

CHE 349
Professional Issues in Forensic Science
(3 credits)

Cedar Crest College
Department of Chemical and Physical
Sciences
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M8

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Course Syllabus

Course Description:

Students will be introduced to issues that impact the daily professional life of a forensic scientist. One of the unique aspects of being a forensic scientist is that the scientific work performed has legal requirements and implications. Legal considerations are important in the gathering and collection of physical evidence at a crime scene, in the testing of physical evidence, the introduction of testing results and interpretation in legal proceedings, and the actual courtroom testimony of the expert. Like science and technology, the legal rules that govern these tasks has evolved and changed with time. Although the student will be introduced to various aspects of the law-science interface, this portion of the course will primarily deal with the history of U.S. Supreme Court decisions, lower court decisions, and legislative statute that have impacted the admissibility of forensic and scientific testing in courtroom proceedings. The admissibility of particular types of scientific evidence determined by the interpretation of these legal rules will also be discussed.

The student will also be introduced to the various tiers of the U.S. legal system and the procedures involved in courtroom testimony. Students will learn the process of voir dire, direct examination, and cross-examination of an expert. Each student will partake in a moot court where they will testify as a forensic expert in the exercise.

The course will also focus on the societal role a forensic scientist plays. Forensic science has grown to assume a more pivotal role in the criminal justice system in recent years, causing the ethics and qualifications of forensic scientists and laboratories to come under greater scrutiny. As a result, the profession itself has developed quality standards for both the individual forensic scientist and professional laboratories to ensure that the societal role is not compromised. In this regard, the student will be introduced to such facets as quality assurance, laboratory accreditation, and professional certification.

The course will also focus on professional standards of ethical behavior for forensic scientists. Ethical issues involving professional practice and technical competence will be discussed. The role that ethics plays in the different concepts of legal v. scientific proof and the difference in roles and obligations between a prosecutorial and defense expert will be examined. In addition, the resolution of ethical dilemmas often faced by forensic practitioner will also be incorporated in the course.

- Time and Classroom:** 1:00-2:15, Tuesday and Thursday
- Required Texts:** Forensic Evidence: Science and the Criminal Law, Second Edition, Terrence Kiely
- Ethics in Forensic Science: Professional Standards for the Practice of Criminalistics, Peter D. Barnett
- Required Reading:** Criminal Procedure, Fourth Edition, Charles Whitebread and Christopher Slobogin, pp. 104-179.
- In addition several articles and cases will be required reading (see syllabus)

Course Objectives:

1. To familiarize the student with the structure of the United States Court System.
2. To introduce the student to the history of legal rules governing the collection of physical evidence and courtroom admissibility of scientific testing.
3. To introduce the student to expert courtroom testimony.
4. To familiarize the student with quality standards governing professional practice for both the forensic scientist and forensic science laboratory.
5. To introduce the student to professional codes of ethics in the forensic sciences.
6. To familiarize the student with ethical dilemmas commonly encountered by forensic scientists.

Course Outcomes:

1. The student will learn the structure of the United States Court System.
2. The student will learn the history of legal rules governing the collection of physical evidence and courtroom admissibility of scientific testing.
3. The student will be able to apply legal rules for the courtroom admissibility for particular types of physical evidence.
4. The student will learn the procedure for expert testimony in United States trial courts.
5. The student will become familiar with proper expert courtroom testimony.

6. The student will be familiar with quality standards for professional practice of both the forensic scientist and forensic science laboratory.

7. The student will become familiar with professional codes of ethics in the forensic sciences.

8. The student will become familiar with common ethical dilemmas commonly encountered by forensic scientists and ways to resolve them.

Course Assessment

Progress in this course will be monitored by the student's ability to participate in classroom discussions and on the ability to answer questions posed by the instructor during class. Twenty percent of the student's final grade will be based on class participation. In addition, each student will be graded on a class presentation and a type written paper on a court decision or paper affecting the scientific admissibility of a particular type of evidence. Students will also be graded on expert testimony given in a moot court exercise.

There is only one examination in this course. At the end of the semester, students will schedule a time with the instructor for an oral examination. The oral exam will cover all the material in the class and will test a student's knowledge of the subject matter as well as gauge a student's ability to apply that knowledge to practical situations.

