



Forensic Science is exciting, but at the same time a very demanding course of study. The core courses follow a rigorous program of study and you will need to plan carefully in order to make the best decisions for your undergraduate years.

This booklet is a guide to help you make important decisions about your undergraduate studies in the Forensic Science Program.

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	Course	Course Title	Credits	Prerequisites	Co-requisites	NOTES
<b>First Year</b>						
Fall Semester	Biology					
	Chemistry					
	Math					
	English					
	Elective					
Spring Semester	Biology					
	Chemistry					
	Math					
	English					
	Elective					
<b>Second Year</b>						
Fall Semester	Chemistry					
	Physics					
	Math					
	Soc. Sci					
Spring Semester	Chemistry					
	Physics					
	Law 202					
	Eth					
	Soc.Sci.2					
Summer	Electives					
	Other					



	Course	Course Title	Credits	Prerequisites	Co-requisites	NOTES
<b>Third Year (Students should begin planning to take FOS 401 or 402 in their senior year)</b>						
Fall Semester	Chemistry 302					
	Chemistry 315					
	Chemistry 320					
	MAT 301					
Spring Semester	Chemistry 321					
	History 231					
Track Course	FOS 313 or TOX 313 or BIO 315					
	Fine Arts					
	PED					
	Electives					
<b>Fourth Year</b>						
Fall Semester	FOS 415 or TOX 415 or BIO 412					
	FOS 401 or 402					
	Foreign Language					
	other					
Spring Semester	FOS 416 or TOX 416 or BIO 413					
	Philosophy					
	Foreign Language					
	Literature					

Course	Course Title	Credits	Prerequisites	Co-requisites
<b>First Year</b>				
BIO 103 or BIO 101-102	Modern Biology I or Paced Modern Biology IA & IB	5	SAT Verbal: 520 or higher or 80% on Biology Regents	
BIO 104	Modern Biology II	4	BIO 103 or BIO 101-102	
CHE 103 or CHE 101-102	General Chemistry I or Paced General Chemistry IA & IB	5	80% on Chemistry Regents or taking MAT 141	
CHE 104	General Chemistry II	4	CHE 103 or CHE 101-102	MAT 241
<b>Second Year</b>				
CHE 201	Organic Chemistry I	4	CHE 104	MAT 242
CHE 202	Organic Chemistry II	4	CHE 201	
CHE 220	Quantitative Analysis	4	CHE 104	
PHY 203	General Physics I	4	MAT 242	
PHY 204	General Physics II	4	MAT 242 and PHY 203	
<b>Third Year</b>				
CHE 302	Physical Chemistry II	3	CHE 104 and PHY 203-204	
CHE 315	Biochemistry	4	BIO 104, CHE 201-202, PHY 204, MAT 242	
CHE 320	Instrumental Analysis I	4	CHE 104, 201-202, 220, PHY 204, MAT 242	CHE 302
CHE 321	Instrumental Analysis II	4	CHE 104, 201-202, 220, PHY 204, MAT 242	CHE 302
MAT 301	Probability and Statistics I	3	ENG 102 or 201 and MAT 241	
<b>Capstone Internship (external)/Research (internal)</b>				
FOS 401 or 402	Forensic Science Laboratory Internship or Undergraduate Research Experience	3 400 hrs	Senior standing in the major, Forensic Science major, and permission of the instructor	See Dr. Diaczuk or Dr. Pilette for advisement
<b>Criminalistics Track</b>				
FOS 313 (3 <sup>rd</sup> Year)	Introduction to Criminalistics	3	CHE 201-202	
FOS 415 (4 <sup>th</sup> Year)	Forensic Science Laboratory I	4	CHE 315, 320-321, PHY 203-204, FOS 313	
FOS 416 (4 <sup>th</sup> Year)	Forensic Science Laboratory II	4	Same as above	
<b>Toxicology Track</b>				
TOX 313 (3 <sup>rd</sup> Year)	Environmental & Industrial Agents	3	CHE 201-202	
TOX 415 (4 <sup>th</sup> Year)	Forensic Pharmacology	4	CHE 315, 320-321, TOX 313	
TOX 416 (4 <sup>th</sup> Year)	Analytical Toxicology	4	CHE 315, 320-321, TOX 313	
<b>Molecular Biology</b>				
BIO 315	Genetics	3	BIO 104, CHE 201-202, PHY 204, MAT 301	
BIO 412	Molecular Biology I	4	BIO 315, CHE 315	
BIO 413	Molecular Biology II	4	BIO 412	
*In addition, students must fulfill the college General Education Requirements and LAW 202: Law and Evidence (3 credits)				



