Forensic Chemistry 2002ESC - Tri 2 2021 - Nathan Campus - Blended

1. General Course Information

1.1 Course Details

Course code	2002ESC
Course title	Forensic Chemistry
Academic organisation	ESC School of Environment and Science
Trimester	Trimester 2 2021
Mode	Blended
Level	Undergraduate
Location	Nathan, On Campus
Credit point value	10

Restrictions:

Restriction: Students must be enrolled in the following programs: 1264 B Forensic Science, 1433 B Forensic Sc/B Crim Crim Just

Course Description:

This course expands the student understanding of forensic chemistry introduced in Year 1. This course will be the first unique forensic course for the students of the Forensic Chemistry major within the forensic science programs. It will include basic forensic chemistry, trace, arson and explosive. It will be restricted to students in the forensic science program.

Assumed Background:

Students should have already completed 1000ESC Introduction to Forensic Science and 1008NSC Principles of Forensic Investigation before they commence this course. Assumed knowledge includes Chemistry 1A and Chemistry 1B.

1.2 Course Introduction

Welcome to 2002ESC Forensic Chemistry.

This course aims to provide you with an understanding of the techniques and processes used in collecting physical evidence from suspected crime scenes and its subsequent analysis at a NATA-accredited forensic chemistry laboratory. This course also highlights the significant impact of the outcomes of such analysis on the presentation of expert evidence in court. It builds upon the introduction provided in 1000ESC Introduction to Forensic Science and 1008NSC Principles of Forensic Investigation.

Most of the class learning materials including lecture and tutorial notes will be placed in the L@G course site however please come to class ready to take additional notes. This is a great opportunity to develop your skills in individual note taking and organisation. The writing of contemporaneous notes during your forensic casework is a crucial component of your daily work and this will be good practice!

Before your first class you should take the time to familiarise yourself with the course site and to go through the course outline which provides information on weekly topics and tutorial themes. If there are any changes made to the running order of classes for any reason, an announcement will be made on the L@G course site and emailed to all enrolled students.

Communication and correspondence
Correspondence and appointment requests can be emailed to me at s.cresswell@griffith.edu.au. Please include the course code, your full name and student number in any email communication.

All course correspondence will be sent to your student email accounts, so please be sure to forward your account to another email account if you do not plan on checking your university account regularly.

Previous Student Feedback

This course was offered for the first time in 2020 and due to the COVID closures we were unable to offer laboratory classes in this first offering.

Limited feedback was received from the small cohort of students who took the course, but the comments below were received:

- This course gave a general understanding of what a forensic chemist could do
- For a 2nd year student it was good to know my options for future employment
- More detail on how to do some of the assignments would be very helpful

1.3 Course Staff

Primary Convenor
APro Sarah Cresswell

Email	s.cresswell@griffith.edu.au
Campus	Nathan Campus
Building	Science 1 (N25)
Room	2.22

Lecturer **Dr William Gee**

Email	w.gee@griffith.edu.au
Campus	Nathan Campus
Building	Science 1 (N25)
Room	2.10

1.4 Timetable

Timetables are available on *the Programs and Courses website*.

NB: Details contained in this Section of the course profile and Section 4.1 Learning Activities are to be read in conjunction with the official class timetable. The published class timetable which is the authoritative source for timetabling information for all campuses can be located by clicking on the above link.

Additional Timetable Information

This course will be offered in blended mode in Trimester 2 2021. This means that lectures will be offered online but all other course activities will take place on campus (tutorials and laboratory classes). Please ensure you check the Learning@Griffith course site for specific details of classes.

1.5 Lecture Capture

It is standard practice at Griffith University that lectures timetabled in lecture capture-enabled venues are recorded and made available to students on the relevant course site, in accordance with the University's Lecture Capture Policy.

The lecture series delivered as part of this course will be recorded and accessible via the Learning@Griffith course site.

2. Aims, Outcomes & Graduate Attributes

2.1 Course Aims

Welcome to 2002ESC Forensic Chemistry.

This is a 10CP course available to students enrolled in the programs 1264 Bachelor of Forensic Science and 1433 Bachelor of Forensic Science/Bachelor of Criminology and Criminal Justice. It is a core course for the Forensic Chemistry major and an elective for the Forensic Molecular Biology major.

Course Aims and Overview

This course aims to provide you with a detailed understanding of the techniques and processes used in NATA-accredited forensic chemistry laboratories and crime scene evidence collection techniques. This includes recovery of trace evidence

including fibres, glass, paint, toolmarks, fingerprints and chemical traces form arson or explosion scenes.

It further aims to demonstrate how such information can contribute to assisting police in identifying the nature of evidence collected from scenes and how the analysis of such evidence can be presented to a court.