Grading

Your final grade will be determined as follows:

Final Examination	30%
Class Presentation	20%
Written Paper	10%
Moot Court	20%
Class Participation	20%

Letter grades will be assigned as follows:

91-100%	A
89-90%	A-
87-88%	B+
81-86%	B
79-80%	B-
77-78%	C+
71-76%	C
69-70%	C-
60-68	D
<59%	F

Lecture Outline

Topic

Assigned Reading

January 19 – February 12

- I. *Introduction to Course*
 - II. *Science and the Legal Process*
United States Court System
Role of the Forensic Scientist in
Criminal Justice System
Defining Evidence
 - III. *Legal Terms*
 - IV. *Historical Development of Forensic
Science Laboratory Systems*
Criminalistics as a Profession
Laboratory Accreditation
Individual Certification
Quality Assurance
 - V. *Search and Seizure of Crime Scene
Evidence*
 - VI. *The Forensic Scientist as an Expert*
Report Writing
Forensic Expert Testimony
Pretrial Admissibility Hearings
Voir Dire
Direct and Cross Examination
 - VII. *History of the Scientific Admissibility
of Evidence in U.S. Courts*
- Kiely, Chapter 1 and 2
Evet, Science and Justice 1996
36(2): 118-122
- DeForest, Science & Justice 1999;
39(3): 196-208
- Whitebread, pp. 104-146
- Federal Rules of Evidence
Frye v. US, 293 F. 1013 (1923)
Daubert v. Merrell Dow
Pharmaceuticals,
509 U.S. 579 (1993)
Barnett, Appendix 8
General Electric v. Joiner,
522 U.S. 136 (1997)
Barnett, Appendix 9
Kumho Tire v. Carmichael,
526 U.S. 137 (1999)

Topic

Assigned Reading

February 17, 19 – No class, AAFS meeting

VIII. Student Presentations

February 24

Horizontal Gaze Nystagmus

Student Presentation #1

**State v. Doriguzzi
760 A.2d 336**

Hair Analysis

Student Presentation #2

Kiely, Chapter 3

**McGrew v. State
673 N.E.2d 787**

Student Presentation #3

**Williamson v. Reynolds
904 F. Supp. 1529**

February 26

Fiber Analysis

Student Presentation #4

Kiely, Chapter 4

**Williams v. State
312 S.E.2d 40**

Footwear, Tire Impressions, Bitemarks

Student Presentation #5

Kiely, Chapter 7

**People v. Campbell
586 N.E.2d 1261**

Student Presentation #6

**State v. Milone
356 N.E. 2d 1350**

March 3

Fingerprints and other Imprints

Student Presentation #7

Kiely, Chapter 8

**State v. Kunze
988 P.2d 977**

Student Presentation #8

**United States v. Mitchell
145 F.3d 572**

<u>Topic</u>	<u>Assigned Reading</u>
<i>March 3 (cont)</i>	
Bloodstain Pattern Analysis	Kiely, Chapter 9
Student Presentation #9	Commonwealth v. Powell 877 N.E. 2d 589
<i>March 5</i>	
Ballistics and Toolmarks	Kiely, Chapter 5
Student Presentation #10	United States v. Santiago 199 F. Supp. 2d 101
Student Presentation #11	Ramirez v. State 810 So. 2d 836
Student Presentation #12	United States v. Davis 103 F.3d 660
<i>March 17</i>	
Questioned Documents	
Student Presentation #13	United States v. Prime 220 F. Supp. 2d 1203
Student Presentation #14	United States v. Lewis 220 F. Supp. 2d 548
Crime Scene Analysis	
Student Presentation #15	State v. Stevens 78 S.W. 3d 817
<i>March 19</i>	
DNA Analysis	Kiely, Chapter 10
Student Presentation #16	People v. Castro 545 N.Y.S.2d 985
Student Presentation #17	State v. Ware 1999 Tenn. Crim. App. LEXIS 370

<u>Topic</u>	<u>Assigned Reading</u>
<i>March 24</i>	
Anthropology	Kiely, Chapter 11
Student Presentation #18	United States v. Dorsey 45 F.3d 809
Student Presentation #19	People v. Habel 527 N.E. 2d 1367
<i>March 26 – April 9</i>	
Moot court laboratory reports due March 26.	
IX. <i>Ethics in Forensic Science</i> Disclosure and Discovery Scientific Proof v. Legal Proof Developing Codes of Ethics Obligations of Expert Witnesses	Barnett, Chapters 1-2 Federal Rules of Criminal Procedure, Rule 16 Jencks Act, 18 U.S.C. Sec 3500 Brady v. Maryland 377 U.S. 83 (1963)
X. <i>Professional Codes of Ethics</i> <i>Application of Code of Ethics</i>	Barnett, Chapters 3-4, Appendices 1-7
XI. <i>Ethical Issues Involving Professional Practice</i>	Barnett, Chapter 5
XII. <i>Ethical Issues Involving Technical Competence</i>	Barnett, Chapter 6
<i>April 14- April 30</i>	
XIII. Moot Courts	
<i>May 1-8</i>	
XIV. Oral Final Examination	

Presentation

Each student will give a presentation on an assigned court decision that has affected (or can affect) the scientific admissibility of a particular type of forensic evidence. The following points **at a minimum** need to be discussed in your presentation.