**I. Skills (12 – 15 credits)**

- ENG 101 (ENG 095 for SEEK Students only)
  - ENG 201
  - SPE 113 (SPE 1151 for SEEK students only)
  - MAT 104 OR MAT 105\* (Placement based upon Compass Exam score)
  - MAT 141 (MAT 141, Pre-calculus is required for FOS, CIS, and some FIS majors)
- \* MAT 104 or MAT 141 may not be required depending upon the Mathematics Compass Exam score.

**II. Core Requirements (15 credits)**

You must have completed ENG 101 in order to register for PHI231, HIS 231 AND HIS 232

- HIS 231
- HIS 232
- PHI 231

You must have completed ENG 201 in order to register for any Literature course.

- LIT 230 OR 231
- LIT 232 OR 233

**III. Distribution Requirements**

*Cultural Studies (6-12 credits)*

Foreign Languages\* (students must complete 2 semesters of foreign language) Students who take SPA 101 cannot fulfill the general education requirements by taking SPA 111. Students who take SPA 111 must also take SPA 112 or a higher level course to satisfy the general education requirements

- ETH 123, 124, or 125
- Fine Arts. Any Art, Music, or Drama course

\* NYS students who have completed 3 years of language at the high school level, including a passing grade on level III Regents Examination are exempt from the foreign language requirement.

*Social Sciences (6 credits)*

Two courses are required from this section. Check Major Prerequisites first.

- ANT 101
- GOV 101
- ECON 101
- PSY 101
- SOC 101

*Physical Education (1-3 Credits)*

- Any PED course\*

\* An exemption can be granted to students that participate in a John Jay College athletics team or have police, fire, fire fighter or military training.



**Academic Preparation Questionnaire**

**Name** \_\_\_\_\_

**Date** \_\_\_\_\_

The following self-study questions are designed to help you think about your upcoming academic experience at college. Please be sure to take time to answer each section openly and honestly. Your responses will help you and your advisor determine specific study skill strategies and habits.

**Time Management Skills**

- Tendency to procrastinate with assignments? \_\_\_\_\_
- Not able to juggle work and class? \_\_\_\_\_
- Unable to organize schedule to allow for study time? \_\_\_\_\_
- Do job obligations impact your study time? \_\_\_\_\_
- Do family commitments impact your study time? \_\_\_\_\_

**Study Habits**

- How many hours per day are devoted to study? \_\_\_\_\_
  - Are you able to find a quiet, comfortable place to study? \_\_\_\_\_
  - Do you thoroughly read assignments as they are given? \_\_\_\_\_
  - Do you take good lecture notes in class and rework them before each class period? \_\_\_\_\_
- 
- How often do you meet with your professor when you feel you are having problems with the class? \_\_\_\_\_

- 
- Do you seek tutoring assistance? \_\_\_\_\_
  - Do you cram for exams? \_\_\_\_\_
  - Do you study in groups or have study partners? \_\_\_\_\_

**Test anxiety, lack of concentration**

- Do you freeze up when taking tests? \_\_\_\_\_
- Do certain types of tests stress you more than others? \_\_\_\_\_
- Do you have difficulty finishing tests? \_\_\_\_\_
- Are you easily distracted when studying, etc.? \_\_\_\_\_

**Class Attendance**

- Do you regularly miss classes? How often? \_\_\_\_\_
- Does illness impact your class attendance? \_\_\_\_\_
- Do you miss class because you feel unmotivated? \_\_\_\_\_
- Do you miss class because you sleep in? \_\_\_\_\_
- Do you try to make up work, get notes, etc. when you must miss? \_\_\_\_\_

