

**JOHN JAY COLLEGE OF CRIMINAL JUSTICE
The City University of New York**

Forensic Science 108 Syllabus

City University of New York- John Jay College of Criminal Justice

524 West 59th Street, New York, NY, 10019

Forensic Science 108 Sections 09-12

Professor Christopher Kluge

Office: 03.62 NB Desk D

Office hours: By appointment

E-mail address: ckluge@jjay.cuny.edu or christopher.kluge@jjay.cuny.edu

Course description

This course provides the non-science major with an introduction to forensic science. The lecture portion of the course establishes a foundation for understanding many of the concepts and techniques on which forensic science is built, such as those associated with crimes scene processing, physical evidence, microscopy, fingerprints, firearms and DNA. The laboratory portion of the course provides an opportunity to learn “hands-on” by using common analytical techniques.

Learning Outcomes: Consist of Reasoning, Knowledge, Practical Skills, and Communication Skills

Reasoning:

- Determine appropriate conclusions based on scientific evidence. Be able propose a prediction of results and then test predictions.
- Students will be able to recognize that identifying specific unknown samples can be accomplished through the use of different scientific techniques and testing.
- Apply critical thinking skills in solving justice problems of a specific nature by discussing relevant court cases and the impact of science within.
- Discriminate between generally accepted science and science fiction.

Knowledge:

- Take a skeptic approach to general scientific information and legal decisions.
- Describe how data influences legal decisions and shapes methods of analysis.
- Gain an introduction to physical sciences necessary for forensic science.
- Students will learn aspects of general chemistry, analytical chemistry (chromatography), and biology (serology)

Practical Skills:

- Write scientific reports, and follow scientific procedures to obtain standardized replicable results.
- Identify unknown samples in double blind studies.
- Describe how science is used in the criminal justice system

Communication:

- Report on importance/impact, relevancy and accuracy of forensic science methods.
- Use scientific vocabulary in defending results and active discussions about science.

Course Requirements

- ❖ **Registration:** This course is restricted to students who have registered for FOS 108 Sections 09, 10, 11, and 12.
- ❖ **Schedule (You may only attend the section for which you have registered):**
 - Lecture: Sections 09, 10, 11 & 12 - 0800 to 0915hrs Mondays & Wednesdays
 - Laboratory: Section 09 - 0925 to 1040 hrs on Mondays & Wednesdays (Professor Boyll)
Section 10 - 0925 to 1040 hrs on Mondays & Wednesdays (Professor Gonzalez)
Section 11 - 0800 to 0915 hrs on Tuesday & Thursday (Professor Pritchard)
Section 12 - 0800 to 0915 hrs on Tuesday & Thursday (Professor Rodriguez)
- ❖ **Prerequisite:** Natural Science 107 is a prerequisite for this course. Unless you have fulfilled certain high school science requirements you will not be permitted to take this course without having taken the NSC 107 prerequisite.
- ❖ **Grading:** Your grade in the lecture portion of this course is worth 60% of your course grade and the laboratory section is worth 40% of your course grade. The lecture portion of your grade will be based upon your performance in lecture exams that will be given throughout the semester AND your attendance.
- ❖ **Attendance** is required for both the lecture and laboratory sections; a total of four or more unexcused absences will adversely affect your grade; lateness of more than fifteen minutes will be counted as an absence. Schedule your personal appointments outside of official class time. Attendance will be recorded on roll sheets which will be distributed during each class meeting; **STUDENTS ARE RESPONSIBLE FOR SIGNING THE ROLL SHEET AND WILL BE CONSIDERED ABSENT IF THEY FORGET TO DO SO.** Absences will only be excused when proper documentation of an emergency circumstance is provided (i.e., a doctor's note for illness).
- ❖ **Lecture Exams:** There are 4 lecture exams, three during the semester and one final. The final will be cumulative, but will mainly focus on the material not covered in the 3 semester exams. If you arrive more than 15 minutes after the exam has started; you cannot be guaranteed permission to take the exam. If you arrive after a student has handed in their exam, you will not be permitted to take that exam. You must bring your JJC ID Card in order to take each exam. **Bring a #2 pencil, an eraser and a pen to each exam. NO MAKE-UP EXAMS WILL BE GIVEN.** Students are required to take all four lecture exams. The lowest of the three semester exams will be dropped; the remaining three exam grades will be weighted as follow 30% semester exam I, 30% semester exam II and 40% final exam. During examinations, students may not use any extraneous reference materials (e.g. books, notes, papers), communicate with other students, or use electronic devices such as phones, pagers, or PDA's. Any student caught cheating will receive a zero for the exam, and be referred to the College's Academic Integrity Officer for further action.

