香港城市大學
City University of Hong Kong

SYL

Course Syllabus

offered by Department of Chemistry
with effect from Semester A 2020/21

This form is for the completion by the *Course Leader*. The information provided on this form is the official record of the course. It will be used for the City University's database, various City University publications (including websites) and documentation for students and others as required.

Please refer to the Explanatory Notes on the various items of information required.

Prepared / Last Updated by:

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Part I Course Overview

Course Title:	Science Versus Crime
Course Code:	CHEM2809
Course Duration:	1 semester
Credit Units:	3 credits
Level:	B2
Proposed Area: *(for GE courses only)*	☐ Arts and Humanities ☐ Study of Societies, Social and Business Organisations ☐ Science and Technology
Medium of Instruction:	English
Medium of Assessment:	English
Prerequisites: *(Course Code and Title)*	Nil
Precursors: *(Course Code and Title)*	Nil
Equivalent Courses: *(Course Code and Title)*	GE2334 Science Versus Crime BCH2809 Science Versus Crime
Exclusive Courses: *(Course Code and Title)*	CHEM2808/BCH2808 Forensics and Modern Society

Part II Course Details

1. Abstract

(A 150-word description about the course)

This course aims to let students to have some basic understanding in how science and technology is applied to aid fighting crimes. Besides the general scientific principles, this course will highlight (i) the importance of logical and critical thinking, (ii) how existing knowledge can be applied to new challenges, and (iii) how honesty and ethical behaviour are necessary throughout the processes of criminal investigation.

Teaching is mainly done via formal lectures (2 hr every week). This is supplemented by invited guest lectures and interactive tutorials. These tutorials are arranged to allow students to learn, and discover by themselves, specific skills in crime scene investigation caseworks, and to put them in practical uses.

2. Course Intended Learning Outcomes (CILOs)

(CILOs state what the student is expected to be able to do at the end of the course according to a given standard of performance.)

No.	CILOs[#]	Weighting* (if applicable)	Discovery-enriched curriculum related learning outcomes (please tick where appropriate)		
			A1	*A2*	*A3*
1.	Describe the concepts of the various disciplines of forensic science.	25%	✓		
2.	Describe the various forensic techniques in terms of identification, individualization and reconstruction and recommend or advise on the most appropriate selection for an investigation.	25%	✓	✓	
3.	Describe basic techniques in crime scene investigations. Explain the importance of logical thinking and ability to apply this to different forensic scenarios.	50%	✓	✓	✓
		100%			

** If weighting is assigned to CILOs, they should add up to 100%.*

[#] Please specify the alignment of CILOs to the Gateway Education Programme Intended Learning outcomes (PILOs) in Section A of Annex.

A1: Attitude
Develop an attitude of discovery/innovation/creativity, as demonstrated by students possessing a strong sense of curiosity, asking questions actively, challenging assumptions or engaging in inquiry together with teachers.

A2: Ability
Develop the ability/skill needed to discover/innovate/create, as demonstrated by students possessing critical thinking skills to assess ideas, acquiring research skills, synthesizing knowledge across disciplines or applying academic knowledge to self-life problems.

A3: *Accomplishments*
Demonstrate accomplishment of discovery/innovation/creativity through producing /constructing creative works/new artefacts, effective solutions to real-life problems or new processes.

3. Teaching and Learning Activities (TLAs)

(TLAs designed to facilitate students' achievement of the CILOs.)

TLA	Brief Description	CILO No.			Hours/week (if applicable)
		1	2	3	
Lectures	Formal lectures (including guest lectures introducing the various aspects of crime scene investigations by guest speakers)	✓	✓	✓	2 hrs
Mock crime scene investigation and CSI report writing	Mock crime scene walkthrough		✓	✓	5 hrs (throughout the course)
Mock crime scene investigations oral presentation	Oral presentation of observation in mock crime scene walkthrough and respond to queries from instructors	✓	✓	✓	1 hr (throughout the course)
Tutorials	Tutorials on various practical techniques for crime scene investigations		✓	✓	1 hr
Multimedia teaching and learning	Multimedia teaching and learning (using materials from TV programmes, newspaper and the internet) of relevant topics in crime scene investigations	✓	✓	✓	N.A.

4. Assessment Tasks/Activities (ATs)

(ATs are designed to assess how well the students achieve the CILOs.)