**Social Life**

- Does your social life take priority over your academics? \_\_\_\_\_
- Do you often stay up late to party? \_\_\_\_\_
- Are drugs and/or alcohol impacting your academics? \_\_\_\_\_
- Does dating a significant other impact time spent on academics? \_\_\_\_\_
- Do other commitments negatively impact your study time? \_\_\_\_\_



**Motivation Factors, Academic Preparedness**

- Do you find you classes interesting? \_\_\_\_\_
- Do you feel overwhelmed by the academic challenges of certain courses? \_\_\_\_\_
- If so, which course? \_\_\_\_\_
- Do you think you were academically prepared for college? \_\_\_\_\_
- Are you confused about your major/career plans? \_\_\_\_\_
- Do you have a positive attitude toward college? \_\_\_\_\_
- Do you like to be challenged when learning something new? \_\_\_\_\_
- Do you sometimes wonder why you are at John Jay College? \_\_\_\_\_

**Other problems**

- Transportation problems? \_\_\_\_\_
- Health problems? \_\_\_\_\_
- Personal/Family issues? \_\_\_\_\_
- Trouble adjusting to the college environment? \_\_\_\_\_
- Other issues? \_\_\_\_\_

**Academic Success**

As you seek to make a plan for academic success, it will be important to manage the problems you noted at the beginning of this evaluation. By focusing on the academic tasks you do well, you can find ways to use these strengths to live up to your academic success.

1. List any academic tasks you do with ease.

\_\_\_\_\_  
\_\_\_\_\_

2. What subjects give you the most sense of accomplishment?

\_\_\_\_\_  
\_\_\_\_\_

3. What are you most intellectually curious about?

\_\_\_\_\_  
\_\_\_\_\_

4. How do you learn best?

\_\_\_\_\_  
\_\_\_\_\_

5. Outside of academics, what are you good at? \_\_\_\_\_

6. Write about your greatest success – academic or otherwise. What caused you to be successful? List details.

\_\_\_\_\_  
\_\_\_\_\_

7. List three or more behaviors and/or attitudes of the very best student that you know.

\_\_\_\_\_  
\_\_\_\_\_



Forensic science is the application of the natural sciences to matters of legal concern. Forensic scientists work on both civil and criminal cases and because the application of forensic science spans a broad spectrum of scientific knowledge, most are specialists in a particular area of science or technology. Some of these specialties include anthropology, criminalistics, engineering, molecular biology, pathology, toxicology, and other areas. Scientific problem solving is a key component unifying all of these areas.

A solid foundation in the physical and biological sciences is necessary in the education of the prospective forensic scientist. A working knowledge of the law is also necessary as forensic science, by definition, requires an ongoing interaction with the legal system. Forensic scientists are scientists first and must be able to use their knowledge of science to analyze the evidence in question, but they must also be able to explain their results in simple language to judges, lawyers and juries. Communication skills are important because a misunderstanding in communicating an expert opinion can have dramatic consequences and affect a defendant's life and liberty.

While most scientists are careful to maintain the scientific integrity of their samples during experimentation, forensic scientists must also be concerned with the legal integrity of the physical evidence that they work with. In addition to ensuring that the analysis of the evidence was done to ensure an accurate result, the forensic scientist must also ensure that the evidence is properly handled and must carefully document the transfer, storage, analysis and final disposition of all physical evidence in order for it to be admissible as evidence in a court of law.

The forensic science program at John Jay College provides a solid educational foundation in the theory and techniques necessary to master the laboratory sciences, field investigation and expert testimony requirements of a successful graduate. Students begin the major in their freshman year, learning chemistry, biology and calculus and proceed to advanced science courses in their sophomore and junior years. In the senior year, undergraduates begin focusing in one of three specialization tracks as well as learning to apply their knowledge in an undergraduate research project or external laboratory internship. All students in the program are encouraged to solve scientific problems by researching theoretical concepts and experimenting with different techniques to gain a better understanding of when and how various techniques should be applied.

The forensic science program at John Jay College offers specialization in criminalistics, molecular biology, and toxicology. Mastery in these specialties requires expertise in the areas of chemistry, biology, physics, and many other areas of scientific and mathematical knowledge.