1. A discussion of the role forensic evidence played in the case or can play in a forensic investigation. If you are dealing with a case, please begin by stating the facts of the case. The following questions should then be answered:
 - What type of forensic evidence was significant in the case? Students should provide foundation information on the type of forensic evidence.
 - What information can be typically gained using the type of evidence?
 - Why was the evidence important in this case?
 - What kind of testing was conducted?
 - What were the results and significance of the testing?
 - How did the testing influence the outcome of the case?
2. A discussion of scientific admissibility issues or other legal issues raised in the case. If applicable, what objections were made regarding the admissibility of the evidence? What did the court in the case or other courts rule regarding admissibility? What was the basis of the court's decision? Were other prior decisions cited (if not, you might consider examining the history of the type of evidence in US courts)? How did the court's ruling affect future court decisions regarding the legal issues raised in the case (some of the cases are a little old, it might be important to examine more recent cases on point and determine how the issues have evolved)? What is your opinion about the impact of the case or paper on future decisions?
3. An analysis of the court's decision or author(s) opinion will be offered using the criteria outlined in **both** Frye and Daubert for scientific admissibility. If the court doesn't give an analysis of each (it is unlikely a Frye state is going to provide a Daubert analysis), please provide one based on your own knowledge. In your opinion, did the court or author come to the correct conclusion?

The entire presentation should be **25 minutes (presentations below 20 minutes will receive a deduction)**. Creativity is encouraged. Feel free to add anything that may help the presentation be more informative.

Please limit your presentation to the scientific issues in the case.

The presenter will also submit a paper (no more than 3 typed pages, no less than 2) covering all three parts.

Guidelines for Projection of Paper Presentation

1. Dark background and light text give good contrast and show up well in a darkened room. Avoid color combinations such as red and blue, yellow and green, etc.
2. Times New Roman is the recommended font style.
3. Do not use a font below 24 pt.
4. Limit a frame to a single idea or point.
5. Do not crowd the frame. Limit the number of text lines per frame to a maximum of seven.
6. Use simple graphs and illustrations with a minimum of captions. Avoid using thin lines, dots, dashes, or other specialty lines unless they are very bold and black.
7. Do not read off slide.

Moot Court

On March 26, each student will be asked to submit to the instructor a laboratory report summarizing a forensic analysis. The analysis can be from a past laboratory exercise in another course or it can be simply “made-up”. The results from the exercise will be related to a fictitious case scenario to which the student will testify. After the report has been written and a date for the moot court agreed to, the student will meet with the instructor for a pretrial conference. The instructor will serve as the prosecutor in most cases and will prepare the student for direct examination. The judge and defense attorney for the exercise will be later determined. The exercise should take no longer than 25 minutes.

Community Standards for Academic Conduct

Academic integrity and ethics remain steadfast, withstanding technological change. Cedar Crest College academic standards therefore apply to all academic work, including, but not limited to, handwritten or computer-generated documents, video or audio recordings, and telecommunications.

As a student at Cedar Crest College, each student shall:

- Only submit work which is his/her own.
- Adhere to the rules of acknowledging outside sources, as defined by the instructor, never plagiarizing or misrepresenting intellectual property.
- Neither seek nor receive aid from another student, converse with one another when inappropriate, nor use materials not authorized by the instructor.
- Follow the instructions of the professor in any academic situation or environment, including taking of examinations, laboratory procedures, the preparation of papers, properly and respectfully using College facilities and resources, including library and computing resources to ensure that these resources may be effectively shared by all members of the College community.
- Abide by the Cedar Crest Computer Use Policy.
- If a student perceives a violation of the Academic Standards, he/she will go to their

instructor.

- If you are unable to resolve the problem with the instructor, you should go to the chair of the department. If you need further assistance after consultation with the instructor and the chair, you should see the Provost.

Classroom Protocol

Appropriate classroom behavior is defined and guided by complete protection for the rights of all students and faculty to a courteous, respectful classroom environment. That environment is free from distractions such as late arrivals (students will be deducted one point from each late arrival after the second time), early departures, inappropriate conversations and any other behaviors that might disrupt instruction and/or compromise students' access to the Cedar Crest College education.

Attendance in lecture is mandatory. It is understood that students may need to miss class due to illness or personal obligations. Students needing to be absent from class must contact the instructor prior to class. Students with valid reasons will not be penalized. In all cases, students will be responsible for all material covered in the missed class.

Unexcused absences are not permitted. For each unexcused absence, students will be deducted 1% from their final grade.

Honor Philosophy

The Cedar Crest College Honor Philosophy states that students should uphold community standards for academic and social behavior in order to preserve a learning environment dedicated to personal and academic excellence. Upholding community standards is a matter of personal integrity and honor. Individuals who accept the honor or membership in the Cedar Crest College community of scholars pledge to accept responsibility for their actions in all academic and social situations and for the effect their actions may have on other members of the College community.