# BMED19007 *Forensic Science*
## Term 1 - 2023

Profile information current as at 03/05/2024 01:11 am



## General Information

### Overview
On successful completion of this unit, you will be able to explain the roles and guiding ethical principles for forensic scientists in cases of law and in incident investigations. You will interpret information from the current forensic science literature, methodologies and technologies including methods for dealing with trace evidence and the use of DNA profiling for identification, and how forensic science results are interpreted and analysed. These topics will be explored through practical classes.

### Details
Career Level: *Undergraduate*
Unit Level: *Level 2*
Credit Points: *6*
Student Contribution Band: *8*
Fraction of Full-Time Student Load: *0.125*

### Pre-requisites or Co-requisites
CHEM11041 Chemistry for the Life Sciences or CHEM11043 Atoms, Molecules and Matter
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 - 2023

- Mixed Mode

### 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. **Practical Assessment**
Weighting: Pass/Fail
2. **Written Assessment**
Weighting: 50%
3. **Take Home Exam**
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 Student feedback.

**Feedback**
Overall, the students were satisfied with the unit and the feedback was positive.

**Recommendation**
Continue to monitor student satisfaction and gather student feedback.

#### Feedback from Self reflection

**Feedback**
The PowerPoints used in the lectures need updating with more Australian focused information.

**Recommendation**
Update the PowerPoints.

## Unit Learning Outcomes

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

1. Explain the roles and the guiding ethical principles for forensic scientists in cases of law, in incident investigations, and in international collaborations
2. Interpret information obtained from a variety of forensic science laboratory techniques for physical evidence analysis
3. Describe and critique current forensic science literature and technologies including methods for dealing with trace evidence and the use of DNA profiling for identification
4. Analyse and communicate forensic science results clearly and accurately, drawing appropriate conclusions.

## 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 |
| 1 - Written Assessment - 50% | | | • | |
| 2 - Practical Assessment - 0% | | • | | • |
| 3 - Take Home Exam - 50% | • | | | |

### Alignment of Graduate Attributes to Learning Outcomes

| Graduate Attributes | Learning Outcomes | | | |
|---|---|---|---|---|
| | 1 | 2 | 3 | 4 |
| 1 - Communication | | | | • |
| 2 - Problem Solving | | • | | • |
| 3 - Critical Thinking | | | • | • |
| 4 - Information Literacy | | | • | |
| 5 - Team Work | | • | | |
| 6 - Information Technology Competence | | | | |
| 7 - Cross Cultural Competence | • | | | |
| 8 - Ethical practice | • | | | |
| 9 - Social Innovation | | | | |
| 10 - Aboriginal and Torres Strait Islander Cultures | | | | |

## Textbooks and Resources

### Textbooks

BMED19007

**Prescribed**

**Criminalistics An Introduction to Forensic Science**
Edition: 11th (2014)
Authors: Richard Saferstein
Pearson Education Limited
Essex , England
ISBN: 9781292062020
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)
- Microsoft Office

## Referencing Style

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

- Harvard (author-date)
- American Psychological Association 7th Edition (APA 7th edition)

For further information, see the Assessment Tasks.

## Teaching Contacts

**Olivia Daniels** Unit Coordinator
o.daniels@cqu.edu.au
**Amie Anastasi** Unit Coordinator
a.anastasi@cqu.edu.au

## Schedule

**Week 1 - 06 Mar 2023**

| Module/Topic | Chapter | Events and Submissions/Topic |
|---|---|---|
| Introduction to Forensic Science, The Crime Scene | Criminalistics: An Introduction to Forensic Science<br>Chapters 1 and 2 | |

**Week 2 - 13 Mar 2023**

| Module/Topic | Chapter | Events and Submissions/Topic |
|---|---|---|
| Physical Evidence | Criminalistics: An Introduction to Forensic Science<br>Chapters 3 and 4 | |