*Criminalistics* involves the recognition, identification, individualization, evaluation, and reconstruction of physical evidence. Any type of material can become physical evidence, but criminalists typically analyze such evidence as fingerprints, hairs, fibers, physiological fluid stains, bloodstain patterns, and firearms evidence. A criminalist may identify trace evidence to connect a suspect to a crime scene or may analyze a blood-spatter pattern to estimate where a victim was shot.

*Toxicology* involves the investigation of poisoning incidents and the analysis of samples for the presence of drugs and toxic substances. Toxicology samples are routinely collected in a variety of situations, including urine testing of athletes, drug testing of hair from applicants to law enforcement agencies, suspected cases of driving under the influence of alcohol or drugs, and from autopsy subjects. Toxicologists must be knowledgeable about the metabolism of various drugs and poisons in the human body and be able to identify and quantify the drug or poison in question.



*Molecular biology* applied to forensic science focuses on obtaining and comparing DNA profiles from biological evidence. These analyses have provided an important tool in the investigation of many types of crimes, including homicide, sexual assault and burglary. Matching the DNA profile from a bloodstain at a crime scene to a known suspect can be compelling evidence of guilt. Forensic DNA analysis is also the major tool used to exonerate convicted felons of crimes which they did not commit. Since biological evidence can come in many forms, from the skin cells left behind from touching an object to the biological fluid stains collected from a sexual assault scene, forensic molecular biologists have at hand a variety of techniques which can be used to extract DNA from a range of different sample types.



## **Developing Comprehension**

### Pre-Reading

Pre-reading specific areas of your text book will help you to be better prepared for class lecture and lab. Check your syllabus for certain key words and concepts.

Techniques for pre-reading before class lecture or recitation.

- Read the introduction or the first two to three paragraphs.
- Read the first sentence of the remaining paragraphs.
- Read the summary of the last two to three paragraphs.
- For chapters longer than 20 pages, divide the chapter into two or three sections and apply pre-reading or read the introduction, section headings, the first few sentences in each main section, bold face print and conclusion.
- Note all visual aids and diagrams. Visual aids present a summary of what is described in your text. It is likely that your professor will refer to these during lecture.

### Chapter Reading

- Read to understand, not to memorize. Be focused and aggressive: try to anticipate the author's thoughts. Ask questions after pre-reading and before thorough reading.
  - What is the point of the material?
  - What is the purpose of reading this section?
  - What is the sequence of ideas?
  - What information or ideas will I be looking for as I read?
- Take a ten-minute break every hour.
- Turn each heading into a question. Then read to answer the question you just posed.
- Underline or highlight only after reading a paragraph or short section.
- Write in the margin the key words representing the ideas you've underlined.
- After you've read the assignment, go back and recite the ideas.

## **Taking Lecture Notes**

### Before Class:

Do the assigned reading beforehand.  
Review the class notes from the last class.  
Be on time and sit toward the front of the room to avoid distraction.

### During Class

Note the main topic, key points and organization of ideas.  
Use a binder that can store extra hand-outs from class.  
Write key study words on the delineated margin of the paper.

### After the Lecture

Clarify your notes and fill in missing information.  
Highlight or box-in ideas that represent main ideas.  
Write the key words in the margins, cover up the main body of the notes and recite.  
Once a week, take 30 – 60 minutes to review all the notes you've taken since the start of the semester.  
Before an exam, review by reciting.



Review and explain all visuals that deal with the main topics.  
Remember to understand main ideas, not only details.

#### Exam Time

For multiple choice, matching, fill in the blank, etc.:

Scan the exam and note the various weights assigned to specific sections.

Develop an overall time plan for each section.

Read the questions carefully.

In multiple choice questions, read all choices before deciding your answer.

If a question seems to take too long, mark it, leave it and come back to it later.

For essay questions:

Read directions carefully.

Read all essay questions before starting to write, selecting those for which you are best prepared.



Students are regularly evaluated for their academic competencies in the Forensic Science Program. They are evaluated in January, after the end of the fall semester, and in June, at the end of the spring semester. Students are evaluated in order to ensure that they complete their course of study in a major at John Jay College for which they are qualified.