- ❖ **Quizzes:** Quizzes may be given at any point during the semester and may be unannounced. Quizzes will be given during the first ten minutes of the lecture session. If you are late you will not be allowed to take the quiz. There are no make-up quizzes.
- ❖ **Laboratory Grade:** Your laboratory grade will be based on the laboratory notebook grades for each exercise, your performance in the lab practical/general unknown, one lab exam, and one enhanced lab report. The laboratory requirements will be discussed by your laboratory instructors. Due to logistical concerns, we cannot guarantee that a student will be permitted to make-up missed laboratory exercises.
- ❖ **Laboratory Safety:** Your safety in the laboratory depends heavily on following the lab rules. If you are engaging in unsafe practices you may be expelled from the class for the day and no make up for the lab will be offered. Repeated infractions will deleteriously affect your grade. **Laboratory goggles: Failure to possess and wear lab goggles is inexcusable. Goggles are mandatory for all lab sessions including recitations! The minimum penalty for not having or wearing your goggles is a zero for the lab exercise and dismissal from the period with a marked absence.** Students must provide their own scotch tape for use in the laboratory.
- ❖ **Tablets, cell phone usage:** Smart phones/cell phones and/or tablets should not be used in class. If you need to use them please leave the classroom.

Required Texts

Investigating Chemistry-Introductory Chemistry from a Forensic Science Perspective 3rd Edition.

By Matthew E. Johl, W.H. Freeman and Company, New York.

Forensic Science Laboratory Manual and Workbook, 3rd Edition

By Thomas Kubic and Nicholas Petraco, CRC Press.

* A Marble notebook is needed for lab.

Optional Text

Criminalistics-An introduction to forensic science, 9th Edition.

By Richard Saferstein, Prince Hall, Inc, New Jersey.

College wide policies for undergraduate courses (see the Undergraduate Bulletin, Chapter IV Academic Standards)

- A. **Incomplete Grade Policy**
- B. **Extra Work During the Semester**
- C. **Americans with Disabilities Act (ADA) Policies**

“Qualified students with disabilities will be provided reasonable academic accommodations if determined eligible by the Office of Accessibility Services (OAS). Prior to granting disability accommodations in this course, the instructor must receive written verification of a student’s eligibility from the OAS which is located at L66 in the new building (212-237-8031). It is the student’s responsibility to initiate contact with the office and to follow the established procedures for having the accommodation notice sent to the instructor.”

Source: Reasonable Accommodations: A Faculty Guide to Teaching College Students with Disabilities, 4th ed., City University of New York, p.3.
(http://www.jjay.cuny.edu/studentlife/Reasonable_Accommodations.pdf)

Statement of the College Policy on Plagiarism

Plagiarism is the presentation of someone else’s ideas, words, or artistic, scientific, or technical work as one’s own creation. Using the ideas or work of another is permissible only when the original author is identified. Paraphrasing and summarizing, as well as direct quotations require citations to the original source.

Plagiarism may be intentional or unintentional. Lack of dishonest intent does not necessarily absolve a student of responsibility for plagiarism.

