

LSC Use Only Proposal No.

LSC Action Date:

AP-3/22/12

UWUCC Use Only

Proposal No:

11-1250

UWUCC Action Date:

AP-4/3/12

Senate Action Date:

AP-4/17/12

Curriculum Proposal

University Wide Undergraduate Curriculum Committee

Contact Person(s)

John Weir

E-mail Address

ess.woolco@uw.edu

CHEM 105: The Forensic Chemistry of CSI
Summary of Changes

1. Revised the course objectives to include EUSLO's
2. Revised the detail course outline by removing the topics: Fingerprints, Questioned Documents and Firearms and then expanding the time spent on the remaining topics. The ~~5 total hours that were assigned to these topics represent 14% of the course material in~~

the original syllabus.

3. Revised the point values for the Evaluation items to parallel those used currently in the course.
4. Revised the Required test to cite the new edition (2nd) of the textbook.
5. Revised the Supplementary text to one that is web-based so that only the essential chapters can be downloaded as PDF files.
6. ~~Revised the Bibliography to cite more recent sources~~

CHEM 105: The Forensic Chemistry of CSI Syllabus of Record

I. Catalog Description

The Forensic Chemistry of CSI

Topics will include the forensic analysis of drugs, fibers, glass, arson, and other types of physical

evidence. Chemical concepts, on the level of an introductory chemistry course and their applications to forensic science will also be explored. Other topics will include how forensic

compared to how it works in the real world. They will then examine how this comparison is linked to the "CSI Effect". The CSI effect is the belief that watching TV shows such as CSI raises the expectations that jurors and the public have about the value and impact of forensic evidence on criminal trials and investigations.

III Detailed Course Outline (1 hour = 50 minutes course "CSI Effect")

1. Introduction to Forensic Science and Investigating CSI (1.5 hours)

- a. Forensic Science: fact and fiction
- b. The CSI Effect

2. Investigating the Crime Scene (3.0 hours)

- a. Securing & documenting the crime scene
- b. Collection, preservation, inventory and transportation of evidence

- c. Chain of custody and legal dimensions of evidence

3. Investigating and Processing Physical Evidence (4.5 hours)

- a. The modern crime lab and functions of a forensic scientist
- b. Characteristics of physical evidence

- c. Determining the origin and cause of a fire
- d. Indicators of arson and collection of evidence

12. Drugs of Abuse (3.75 hours)

- a. History of drug regulation and drug dependence
- b. Narcotics, hallucinogens, depressants, stimulants, inhalants, club drugs and steroids
- c. Identification of drugs using presumptive and confirmatory tests
- d. Poisons

13. Exam #1 (1.25 hours)

14. Course Wrap Up (1.25 hours)

15. Final Exam (2 hours)

IV. Evaluation Methods:

| | |
|--|------------|
| Exams | 300 points |
| Assigned exercises (problem strategies) | 60 points |
| Report on a fiction book, video or computer game | 70 points |
| Practical activities (workshops, demonstrations, etc.) | 60 points |

The attendance policy for this course will be consistent with the IUP Catalog.

Attendance Policy in the IUP Catalog.

VII. Required & Supplementary Textbook(s):

1. **Required Text:** *Criminalistics: Forensic Science, Crime and Terrorism, Second Edition* James E. Girard, Jones & Bartlett, Sudbury, MA (2011). This is a chemistry oriented non-science majors textbook that covers a wide variety of forensic science topics.

2. **Supplementary Text:** *An Introduction to Chemistry*, M. Bishop, (Atoms First Edition) (Chira) Publishing Company: <http://preparatorychemistry.com/>. This is a self-published

web-based text. which is used to provide additional material on chemistry topics such as

11. *Investigating Chemistry*, Matthew Johl, 2nd Edition. W. H. Freeman: New York (2009)

12. *Media and Criminal Justice: The CSI Effect*, Dennis J. Stevens, Jones and Bartlett, New York (2011)

13. *CSI: NY Virtual Experience in Second Life*, CBS Interactive Inc. (2008-2010)

14. *Sherlock Holmes: The Complete Novels and Stories*, by Sir Arthur Conan Doyle, Bantam Classics (1986)

15. *The Bone Collector* by Jeffrey Deaver, Coronet Books (1997)

16. *The CSI: NY Virtual Experience in Second Life*,
http://www.cbs.com/primetime/csi_ny/second_life

On a separate sheet of paper, please answer these questions. (Do not include this sheet or copies of the questions in your proposal; submit only the answers.)

- A. This is not a multi-section, multi-instructor course.
- B. The incorporation of women and minorities in the course will largely be through the forensic case studies used throughout the course. In the text *Criminalistics: Forensic Science, Crime and Terrorism* the following case studies in the sections entitled *On the Crime Scene* focus on minorities and women as perpetrators or victims of crime:

Jon Benet Ramsey (Chapter 1), O.J. Simpson (Chapter 1), Enrique Camarena Salazar (Chapter 2), Rebecca O'Connell (Chapter 3), Kristen Lea Harrison (Chapter 4), Emilita Reeves (Chapter 8), Joann Curley (Chapter 9), Earl Washington, Jr. (Chapter 14).

Section A: Details of the Course

A1 How does this course fit into the programs of the department? For what students is the course designed? (majors, students in other majors, liberal studies). Explain why this content cannot be incorporated into an existing course.

This course is intended for students in any major who are interested in Chemistry as

it applies to forensic science. While the chemistry concepts in this course are taught in other introductory chemistry courses, their specific application to forensic science is unique. There is no other Liberal Studies non-laboratory chemistry course in the Chemistry department. This course cannot be used to meet the requirements of a CHEM major or minor.

A2 Does this course require changes in the content of existing courses or requirements for a

2. Westminister College, Sci 150, Helen Boylan, *Introduction to Forensic Science*
3. Bloomsburg University of PA, CHEM 52.105, Michael Pugh, *Introduction to Forensic Science*

A7 Is the content, or are the skills, of the proposed course recommended or required by a professional society, accrediting authority, law or other external agency? If so, please provide documentation.

No, the content of this course is not required by any external agency, professional

society or accrediting authority.

Section B: Interdisciplinary Implications

B1 Will this course be taught by instructors from more than one department? If so, explain the teaching plan, its rationale, and how the team will adhere to the college's standard

No, this course will have only one instructor

No additional resources are needed to teach this course.

C3. Are any of the resources for this course funded by a grant? If so, what organization?

CHEM 105: The Forensic Chemistry of CSI

Each student will select a case study and analyze it using the following criteria:

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- The paper is word-processed and either printed on 8 1/2 x 11 inch paper or sent as an MS Word document. There should be no spelling or grammatical errors, the paper should