The recommendations for warnings and dismissals are based on evaluation of the student's first year's academic performance in the major and continue through the end of the second year. This corresponds to a minimum of 21 credits of math and science courses prior to their first evaluation. It is not an evaluation of the student's overall GPA. The recommended action of warning or dismissal is advised for students performing below a 2.0 GPA in the Forensic Science major's math and science courses at John Jay College.

Students who receive a warning or dismissal letter must see an advisor before registering for classes. Students who are dismissed from the program will be moved to "undeclared major" status and must re-declare a new major.



**What lab reports and scientific papers do:**

- Persuade others to accept or reject hypotheses by presenting data and interpretations.
- Detail data, procedures, and outcomes for future researchers.
- Become part of the accepted body of scientific knowledge when published unless later disproved.
- Provide an archival record for reference and document a current situation for future comparison.

**Format**

The typical lab report includes: title, abstract, introduction, materials and methods, results, discussion, references and literature cited.

**Title:**

- Reflect the factual content with less than ten words in a straightforward manner.
- Use keywords researchers and search engines on the Internet will recognize.

**Abstract:**

Summarize in a concise paragraph the purpose of the report, data presented, and major conclusions in about 100 – 200 words.

**Introduction:**

- Define the subject of the report: “Why was this study performed?”
- Provide background information and relevant studies: “What knowledge already exists about this subject?”
- Outline scientific purpose(s) and/or objective(s): “What are the specific hypotheses and the experimental design for investigation?”

**Materials and methods:**

- List materials used, how were they used, and where and when was the work done (especially important in field studies).
- Describe special pieces of equipment and the general theory of the analyses or assays used.
- Provide enough detail for the reader to understand the experiment without overwhelming him/her. When procedures from a lab book or another report are followed exactly, simply cite the work and note that details can be found there.

**Results**

- Concentrate on general trends and differences and not on trivial details.
- Summarize the data from the experiments without discussing their implications.
- Organize data into tables, figures, graphs, photographs, etc. Data in a table should not be duplicated in a graph or figure.
- Title all figures and tables; include a legend explaining symbols, abbreviations, or special methods.
- Number figures and tables separately and refer to them in the text by their number, i.e. Figure 1 shows that the activity....The activity decreases after five minutes (fig. 1).

**Discussion**

- Interpret the data; do not restate the results.
- Relate results to existing theory and knowledge. Explain the logic that allows you to accept or reject your original hypotheses.
- Speculate as necessary but identify it as such.
- Include suggestions for improving your techniques or design, or clarify areas of doubt for further research.



**References & literature cited**

- Cite only references in your paper and not a general bibliography on the topic.
- Alphabetize by last name of the author.
- Follow the recommended format for citations.

**General style**

- Strive for logic and precision and avoid ambiguity, especially with pronouns and sequences.
- Keep your writing impersonal; avoid the use of the first person (i.e. I or we).
- Use the past tense and be consistent within the report, note: “data” is plural and “datum” is singular; species is singular and plural.
- Italicize all scientific names (genus and species).
- Use the metric system of measurement and abbreviate measurements without periods (i.e. cm kg). Spell out all numbers beginning sentences or less than 10 (i.e. “two explanations of six factors”).
- Write numbers as numerals when 10 or greater (i.e. 156) or associated with measurements (i.e. 6 mm or 2 g).
- Have a neutral person review and critique your report before submission.

\* adapted from Biological Investigations, 5th ed. by Warren D. Dolphin 1999, published by McGraw-Hill.”

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<http://www.studygs.net/labreports.htm>

### **What is PRISM?**

The Program for Research Initiatives for Science Majors (PRISM) at John Jay College provides an opportunity for Forensic Science students to engage in the process of scientific research while completing their degree.

Early in the program, students attend seminars and training programs to better prepare them for research. At the beginning of their sophomore year, students are matched with a faculty mentor. Our PRISM mentors work in a variety of research areas – from biochemistry to environmental science, forensic science, molecular biology, and toxicology. Every effort is made to match students with advisors working in their particular area of interest.