2.2 Learning Outcomes

After successfully completing this course you should be able to:

1.CONTENT-BASED OUTCOMES

1.1 Explain the processes and techniques involved in forensic chemical analyses as practiced in NATA-accredited forensic laboratories.

1.2 Understand how the outcomes of such analyses impact on the presentation of expert forensic evidence in court and how such evidence might be challenged.

2.COGNITIVE OUTCOMES

2.1 Evaluate the forensic chemical analysis techniques currently used in NATA-accredited forensic chemistry laboratories and interpret their results.

2.2 Justify the ethical responsibilities of forensic experts who analyse collected evidentiary items and provide fact as well as opinion evidence in court.

3.APPLICATION OUTCOMES

3.1 Demonstrate the ability to use the correct language to communicate complex scientific ideas to a lay audience.

3.2 Demonstrate an understanding of the role and importance of problem-solving skills in forensic chemical analyses.

3.3 Continue the process of acquiring the skills and knowledge relevant and applicable to future study, or employment in forensic laboratory organisations, or in other professions associated with the criminal justice system.

2.3. Graduate Attributes

For further details on the Griffith Graduate please click here

Griffith University prepares influential graduates to be:

- Knowledgeable and skilled, with critical judgement
- Effective communicators and collaborators
- Innovative, creative and entrepreneurial
- Socially responsible and engaged in their communities
- Culturally capable when working with First Australians
- Effective in culturally diverse and international environments

This table demonstrates where each of the Griffith Graduate Attributes is taught, practised and assessed in this course.

For further details on the Griffith Graduate Attributes please refer to The Griffith Graduate policy.

University wide attributes

Graduate Attribute	Taught	Practised	Assessed
Knowledgeable and skilled, with critical judgement	•	•	•
Effective communicators and collaborators	•	•	•
Innovative, creative and entrepreneurial	•		
Socially responsible and engaged in their communities	•	•	•

3. Learning Resources

3.1 Required Resources

Details of your Required Learning Resources are available from the Reading List.

3.2 Recommended Resources

Details of your Recommended Learning Resources are available from the Reading List.

3.3 University Learning Resources

The University provides many facilities and support services to assist students in their studies. Links to information about University support resources that are available to students are included below for easy reference.

Readings - New online service enabling students to access Required and Recommended Learning resources. It connects to the library catalogue to assist with quickly locating material held in Griffith libraries and enables students to manage and prioritise their readings, add personal study notes and export citations.

Learning@Griffith - there is a dedicated website for this course via the Learning@Griffith at myGriffith.

Academic Integrity Tutorial - this tutorial helps students to understand what academic integrity is and why it matters. You will be able to identify types of academic misconduct, understand what skills you will need in order to maintain academic integrity, and learn about the processes of referencing styles.

Student Support - provides a range of services to support students throughout their studies including personal support such as Counselling and Health Services; Academic support; and Financial and Welfare support.

The Careers and Employment Team provides: Career Wellbeing, Career Planning and Decision Making, Finding Jobs, Skills Identification and Development, Graduate Employment Information, LinkedIn Profile Review, Interview Preparation, Online Psychometric and Aptitude Test Preparation, International Student Support, Disability Disclosure Strategies and Higher Degree Research (HDR) Career Consultations.

Library and Learning Services: Library and Learning Services provides a wide range of quality client-focused services and programs to students, researchers and staff of the University. Library and Learning Services works in collaboration with the academic community to achieve academic and research outcomes.

Support for learning - the University provides access to common use computing facilities for educational purposes.

Code of Practice - Griffith Information Technology Resources.

4. Teaching & Learning Activities

4.1 Learning Activities

Date	Lecture	Tutorial	Other Activities
19 Jul - 25 Jul	**Physical Evidence Lecture**: A weekly 2-hour lecture will be presented introducing physical evidence and using fibres as an example, explaining the nature of transfer and persistence of forensic trace evidence. **Learning Outcomes:** 1.1, 1.2, 2.2, 3.3	**Physical Evidence Tutorials**: A weekly 2-hour tutorial will allow you a chance to discuss topics raised in lectures, to look at case examples and analyse the data from forensic chemistry analyses. Questions will be set and you are expected to come with answers prepared. These questions will provide you with excellent examples of the types of questions found in your EoT exam. Your participation is essential! **Learning Outcomes:** 1.1, 1.2, 2.1, 2.2, 3.1, 3.2, 3.3	