**Week 3 - 20 Mar 2023**

| Module/Topic | Chapter | Events and Submissions/Topic |
|---|---|---|

| | | |
|---|---|---|
| Fingerprints | Criminalistics: An Introduction to Forensic Science<br>Chapter 6 | |

**Week 4 - 27 Mar 2023**

| Module/Topic | Chapter | Events and Submissions/Topic |
|---|---|---|
| Microscopy | Criminalistics: An Introduction to Forensic Science<br>Chapters 7 | |

**Week 5 - 03 Apr 2023**

| Module/Topic | Chapter | Events and Submissions/Topic |
|---|---|---|
| Firearms, Tools, Glass | Criminalistics: An Introduction to Forensic Science<br>Chapters 8 and 9 | **Practical Assessment** Due: Week 5 Wednesday (5 Apr 2023) 11:59 pm AEST |

**Vacation Week - 10 Apr 2023**

| Module/Topic | Chapter | Events and Submissions/Topic |
|---|---|---|

**Week 6 - 17 Apr 2023**

| Module/Topic | Chapter | Events and Submissions/Topic |
|---|---|---|
| Hair, Fibres | Criminalistics: An Introduction to Forensic Science<br>Chapter 10 | |

**Week 7 - 24 Apr 2023**

| Module/Topic | Chapter | Events and Submissions/Topic |
|---|---|---|
| Drugs | Criminalistics: An Introduction to Forensic Science<br>Chapter 11 | |

**Week 8 - 01 May 2023**

| Module/Topic | Chapter | Events and Submissions/Topic |
|---|---|---|
| Toxicology | Criminalistics: An Introduction to Forensic Science<br>Chapter 12 | **Literature Review** Due: Week 8 Monday (1 May 2023) 11:59 pm AEST |

**Week 9 - 08 May 2023**

| Module/Topic | Chapter | Events and Submissions/Topic |
|---|---|---|
| Metals, Paints, Soils | Criminalistics: An Introduction to Forensic Science<br>Chapter 13 | |

**Week 10 - 15 May 2023**

| Module/Topic | Chapter | Events and Submissions/Topic |
|---|---|---|
| Serology | Criminalistics: An Introduction to Forensic Science<br>Chapter 14 | |

**Week 11 - 22 May 2023**

| Module/Topic | Chapter | Events and Submissions/Topic |
|---|---|---|
| DNA Profiling | Criminalistics: An Introduction to Forensic Science<br>Chapter 15 | |

**Week 12 - 29 May 2023**

| Module/Topic | Chapter | Events and Submissions/Topic |
|---|---|---|
| Arson, Explosions | Criminalistics: An Introduction to Forensic Science<br>Chapter 16 | |

| Review/Exam Week - 05 Jun 2023 | | |
|---|---|---|
| **Module/Topic** | **Chapter** | **Events and Submissions/Topic** |

| Exam Week - 12 Jun 2023 | | |
|---|---|---|
| **Module/Topic** | **Chapter** | **Events and Submissions/Topic** |
| | | **Online Test** Due: Exam Week Friday (16 June 2023) 11:55 pm AEST |

## Term Specific Information

The unit coordinator for this unit is Dr. Olivia Daniels.
My email address is: o.daniels@cqu.edu.au
My Phone number is: (07) 4930 6775. Please note that this is a computer based phone. I am sometimes not available by phone and there may be no message facilities, so you can not leave a message.
The very best way to contact me is by email. I check my emails regularly and I am usually quick to respond. However, Please allow two working days for a reply.

## Assessment Tasks

### 1 Practical Assessment

**Assessment Type**
Practical Assessment

**Task Description**
This assessment has two components that will be completed at the residential school. One component is skills based and the other is theory based. This assessment is marked on a Pass/Fail basis.

**Assessment Due Date**
Week 5 Wednesday (5 Apr 2023) 11:59 pm AEST
This assessment will be completed during residential school.