In addition to direct research experience, PRISM students are eligible for monetary stipends for their research, travel grants for conferences, GRE preparatory help, and counseling on graduate school applications and career planning. They can also look forward to guest lectures and informal seminars with research faculty, scientists, and other professionals.

PRISM research experiences go beyond the traditional training students receive in the classroom. They include instruction on literature searches, project design, implementation, experimental sampling, data analysis, and scientific writing/presentation, as well as providing a community in which students are able to flourish. These experiences help to demonstrate that science is not exact, but an iterative process of questioning the world around us, and provide students with the skills necessary to succeed in science beyond the classroom, joining the community of researchers around the globe.

### **Why do research?**

Research is more than just learning about your specific topic area. It's also an opportunity to learn about yourself and the world around you. Conducting research teaches you how to gather and analyze information on a topic, ask answerable questions, and discover paths to solving problems – tools that everybody can use.

Research experiences through PRISM will help you learn to use proper laboratory techniques, understand data analysis and interpretation, and conduct literature searches. As importantly, though, it will help you to develop good teamwork and time management skills, and teach you how to communicate proficiently.

All of these skills are as important in your everyday life as they are in scientific and academic settings. They are expected by graduate schools admitting students to their programs, as well as employers considering applicants for jobs. Regardless of the direction your career takes, building your skills in analysis and problem-solving will help you in every aspect of your life.

### **How do I get started?**

To apply for PRISM, complete the PRISM Application Form. Take some time to review the program requirements so that you know what is expected of students. The “What can I expect?” section offers a year-by-year review of the program, highlighting the different activities that take place at each stage the program. If you are interested in speaking with students already in the program, email us and let



us know what type of research you might be interested in. We will do our best to connect you with a student who can best answer your questions.

Keep in mind that the program continues to grow in popularity, which means it is becoming more and more difficult to enroll students after they have started their third year in the Forensic Science major. For this reason, students are encouraged to contact the PRISM Program Coordinator, Dr. Ron Pilette, as soon as they think they may be interested in taking part.

### **Program Requirements**

PRISM is open to any student at John Jay College who has a declared major in Forensic Science and a minimum grade point average of 2.5. Once they have completed Organic Chemistry, students can be paired with a mentor and begin work on an approved research project. Students who are enrolled in the program are expected to meet the following requirements:

- \* Maintain, or do better than, a grade “C” average in all upper level science courses.
- \* Attend either the summer or winter training, which engages students in discussions on ethics, scientific conduct, professional responsibility, and community responsibility. This training also addresses the topics of literature searches, record keeping, and report writing, as well as introducing students to basic laboratory techniques and protocol.
- \* Submit a new research proposal each semester, explaining what has been accomplished and what is planned for the next semester.
- \* Arrange a research and meeting schedule with their mentor, and follow that schedule faithfully.
- \* Attend the January group meeting and present updates on their current research.
- \* Present a poster at the PRISM Symposium in May explaining their research.

Think you’re ready to apply? Complete the PRISM Application Form, then take time to review the mentors and their projects. You can either contact a mentor directly to see if they are accepting new students, or ask Dr. Pilette for assistance in finding an appropriate mentor.

For more information, visit the PRISM website at [www.prismatjjay.org](http://www.prismatjjay.org).



**FOS 401**

**Science Internship Director: Peter Diaczuk**

**Contact Information: fos401@gmail.com**

**Office 4501N Hours by appointment only**

The internship experience can be a very exciting and rewarding experience. One key to getting the most out of the experience is good communication between the intern and the agency hosting the internship. It is highly recommended that the intern meet with a representative of the hosting agency to discuss how the 400 hours to be invested will be most beneficial for both parties. This meeting must take place before the start of the internship. Research what forensic disciplines are available at a particular host agency prior to contacting them (e.g. do not expect to perform DNA analysis in a trace laboratory). The learning possibilities exceed those that may be achieved within the academic institution, because there is no substitute for practical experience. A successful internship may even result in a job opportunity. Historically, many students have been hired as full-time forensic scientists by the laboratory in which each interned.