Date	Lecture	Tutorial	Other Activities
26 Jul - 1 Aug	**Physical Evidence Lecture**: A weekly 2-hour lecture will be presented introducing physical evidence and using fibres as an example, explaining the nature of transfer and persistence of forensic trace evidence. **Learning Outcomes:** 1.1, 1.2, 2.2, 3.3	**Physical Evidence Tutorials**: A weekly 2-hour tutorial will allow you a chance to discuss topics raised in lectures, to look at case examples and analyse the data from forensic chemistry analyses. Questions will be set and you are expected to come with answers prepared. These questions will provide you with excellent examples of the types of questions found in your EoT exam. Your participation is essential! **Learning Outcomes:** 1.1, 1.2, 2.1, 2.2, 3.1, 3.2, 3.3	
2 Aug - 8 Aug	**Physical Evidence - Fires**: Weekly 2-hour lectures will cover the nature of fires and the forensic analysis of debris from the scenes of fires. **Learning Outcomes:** 1.1, 1.2, 2.1, 3.3	**Physical Evidence Tutorials**: A weekly 2-hour tutorial will allow you a chance to discuss topics raised in lectures, to look at case examples and analyse the data from forensic chemistry analyses. Questions will be set and you are expected to come with answers prepared. These questions will provide you with excellent examples of the types of questions found in your EoT exam. Your participation is essential! **Learning Outcomes:** 1.1, 1.2, 2.1, 2.2, 3.1, 3.2, 3.3	**Physical Evidence Laboratory** (Laboratory): You will undertake three laboratory classes to examine items relating to a fictitious crime scene. Over the three weeks of laboratory classes you will undertake a range of forensic chemical anlayses and record your contemporaneous notes in your laboratory book. **Learning Outcomes:** 2.1, 3.2, 3.3
16 Aug - 22 Aug	**Physical Evidence - Fires**: Weekly 2-hour lectures will cover the nature of fires and the forensic analysis of debris from the scenes of fires. **Learning Outcomes:** 1.1, 1.2, 2.1, 3.3	**Physical Evidence Tutorials**: A weekly 2-hour tutorial will allow you a chance to discuss topics raised in lectures, to look at case examples and analyse the data from forensic chemistry analyses. Questions will be set and you are expected to come with answers prepared. These questions will provide you with excellent examples of the types of questions found in your EoT exam. Your participation is essential! **Learning Outcomes:** 1.1, 1.2, 2.1, 2.2, 3.1, 3.2, 3.3	**Physical Evidence Laboratory** (Laboratory): You will undertake three laboratory classes to examine items relating to a fictitious crime scene. Over the three weeks of laboratory classes you will undertake a range of forensic chemical anlayses and record your contemporaneous notes in your laboratory book. **Learning Outcomes:** 2.1, 3.2, 3.3
23 Aug - 29 Aug	**Physical Evidence - Explosives**: Weekly 2-hour lectures will cover the nature of explosives and the forensic analysis of debris from the scenes of explosions. **Learning Outcomes:** 1.1, 1.2, 2.1, 3.3	**Physical Evidence Tutorials**: A weekly 2-hour tutorial will allow you a chance to discuss topics raised in lectures, to look at case examples and analyse the data from forensic chemistry analyses. Questions will be set and you are expected to come with answers prepared. These questions will provide you with excellent examples of the types of questions found in your EoT exam. Your participation is essential! **Learning Outcomes:** 1.1, 1.2, 2.1, 2.2, 3.1, 3.2, 3.3	**Physical Evidence Laboratory** (Laboratory): You will undertake three laboratory classes to examine items relating to a fictitious crime scene. Over the three weeks of laboratory classes you will undertake a range of forensic chemical anlayses and record your contemporaneous notes in your laboratory book. **Learning Outcomes:** 2.1, 3.2, 3.3