It is the student’s responsibility to recognize the difference between statements that are common knowledge (which do not require documentation) and restatements of the ideas of others. Paraphrase, summary, and direct quotation are acceptable forms of restatement, as long as the source is cited.

Students who are unsure how and when to provide documentation are advised to consult with their instructors. The Library has free guides designed to help students with problems of documentation. (John Jay College of Criminal Justice Undergraduate Bulletin, <http://www.jjay.cuny.edu/academics/654.php> , see Chapter IV Academic Standards)

Lecture Schedule

| Weekday | Date | Lecture Topics |
|------------------|-------------|--|
| Monday | 27-Aug-12 | Syllabus/Introduction to Forensic Science |
| Wednesday | 29-Aug-12 | Forensic Chemistry |
| Monday | 3-Sep-12 | NO CLASS |
| Wednesday | 5-Sep-12 | Atomic Theory and The Periodic Table |
| Monday | 10-Sep-12 | Chromatography |
| Wednesday | 12-Sep-12 | Light and Matter |
| Monday | 17-Sep-12 | NO CLASS |
| Wednesday | 19-Sep-12 | Microscopy |
| Monday | 24-Sep-12 | REVIEW |
| Wednesday | 26-Sep-12 | NO CLASS |
| Monday | 1-Oct-12 | EXAM 1 |
| Wednesday | 3-Oct-12 | Hairs and Fibers |
| Monday | 8-Oct-12 | NO CLASS |
| Wednesday | 10-Oct-12 | Structure of Drugs |
| Monday | 15-Oct-12 | Properties of Solutions – aqueous |
| Wednesday | 17-Oct-12 | Properties of Solutions – intermolecular forces |
| Monday | 22-Oct-12 | Drug Chemistry |
| Wednesday | 24-Oct-12 | Chemical Equilibrium and Poisons |
| Monday | 29-Oct-12 | Intro to Biochemistry and DNA Analysis |
| Wednesday | 31-Oct-12 | REVIEW |
| Monday | 5-Nov-12 | EXAM 2 |
| Wednesday | 7-Nov-12 | Fingerprints |
| Monday | 12-Nov-12 | Questioned Documents |
| Wednesday | 14-Nov-12 | Firearms and Toolmarks/ Impressions |
| Monday | 19-Nov-12 | Anthropology/Pathology |
| Wednesday | 21-Nov-12 | Crime Scene/Evidence Collection and Preservation |
| Monday | 26-Nov-12 | REVIEW |
| Wednesday | 28-Nov-12 | EXAM 3 |
| Monday | 3-Dec-12 | Chemistry of Fire and Heat |
| Wednesday | 5-Dec-12 | Chemistry of Explosions |
| Monday | 10-Dec-12 | Glass and Soil |
| Wednesday | 12-Dec-12 | REVIEW |
| Monday | 17-Dec-12 | Finals Week |
| Wednesday | 19-Dec-12 | Finals Week |