Many laboratories require the intern to perform a research project during his/her internship. To prepare for this eventuality, compile a list of at least four topics or projects that you would like to research (note that you can only work within the scope of the agency; you simply cannot walk into an internship and perform “random” work). Be prepared, however, to perform a research project on a different topic if the host agency cannot accommodate any of the topics on your list. To assist you in preparing your list, and to gain an understanding of the material, perform a literature search. Have all relevant information with you at the interview and submit a copy to the science internship director for your file.

The following science courses must be successfully completed before you begin your Internship.

Calculus (MAT 241, 242)

Physics (PHY 203, 204)

Biology (BIO 103, 104)

Physical Chemistry (CHE 301, 302)

General Chemistry (CHE 103, 104)

Biochemistry (CHE 315)

Organic Chemistry (CHE 201, 202)

Instrumental Analysis (CHE 320, 321)

\* Students earn credit hours for their Internship and need to be enrolled in the course FOS 401.



### **Forensic science books and other resources**

Browse the library shelves in both the stacks (=lending collection) and the *reference* shelves around call numbers **HV 8073** and **RA 1001**.

#### **Some reference books** (use in the library):

Comprehensive toxicology (13 vol). Reference RA 1199.C648 1997.  
Courtroom toxicology. Reference RA 1228.H68.  
Drugs: Synonyms and properties. Reference RS51.D776 2002.  
Encyclopedia of DNA & the U.S. criminal justice system. Ref RA1057.55 P34 2004.  
Encyclopedia of forensic and legal medicine. Reference RA1051.E54 2005.  
Handbook of basic tables for chemical analysis. Reference QD 78.B78 2003  
Handbook of chemistry and physics. 86<sup>th</sup> ed, 2005-6. Reference QD 65.43.  
Handbook of forensic drug analysis. Reference RA 1160.H36 2005.  
HPLC methods for pharmaceutical analysis. Reference RS 1895.5.H54 L77 1997  
Saferstein. (2002). Forensic science handbook. 2<sup>nd</sup> edition. Reference HV 8073 .F585 2002  
Siegel, Sakko & Knupfer. Encyclopedia of forensic sciences. Ref HV 8073.E58 2000.  
United States pharmacopeia. Reference RS141.2 .U48 2006.  
Butler's Forensic DNA Analysis, 2ed , Elsevier  
Watson's Molecular Biology of the Gene, 6th, Pearson  
Petraco, Sherman. Illustrated Guide to Crime Scene Investigation  
Kubic, Petraco. Color Atlas of Microscopy  
Robert Blackledge (ed.). Forensic Analysis on the Cutting Edge  
McCrone. Polarized Light Microscopy  
John Lentini. Scientific Protocols for Fire Investigation

#### **Some books in the stacks** (a little light reading) (can be borrowed for 3 weeks):

Benecke, M. (2005). Murderous methods: using forensic science to solve lethal crimes.  
Stacks - HV8079 .H6 B4613 2005  
Gerber & Saferstein. (1997). More chemistry and crime: from marsh arsenic test to DNA profile.  
Stacks - HV 8073 .M763 1997  
Ramsland, K. (2001). The forensic science of C.S.I. . Stacks - HV8073 .R325 2001  
Ramsland, K. (2004). The science of cold case files. Stacks - HV8073 .R326 2004  
The Century of the Detective- by Jurgen Thorwald - Harcourt, Brace & World  
Jurgen Thorwald. Crime Science  
Raymond Murray. Evidence from the Earth - Mountain Press  
James Doyle. True Witness - Palgrave Macmillan

#### **Some forensic science journals:**

Forensic Science International. Periodicals RA1001.F6 (also available electronically)  
Journal of Forensic Sciences. Periodicals RA1001.A57



Science and Justice. (UK publication). Periodicals RA 1001.F63 .

Journal of Forensic Identification. Periodicals HV8073.I3

Forensic Science Review. (very long articles reviewing technical topics). Periodicals HV 8073.F589

### CUNY+ library catalog

Use to identify books, dissertations, and journal titles owned by John Jay and all CUNY schools. You can borrow books from any CUNY library – either by going there physically to pick up the book, or by requesting through CUNY+ that the book be sent to John Jay for you. Books may be returned to any CUNY library. Books may be borrowed for 3 weeks, and renewed twice (renew through CUNY+). No more than ten books may be borrowed per day.

