Nanyang Technological University
Division of Chemistry and Biological Chemistry

Academic Year	2019/20	**Semester**	1
Course Coordinator	Roderick Bates		
Course Code	CM8022		
Course Title	Forensic Science		
Pre-requisites	CM8012 Introduction to Forensic Science		
Mutually Exclusive	CM8002 Forensic Science		
No of AUs	1		
Contact Hours	face to face lectures 11 hours mid-term assessments 2 hours		
Proposal Date	22 October 2018		

Course Aims

The objective of the course is to show how basic science can be applied to the solution of criminal cases. Students will understand the basic chemistry, physics and biology behind forensic science and see how this knowledge can be applied. The course is also intended to show how forensic science fits into the legal system alongside other forms of police work. The course will show what forensic science can do, but also what is beyond its scope i.e. to demonstrate the limits of forensic science.

Intended Learning Outcomes (ILO)

By the end of this course, you (as a student) would be able to:

1. to combine some or all of the learning outcomes 1 to 10 of CM8002 in the analysis of a given crime scene

Course Content

Case studies: discussion of a range of cases that illustrate important concepts or failings, or are landmarks in the subject.
The following topics will (subject to availability) be taught by guest lecturers: physical evidence, document examination, DNA, narcotics, the presentation of evidence in court and the role of the Singapore Police Force.

Assessment (includes both continuous and summative assessment)

Component	Course LO Tested	Related Programme LO or Graduate Attributes	Weighting	Team/Individual	Assessment Rubrics
mid-term 1	1-10	competence and creativity	20	individual	see appendix 1
mid-term 2	1-10		20	individual	
final exam	all		60	individual	
Total			100%		

Formative feedback

You will be given feedback in three ways:
1. By response to postings on the course discussion board.
2. Through the marking of the mid-term.

3. General feedback will be provided to the students following the final exam.

Learning and Teaching approach

Approach	How does this approach support students in achieving the learning outcomes?
Face 2 face lectures	The bulk of the content will already have been delivered online in CM8012 and students will still have access to this content online for review purposes. For CM8022, face to face lectures will be employed for guest lectures to give the opportunity for students to interact directly with the lecturers, and for the finally summary and review lecture.

Reading and References

Criminalistics, Richard Saferstein (Pearson) **ISBN-13:** 978-0133458824

Course Policies and Student Responsibilities

(1) General

You are expected to complete all online activities in good time.

(2) Absenteeism

If you miss a lecture, you are expected to make up for the lost learning activities. If you miss the mid-term exam with approval, you will either be offered a make up exam or grading based upon the final.

Academic Integrity

Good academic work depends on honesty and ethical behaviour. The quality of your work as a student relies on adhering to the principles of academic integrity and to the NTU Honour Code, a set of values shared by the whole university community. Truth, Trust and Justice are at the core of NTU's shared values.

As a student, it is important that you recognize your responsibilities in understanding and applying the principles of academic integrity in all the work you do at NTU. Not knowing what is involved in maintaining academic integrity does not excuse academic dishonesty. You need to actively equip yourself with strategies to avoid all forms of academic dishonesty, including plagiarism, academic fraud, collusion and cheating. If you are uncertain of the definitions of any of these terms, you should go to the academic integrity website for more information. Consult your instructor(s) if you need any clarification about the requirements of academic integrity in the course.

Course Instructors

Instructor	Office Location	Phone	Email
Roderick Bates	CBC04-08	63168907	roderick@ntu.edu.sg

Planned Weekly Schedule

Week	Topic	Course LO	Readings/ Activities
1	see note below		
2			
3			
4			
5			
6			
7			
8			
9	mid-term 1	1	assessment
10	guest lectures	1	lecture
11	guest lectures	1	lecture
12	guest lectures	1	lecture
	mid-term 2	1	assessment
13	Case Studies and Review	1	lecture

The above schedule is for illustrative purposes and is subject to the exigencies of the calendar. This course is co-taught with CM8002. During unassigned weeks, the students will have access to online content from CM8002 for review purposes.

Appendix 1: Assessment Criteria for all components

mid-term

Standards		
Fail standard (0-4 marks)	**Pass standard (5-7 marks)**	**High standard (8-10 marks)**
Answers to the questions are mostly incorrect.	Answers to the questions are mostly correct.	Answers to the questions are almost always correct.

final exam – MCQ questions

Standards		
Fail standard (0-4 marks)	**Pass standard (5-7 marks)**	**High standard (8-10 marks)**
Answers to the questions are mostly incorrect.	Answers to the questions are mostly correct.	Answers to the questions are almost always correct.

final exam – short answer questions

Standards		
Fail standard (0-4 marks)	**Pass standard (5-7 marks)**	**High standard (8-10 marks)**
Answers demonstrate the ability to repeat factual knowledge but not to apply it outside of the lecture context. Answers do not have a strong logical underpinning or maybe attempts to answer both ways at the same time.	Answers to the standard level question are correct and show the ability to apply concepts from the course, but a high level of critical thinking is absent. Answers are reasonably logical, but with gaps.	Answers to all questions show a high and consistent level of critical analysis of the information presented and creative soklutions to the problems. Answers are highly logical and demonstrate strong reasoning. Answers are concise and to the point.

CBC Programme Learning Outcome

The Division of Chemistry and Biological Chemistry (CBC) offers an undergraduate degree major in Chemistry that satisfies the American Chemical Society (ACS) curricular guidelines and equips students with knowledge relevant to the industry. Graduates of the Division of Chemistry and Biological Chemistry should have the following key attributes:

1. Competence

Graduates should be well-versed in the foundational and advanced concepts of chemical science, be able to evaluate chemistry-related information critically and independently, and be able to use complex reasoning to solve emergent chemical problems.

2. Creativity

Graduates should be able to synthesize and integrate multiple ideas across the curriculum, and propose innovative solutions to emergent chemistry-related problems based on their training in chemistry.

3. Communication

Graduates should be able to demonstrate clarity of thought, independent thinking, and sound scientific analysis and reasoning through written and oral reports to audiences with varying technical backgrounds. They should also be able to effectively engage other professional chemists in collaborative endeavours.

4. Character

Graduates should be able to act in responsible ways and uphold the high ethical standards that the society expects of professional chemists.

5. Civic-mindedness

Graduates should be aware of the impact of chemistry on society, and how chemistry can be applied to benefit mankind. They should also be aware of and uphold the best chemical safety