Lab Schedule – Sections 09 & 10

| Weekday | Date | Lab |
|------------------|-------------|---|
| Monday | 27-Aug-12 | Introduction/Math Refresher/ Documentation |
| Wednesday | 29-Aug-12 | Documentation/Chemistry Recitation |
| Monday | 3-Sep-12 | NO CLASS |
| Wednesday | 5-Sep-12 | Identification/Individualization |
| Monday | 10-Sep-12 | Identification/Individualization Chromatography Recitation |
| Wednesday | 12-Sep-12 | Chromatography Lab |
| Monday | 17-Sep-12 | NO CLASS |
| Wednesday | 19-Sep-12 | Chromatography Lab |
| Monday | 24-Sep-12 | Chromatography Lab/Microscopy Recitation |
| Wednesday | 26-Sep-12 | NO CLASS |
| Monday | 1-Oct-12 | Microscopy Lab |
| Wednesday | 3-Oct-12 | Microscopy Lab/Hairs and Fibers Recitation |
| Monday | 8-Oct-12 | NO CLASS |
| Wednesday | 10-Oct-12 | Hairs and Fibers Lab |
| Monday | 15-Oct-12 | Hairs and Fibers Lab |
| Wednesday | 17-Oct-12 | Hairs and Fibers Lab |
| Monday | 22-Oct-12 | Trace Lab |
| Wednesday | 24-Oct-12 | Serology Recitation & Lab |
| Monday | 29-Oct-12 | Serology Lab |
| Wednesday | 31-Oct-12 | Fingerprint Recitation & Lab |
| Monday | 5-Nov-12 | Fingerprint Lab |
| Wednesday | 7-Nov-12 | Fingerprint Lab |
| Monday | 12-Nov-12 | Forgery Detection Recitation & Lab |
| Wednesday | 14-Nov-12 | Ballistics Recitation & Lab |
| Monday | 19-Nov-12 | Odontology Lab |
| Wednesday | 21-Nov-12 | Crime Scene |
| Monday | 26-Nov-12 | Crime Scene |
| Wednesday | 28-Nov-12 | LAB FINAL EXAM |
| Monday | 3-Dec-12 | General Unknowns |
| Wednesday | 5-Dec-12 | General Unknowns |
| Monday | 10-Dec-12 | General Unknowns |
| Wednesday | 12-Dec-12 | General Unknowns |
| Monday | 17-Dec-12 | Finals Week |
| Wednesday | 19-Dec-12 | Finals Week |

Lab Schedule – Sections 11 & 12

| Weekday | Date | Lab |
|-----------------|-------------|---|
| Tuesday | 28-Aug-12 | Introduction/Math Refresher/ Documentation |
| Thursday | 30-Aug-12 | Documentation/Chemistry Recitation |
| Tuesday | 4-Sep-12 | Identification/Individualization |
| Thursday | 6-Sep-12 | Identification/Individualization Chromatography Recitation |
| Tuesday | 11-Sep-12 | Chromatography Lab |
| Thursday | 13-Sep-12 | Chromatography Lab |
| Tuesday | 18-Sep-12 | NO CLASS |
| Thursday | 20-Sep-12 | Chromatography Lab/Microscopy Recitation |
| Tuesday | 25-Sep-12 | NO CLASS |
| Thursday | 27-Sep-12 | Microscopy Lab |
| Tuesday | 2-Oct-12 | Microscopy Lab/Hairs and Fibers Recitation |
| Thursday | 4-Oct-12 | Hairs and Fibers Lab |
| Tuesday | 9-Oct-12 | Hairs and Fibers Lab |
| Thursday | 11-Oct-12 | Hairs and Fibers Lab |
| Tuesday | 16-Oct-12 | Trace Lab |
| Thursday | 18-Oct-12 | Serology Recitation & Lab |
| Tuesday | 23-Oct-12 | Serology Lab |
| Thursday | 25-Oct-12 | Fingerprint Recitation & Lab |
| Tuesday | 30-Oct-12 | Fingerprint Lab |
| Thursday | 1-Nov-12 | Fingerprint Lab |
| Tuesday | 6-Nov-12 | Forgery Detection Recitation & Lab |
| Thursday | 8-Nov-12 | Ballistics Recitation & Lab |
| Tuesday | 13-Nov-12 | Odontology Lab |
| Thursday | 15-Nov-12 | Crime Scene |
| Tuesday | 20-Nov-12 | Crime Scene |
| Thursday | 22-Nov-12 | NO CLASS |
| Tuesday | 27-Nov-12 | LAB FINAL EXAM |
| Thursday | 29-Nov-12 | General Unknowns |
| Tuesday | 4-Dec-12 | General Unknowns |
| Thursday | 6-Dec-12 | General Unknowns |
| Tuesday | 11-Dec-12 | General Unknowns |
| Thursday | 13-Dec-12 | Reading Day |
| Tuesday | 18-Dec-12 | Finals Week |
| Thursday | 20-Dec-12 | Finals Week |