Assessment Tasks/Activities	CILO No.			Weighting*	Remarks
	1	2	3		
Continuous Assessment: 70%					
Crime scene investigation walkthrough and the preparation of written CSI reports		✓	✓	30%	CSI walkthrough will be conducted in the tutorial session.
Crime scene investigation oral presentation	✓	✓	✓	20%	Oral presentation will be conducted in the tutorial session.
Essay writing on selected topics in crime scene investigations (CSI)	✓	✓	✓	10%	Each essay should be shorter than 1000 words.
Short quiz	✓	✓	✓	10%	Multiple choice and fill-in-the-blank quiz.
Examination: 30% (duration: 2 hours)					
** The weightings should add up to 100%.*				100%	

Starting from Semester A, 2015-16, students must satisfy the following minimum passing requirement for courses offered by CHEM:

"A minimum of 40% in both coursework and examination components."

5. Assessment Rubrics

(Grading of student achievements is based on student performance in assessment tasks/activities with the following rubrics.)

Assessment Task	Criterion	Excellent (A+, A, A-)	Good (B+, B, B-)	Fair (C+, C, C-)	Marginal (D)	Failure (F)
1. Crime scene investigation walkthrough and the preparation of written CSI reports	Capability in applying proper crime scene investigation (CIS) procedures and techniques to investigate a mock crime scene and respond to queries in a professional manner.	High	Significant	Moderate	Basic	Below marginal levels
2. Crime scene investigation oral presentation	Capability in delivering a written report on observations in CSI walkthrough.	High	Significant	Moderate	Basic	Below marginal levels
3. Short-essay writing	Demonstration of understanding of a variety of topics in modern crime scene investigations.	High	Significant	Moderate	Basic	Below marginal levels
4. Short quiz	Demonstration of understanding the principles and practice of various topics of forensic and crime scene investigations.	High	Significant	Moderate	Basic	Below marginal levels
5. Examination	Demonstration of understanding the principles and practice of various topics of forensic and crime scene investigations.	High	Significant	Moderate	Basic	Below marginal levels

Part III Other Information (more details can be provided separately in the teaching plan)

1. Keyword Syllabus

(An indication of the key topics of the course.)

Forensics; Crime scene; *CSI*, Chain-of-custody; Contamination; Pollution; Environment; Explosives; Counter-terrorism; Firearms; Fingerprint; Counterfeit; Narcotics; Dangerous Drugs; Documents; Accuracy; Ethics; Honesty; Dishonesty; Criminal; Identification; Identity; Individualization; Analysis; DNA; Presumptive tests; Matching.

2. Reading List

2.1 Compulsory Readings

(Compulsory readings can include books, book chapters, or journal/magazine articles. There are also collections of e-books, e-journals available from the CityU Library.)

1.	Forensic Science – An Introduction to Scientific and Investigative Techniques: Stuart H. James and Jon J. Norby (2014 – 4th edition), Taylor and Francis.

2.2 Additional Readings

(Additional references for students to learn to expand their knowledge about the subject.)

1.	Criminalistics – An Introduction to Forensic Science: Richard Saferstein (2017 – 12th edition), Pearson.
2.	FORENSICnetBase: ~150 entire books covering many different forensic sub-fields, available online. City University is the only university in Hong Kong with this excellent facility that is continually updated as new books are added to the scheme.

Annex
(for GE courses only)

A. Please specify the Gateway Education Programme Intended Learning Outcomes (PILOs) that the course is aligned to and relate them to the CILOs stated in Part II, Section 2 of this form:

GE PILO	**Please indicate which CILO(s) is/are related to this PILO, if any** ***(can be more than one CILOs in each PILO)***
PILO 1: Demonstrate the capacity for self-directed learning	
PILO 2: Explain the basic methodologies and techniques of inquiry of the arts and humanities, social sciences, business, and science and technology	
PILO 3: Demonstrate critical thinking skills	
PILO 4: Interpret information and numerical data	
PILO 5: Produce structured, well-organised and fluent text	
PILO 6: Demonstrate effective oral communication skills	
PILO 7: Demonstrate an ability to work effectively in a team	
PILO 8: Recognise important characteristics of their own culture(s) and at least one other culture, and their impact on global issues	
PILO 9: Value ethical and socially responsible actions	
PILO 10: Demonstrate the attitude and/or ability to accomplish discovery and/or innovation	

GE course leaders should cover the mandatory PILOs for the GE area (Area 1: Arts and Humanities; Area 2: Study of Societies, Social and Business Organisations; Area 3: Science and Technology) for which they have classified their course; for quality assurance purposes, they are advised to carefully consider if it is beneficial to claim any coverage of additional PILOs. General advice would be to restrict PILOs to only the essential ones. (Please refer to the curricular mapping of GE programme: http://www.cityu.edu.hk/edge/ge/faculty/curricular_mapping.htm.)

B. Please select an assessment task for collecting evidence of student achievement for quality assurance purposes. Please retain at least one sample of student achievement across a period of three years.

Selected Assessment Task