Date	Lecture	Tutorial	Other Activities
30 Aug - 5 Sep	**Physical Evidence - Explosives**: Weekly 2-hour lectures will cover the nature of explosives and the forensic analysis of debris from the scenes of explosions. **Learning Outcomes:** 1.1, 1.2, 2.1, 3.3	**Physical Evidence Tutorials**: A weekly 2-hour tutorial will allow you a chance to discuss topics raised in lectures, to look at case examples and analyse the data from forensic chemistry analyses. Questions will be set and you are expected to come with answers prepared. These questions will provide you with excellent examples of the types of questions found in your EoT exam. Your participation is essential! **Learning Outcomes:** 1.1, 1.2, 2.1, 2.2, 3.1, 3.2, 3.3	
6 Sep - 12 Sep	**Physical Evidence - Glass and Paint**: These 2-hour lectures will cover the forensic analysis and interpretation of glass and paint evidence. **Learning Outcomes:** 1.1, 1.2, 2.1, 3.3	**Physical Evidence Tutorials**: A weekly 2-hour tutorial will allow you a chance to discuss topics raised in lectures, to look at case examples and analyse the data from forensic chemistry analyses. Questions will be set and you are expected to come with answers prepared. These questions will provide you with excellent examples of the types of questions found in your EoT exam. Your participation is essential! **Learning Outcomes:** 1.1, 1.2, 2.1, 2.2, 3.1, 3.2, 3.3	
13 Sep - 19 Sep	**Physical Evidence - Glass and Paint**: These 2-hour lectures will cover the forensic analysis and interpretation of glass and paint evidence. **Learning Outcomes:** 1.1, 1.2, 2.1, 3.3	**Physical Evidence Tutorials**: A weekly 2-hour tutorial will allow you a chance to discuss topics raised in lectures, to look at case examples and analyse the data from forensic chemistry analyses. Questions will be set and you are expected to come with answers prepared. These questions will provide you with excellent examples of the types of questions found in your EoT exam. Your participation is essential! **Learning Outcomes:** 1.1, 1.2, 2.1, 2.2, 3.1, 3.2, 3.3	
20 Sep - 26 Sep	**Physical Evidence - Marks and Impressions**: These 2-hour lectures will discuss shoeprint and toolmark impression evidence; collection from suspected crime scenes, classification of marks, and the analysis and presentation of these evidence types in court. **Learning Outcomes:** 1.1, 1.2, 2.1, 2.2, 3.2, 3.3	**Physical Evidence Tutorials**: A weekly 2-hour tutorial will allow you a chance to discuss topics raised in lectures, to look at case examples and analyse the data from forensic chemistry analyses. Questions will be set and you are expected to come with answers prepared. These questions will provide you with excellent examples of the types of questions found in your EoT exam. Your participation is essential! **Learning Outcomes:** 1.1, 1.2, 2.1, 2.2, 3.1, 3.2, 3.3	

Date	Lecture	Tutorial	Other Activities
27 Sep - 3 Oct	**Physical Evidence - Marks and Impressions**: These 2-hour lectures will discuss shoeprint and toolmark impression evidence; collection from suspected crime scenes, classification of marks, and the analysis and presentation of these evidence types in court. **Learning Outcomes:** 1.1, 1.2, 2.1, 2.2, 3.2, 3.3	**Physical Evidence Tutorials**: A weekly 2-hour tutorial will allow you a chance to discuss topics raised in lectures, to look at case examples and analyse the data from forensic chemistry analyses. Questions will be set and you are expected to come with answers prepared. These questions will provide you with excellent examples of the types of questions found in your EoT exam. Your participation is essential! **Learning Outcomes:** 1.1, 1.2, 2.1, 2.2, 3.1, 3.2, 3.3	
4 Oct - 10 Oct	**Physical Evidence - Fingermarks**: These 2-hour lectures will discuss the identification, collection and interpretation of fingerprint evidence. **Learning Outcomes:** 1.1, 1.2, 2.1, 2.2, 3.2, 3.3	**Physical Evidence Tutorials**: A weekly 2-hour tutorial will allow you a chance to discuss topics raised in lectures, to look at case examples and analyse the data from forensic chemistry analyses. Questions will be set and you are expected to come with answers prepared. These questions will provide you with excellent examples of the types of questions found in your EoT exam. Your participation is essential! **Learning Outcomes:** 1.1, 1.2, 2.1, 2.2, 3.1, 3.2, 3.3	
11 Oct - 17 Oct	**Physical Evidence - Fingermarks**: These 2-hour lectures will discuss the identification, collection and interpretation of fingerprint evidence. **Learning Outcomes:** 1.1, 1.2, 2.1, 2.2, 3.2, 3.3	**Physical Evidence Tutorials**: A weekly 2-hour tutorial will allow you a chance to discuss topics raised in lectures, to look at case examples and analyse the data from forensic chemistry analyses. Questions will be set and you are expected to come with answers prepared. These questions will provide you with excellent examples of the types of questions found in your EoT exam. Your participation is essential! **Learning Outcomes:** 1.1, 1.2, 2.1, 2.2, 3.1, 3.2, 3.3	

4.2 Other Teaching and Learning Activities Information

This course will be presented as a series of lectures and tutorials. The purpose of the lectures is to provide the learning framework and primary source of content material for you through presentation of relevant forensic chemistry concepts and techniques. The purpose of the tutorials is to review and discuss the material presented in lectures; practice applied aspects of physical evidence interpretation, and prepare statements of witness for court.

Contact Summary
Attendance at lectures and tutorials in this course prepares you for employment by allowing you to form a solid basis for professional practice. Elements and content in this course provide the necessary framework and practical application for your learning in subsequent forensic courses in the forensic science program.

Public Holidays

If a lecture or tutorial class is scheduled on a public holiday (or is cancelled for any unexpected reason), this class will normally not be repeated