, 37, 38 Clinical Hematology Atlas: Ch 4-9	Tutorial: Platelet disorders and platelet morphology Introduction to White blood cell morphology.

**Week 5 - 01 Apr 2024**

Module/Topic	Chapter	Events and Submissions/Topic
1. Haemostasis: Overview 2. Coagulopathies 3. Thrombosis and Anticoagulation	Rodak's: Ch 35, 36, 41-42	Tutorial: Haemostasis laboratory testing

**Vacation Week - 08 Apr 2024**

Module/Topic	Chapter	Events and Submissions/Topic
Independent study week - an opportunity for self-directed learning, mid-unit revision and catch up.		No lectures

**Week 6 - 15 Apr 2024**

Module/Topic	Chapter	Events and Submissions/Topic
1. Non malignant white cell disorders 2. Haematological Malignancy, development, genetics and nomenclature	Rodak: Ch 1 -2, 11-13, 41-42 Clinical Hematology Atlas: Ch 14	Tutorial: Non malignant white cell morphology <b>Clinical Case Study Assessment 1 Due</b>  <b>Haemostasis Case Study Analysis</b> Due: Week 6 Wednesday (17 Apr 2024) 11:45 pm AEST

**Week 7 - 22 Apr 2024**

Module/Topic	Chapter	Events and Submissions/Topic
1. Myeloid Leukaemia 2. Leukaemia diagnostics Part 1	Rodak's: Ch 29- 31 Clinical Hematology Atlas: Ch 15	Tutorial: Myeloid Leukaemia morphology

**Week 8 - 29 Apr 2024**

Module/Topic	Chapter	Events and Submissions/Topic

1. Lymphoid Leukaemia
2. Leukaemia diagnostics Part 2

Rodak's: Ch 28, 31, 34  
Clinical Hematology Atlas: Ch 16

Tutorial:  
Lymphoid Leukaemia morphology

### Week 9 - 06 May 2024

Module/Topic	Chapter	Events and Submissions/Topic
1. MDS 2. MPN	Rodak's: Ch 32-33 Clinical Hematology Atlas: Ch 17-19	Tutorial: White cell morphology overview and review. <b>Clinical Case Study Assessment 2 Due</b>  <b>Malignant Haematology Clinical Case Analysis</b> Due: Week 9 Thursday (9 May 2024) 11:45 pm AEST

### Week 10 - 13 May 2024

Module/Topic	Chapter	Events and Submissions/Topic
1. FBE parameters and Analysis 2. Quality control	Rodak's: Ch 26- 27, 28-30	Tutorial: Automation and Diagnostics

### Week 11 - 20 May 2024

Module/Topic	Chapter	Events and Submissions/Topic
1. Clinicals aspects of Malaria 2. Diagnostics of Malaria	Rodak's: Ch 22 Clinical Hematology Atlas: Ch 21	Tutorial: Laboratory diagnosis of Malaria

### Week 12 - 27 May 2024

Module/Topic	Chapter	Events and Submissions/Topic
Revision week		Tutorial: Revision

### Review/Exam Week - 03 Jun 2024

Module/Topic	Chapter	Events and Submissions/Topic
Revision and Exam Week		Independent revision and exam week.

### Exam Week - 10 Jun 2024

Module/Topic	Chapter	Events and Submissions/Topic
Exam Week		The End-of-Term Exam will be scheduled in the CQUniversity examination period. The exact date will be advised on the unit Moodle page. The end of term exam comprises 50% of the overall unit mark.

## Term Specific Information

Lectures will be recorded for this unit and will be available to students at the start of each week. Tutorials will run once a week live and also recorded for students to watch again later. The live tutorials provide the opportunity for students to attend and ask questions from each weeks learning as well. It is advisable that students revise the weekly lectures and recommended reading before attending the tutorials. Students are required to attend the compulsory residential school. Further information to follow. Please check the timetable for dates and complete registration in MYCQU when advised.

## Assessment Tasks

### 1 Haemostasis Case Study Analysis

**Assessment Type**  
Written Assessment

### **Task Description**

You will be provided with clinical cases that contain laboratory results, a clinical history and images. You will be required to analyse and discuss in detail what the results indicate on one of the cases.

A report, answering questions provided, will need to be submitted on your chosen clinical case.

Your report will contain interpretation of results, pathophysiology pertaining to the results and the possible provisional diagnosis and potential differential diagnosis as well.

You will also be required to research additional information about your provisional diagnosis, including further testing, information on prognosis and treatment options along with current research in this diagnosis.

Your knowledge of the lectures and tutorials in the weeks prior will be important in your answers.

Students are permitted to use Generative AI for this assessment in the following ways:

- developing literature search strategies
- compiling suitable literature sources and locating data
- guidance for structuring the assignment

If Generative AI is used in any way, it must be cited as per the CQU Guidelines (Academic Learning Centre).

As per academic writing requirements and assessment criteria; citations of information should be of the primary source (i.e. statistics returned by AI must be fact-checked and referenced from their original source as well as the AI source).

Failure to cite primary sources as well as AI sources could be considered a breach of academic integrity.

Your use of Generative AI must be clearly outlined in an appendix as a separate file which includes the prompt used and Generative AI response (in line with marking rubric). Failure to include an appendix may result in academic integrity investigation.

### **Assessment Due Date**

Week 6 Wednesday (17 Apr 2024) 11:45 pm AEST

### **Return Date to Students**

Week 8 Wednesday (1 May 2024)

Returned 02/5/24

### **Weighting**

20%

### **Assessment Criteria**

The clinical case studies will be assessed and marked as per the marking rubric which will be provided in the Assessment tile on Moodle.