**Return Date to Students**
Week 6 Friday (21 Apr 2023)
Results will be returned during residential school.

**Weighting**
Pass/Fail

**Assessment Criteria**
You will be assessed on content knowledge and skill competency.

**Referencing Style**

- Harvard (author-date)
- American Psychological Association 7th Edition (APA 7th edition)

**Submission**
Online

**Submission Instructions**
You will complete this assessment during residential school. All detail will be provided on the Moodle site and during residential school.

**Learning Outcomes Assessed**

- Interpret information obtained from a variety of forensic science laboratory techniques for physical evidence analysis
- Analyse and communicate forensic science results clearly and accurately, drawing appropriate conclusions.

### 2 Literature Review

**Assessment Type**
Written Assessment

**Task Description**

Recent advances in forensic science—A literature review

Over the past decade, there have been rapid advances in forensic science and forensic analytical capabilities, mainly driven by the advent of new methodologies, techniques or instrumentation. Your task for this assignment is to prepare a literature review by choosing an area of forensic science that interests you, and where a major advance in capability has occurred recently or is currently occurring. Some examples might include:

- Organic gunshot residue analysis
- Laser ablation ICP-MS for metals analysis in a variety of case exhibits (including packaging tape, glass, and ammunition)
- Capillary electrophoresis for explosives detection
- Y-chromosome STR and single nucleotide polymorphism (SNP) analysis
- New methods for analysing degraded DNA
- RNA fingerprinting analysis
- New developments in analytical spectroscopy
- Solid phase microextraction of drugs
- Arson and post-explosion evidence
- New scientific developments in forensic anthropology and forensic archaeology

Word count: 1500-2000 words (excluding references). Please use 2.0 line spacing and size 12 font (preferably Arial).

**Assessment Due Date**

Week 8 Monday (1 May 2023) 11:59 pm AEST

The assessment must be submitted via Moodle.

**Return Date to Students**

Week 10 Monday (15 May 2023)

The marked assessment will be returned via Moodle.

**Weighting**

50%

**Minimum mark or grade**

50%

**Assessment Criteria**

The literature review will be out of 120 initial marks. Marks will be awarded for:

- Introduction (20 Marks)
- Review, analysis and style (body of text) (50 Marks)
- Conclusion (20 Marks)
- Presentation (10 Marks)
- Clarity of expression (10 Marks)
- Referencing (10 Marks)

The initial marks will be totaled and converted to a Final grade out of 30 marks *e.g.* an initial mark of 120 = a Final grade of 30 Marks.

A Marking Critertia document will be available on Moodle along with further information for this assessment.

**Referencing Style**

- Harvard (author-date)
- American Psychological Association 7th Edition (APA 7th edition)

**Submission**

Online

**Submission Instructions**

This assessment is to be submitted via the Literature Review submission site on Moodle.

**Learning Outcomes Assessed**

- Describe and critique current forensic science literature and technologies including methods for dealing with trace evidence and the use of DNA profiling for identification

## 3 Online Test

**Assessment Type**
Take Home Exam

**Task Description**
The online test will be in the form of a Moodle Quiz requiring short answer to essay type responses. Students will be required to answer the questions within the given time period. More information will be provided in Moodle.

**Assessment Due Date**
Exam Week Friday (16 June 2023) 11:55 pm AEST
Online Exam (exact time TBA)

**Return Date to Students**
Exam Week Friday (16 June 2023)
Marks to be released on certification of grades day.

**Weighting**
50%

**Minimum mark or grade**
50 %

**Assessment Criteria**
Due to the nature of the questions, each question will have specific instructions and assessment criteria, which will be further explained in Moodle, as well as the assessment document.

**Referencing Style**

- Harvard (author-date)
- American Psychological Association 7th Edition (APA 7th edition)

**Submission**
Online

**Submission Instructions**
Via the submission button at the end of the Online Exam.

**Learning Outcomes Assessed**

- Explain the roles and the guiding ethical principles for forensic scientists in cases of law, in incident investigations, and in international collaborations

## 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