The Assessment will be marked on the following:

- Analysis and interpretation of laboratory results.
- Ability to discuss the results and possible laboratory issues which may affect results.
- Discussion of clinical scenarios and possible differential diagnosis.
- Presentation of pathophysiology, aetiology and discussion of possible further testing within the clinical diagnosis discussion.

### **Referencing Style**

- [Vancouver](#)

### **Submission**

Online

### **Submission Instructions**

Submission will be online on Moodle

### **Learning Outcomes Assessed**

- Critique the detection and monitoring of blood diseases using laboratory tests appropriate to the patient's clinical condition

## **2 Malignant Haematology Clinical Case Analysis**

### **Assessment Type**

Written Assessment

### **Task Description**

This Assessment contains two parts. Part A contains morphology assessments which will make up 5% of your total mark. Part B will be the case study report which will make up 20% of your total mark.

Part A: This part of the Assessment will contain Cellavision morphology tests. These will be performed throughout the term and completion of these will be required to pass this assessment. Completion of all of these will also give you 5% towards your final mark. These Cellavision morphology tests will provide you with essential morphology skills, pertinent to your knowledge required for Part B of this assessment as well as your own ongoing morphology experience and



expertise.

Part B: You will be provided with clinical cases that contain laboratory results, a clinical history and images. You will be required to analyse and discuss in detail what the results indicate on one of the cases.

A report, answering questions provided, will need to be submitted on your chosen clinical case.

The report will include an interpretation of results, pathophysiology pertaining to the results and the provisional diagnosis and potential differential diagnosis.

You will be assessed on your interpretation of the results, pathophysiology pertaining to the results and answers to related questions. You will also be required to research additional information about your provisional diagnosis, including differential diagnosis, further testing and conclude with information on prognosis and treatment options along with current research in this diagnosis.

Your knowledge of the lectures and tutorials in the weeks prior will be important in your answers.

As this written assessment will be 30% of your final mark, your assessment of this clinical case study and current research and therapies will be assessed at a deeper level than the previous case study. Please ensure that you provide a thorough and in depth analysis of the clinical scenario.

Students are permitted to use Generative AI for this assessment in the following ways:

- developing literature search strategies
- compiling suitable literature sources and locating data
- guidance for structuring the assignment

If Generative AI is used in any way, it must be cited as per the CQU Guidelines (Academic Learning Centre).

As per academic writing requirements and assessment criteria; citations of information should be of the primary source (i.e. statistics returned by AI must be fact-checked and referenced from their original source as well as the AI source).

Failure to cite primary sources as well as AI sources could be considered breach of academic integrity.

Your use of Generative AI must be clearly outlined in an appendix as a separate file which includes the prompt used and Generative AI response (in line with marking rubric). Failure to include an appendix may result in academic integrity investigation.

### **Assessment Due Date**

Week 9 Thursday (9 May 2024) 11:45 pm AEST

### **Return Date to Students**

Week 11 Tuesday (21 May 2024)

### **Weighting**

30%

### **Assessment Criteria**

The clinical case studies will be assessed and marked as per the marking rubric which will be provided in the Assessment tile on Moodle.

The Assessment will be marked on the following:

- Analysis and interpretation of laboratory results.
- Ability to discuss the results and possible laboratory issues which may affect results.
- Discussion of clinical scenarios and possible differential diagnosis.
- Presentation of pathophysiology, aetiology and discussion of possible further testing within the clinical diagnosis discussion.

### **Referencing Style**

- [Vancouver](#)

### **Submission**

Offline

### **Submission Instructions**

Submission will be online on Moodle

### **Learning Outcomes Assessed**

- Distinguish benign from malignant haematological disorders based on numerical, cytogenetic and morphological changes in the cells
- Analyse results of haematological tests and provide provisional and differential diagnoses with suggested further testing to support and confirm the diagnosis

## **3 Laboratory Workbook / Practical assessment**

### **Assessment Type**

Laboratory/Practical

**Task Description**

Attendance at the Residential School is mandatory to pass this unit. Exact date will be advised on Moodle during the term.

Within the Residential school there will be two parts to this Assessment.

**Part A** will be a Laboratory workbook which will be completed over the residential school and will need to be handed in following completion of residential school.

The Laboratory Workbook has a number of tasks to be completed and is a PASS/FAIL Assessment. You will be assessed on both theory and practical skills as part of the Practical Portfolio.

**Part B** will be a Practical Assessment on the final day of the Residential School and it is has a Pass/ Fail grade on it but you must achieve a Pass to complete the unit.

This will assess the practical skills and understanding you have gained within the residential school.

**Assessment Due Date**

Laboratory Workbook will be due within a week of completion of the entire Residential school.

**Return Date to Students**

Assessment will be returned within two weeks of the Residential school.

**Weighting**

Pass/Fail

**Minimum mark or grade**

50%

**Assessment Criteria**

You must Pass both Parts of this Assessment.

For Part B : Students who pass the first attempt will be awarded the achieved grade up to 100% of the total marks.

Students who fail the first attempt will be granted a second attempt. The second attempt will be conducted in the second half of the final day, prior to completion of the residential school session. The repeat attempt will be a pass/fail, with the maximum marks being 50% of the achievable marks.

**Referencing Style**

- [Vancouver](#)

**Submission**

Online

**Submission Instructions**

Submission will be online on Moodle

**Learning Outcomes Assessed**

- Perform core haematology and haemostasis tests including quality control procedures.

**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