Use **CUNY+** to identify books, and get their location and call number.

Use the *guided search* screen for more control over your keyword searches.

Examples of **CUNY+** searches: **DNA fingerprinting**  
**DNA and history**  
**DNA and forensic**

Find dissertations by searching like this:

**Thesis and forensic thesis and fingerprint\***

The asterisk truncates – so the search looks for fingerprint, fingerprints, fingerprinting.

Many PhD dissertations are shelved at **LD 1**. Master’s theses from JJ are shelved at **LD 2602. J3**

More dissertations from universities around the country are available electronically, in two databases – **Dissertation Abstracts**, and **Dissertations: Current Research** (from CUNY).

### Boolean Searching Review

Decide what words best describe your topic. Connect them with either **AND, OR** or **NOT**.

**Corpses and insects** retrieves records containing both words

**Beetles or flies** retrieves records containing either word

**(corpses or cadavers) and insects**

retrieves records containing the word insects

as well as

either the word corpses or the word cadavers

**insects not beetles** when you want insects but not beetles

**beetles not automobiles** when you want beetles but not cars

Use truncation – in most databases, the truncation symbol is an asterisk.

**Corps\*** will retrieve corpse and corpses.

When you find relevant articles, look at the subject headings in each record. Perhaps the subject heading is phrased “**entomology**” rather than “**insects**”? If so, search again, replacing “**insects**” with the term “**entomology**”.



## Electronic Resources

**Library home page:** [www.lib.jjay.cuny.edu](http://www.lib.jjay.cuny.edu)

Library electronic resources can be used from home, through the library home page, but they are password-protected. Use your John Jay email user id and password.

E.g. of format: user id = jane.smith password = jj1234.

### Internet sites:

Go to the library home page [www.lib.jjay.cuny.edu](http://www.lib.jjay.cuny.edu)

Click on Selected Internet Links

Browse to **Forensic Science** (Zeno's Forensic Science page is particularly good).

How to read a scientific journal article - [www.fiu.edu/~collinsl/Article%20reading%20tips.htm](http://www.fiu.edu/~collinsl/Article%20reading%20tips.htm)

How to read a paper - <http://bmj.bmjournals.com/collections/read.shtml>

Scientific journals (definition) - [http://en.wikipedia.org/wiki/Scientific\\_journal](http://en.wikipedia.org/wiki/Scientific_journal)

## Databases

To access the databases/indexes go to the library home page.

Click on Electronic Information Databases which will forward you to the databases home page.

Choose Forensic Science or Science from the pulldown menu on Databases by Broad Subject and click on Go.

### Databases containing books:

**FORENSICnetBASE** (<http://www.forensicnetbase.com/>) (JOHN JAY USE ONLY) A searchable collection of over 120 reference books in forensic science and related fields. A small collection, but particularly useful if you are at home and don't want to come into the library!

**Encyclopedia of Forensic Sciences** (<http://www.sciencedirect.com/science/referenceworks/0122272153>) (JOHN JAY USE ONLY) Electronic equivalent of the 3-volume encyclopedia.

### Databases for finding articles:

**AGRICOLA** (<http://www.nal.usda.gov/ag98/ag98.html>) Index to books and journal articles in agriculture; useful for forensic science.

**Forensic Bibliographic Database (FORS)** (<http://www.forensic.gov.uk:8590/?sp.nextform=mainfrm.htm&sp.usernumber.p=936656>) (JOHN JAY USE ONLY) Multidisciplinary index to the literature of the forensic sciences, 1976-. This is the best place to start searching the forensic science literature. It is a multidisciplinary index, covering journal articles published from 1976 to the present. NOTE: we have access for only 4 simultaneous users. If you can't get in, wait a while, then try again.

An idiosyncrasy of this database is that each record provides only an abbreviation of the journal title – e.g. FORENSIC-SCI-INT; rather than *Forensic Science International*. You do need to know the full and correct title of the journals – get them from the “Database Information” button on the left hand side. This brings up a new window with a menu on the left hand side – scroll through this to the Full List of Journals with Abbreviations. Note down the full journal titles for each of the citations you have found. And write down or email those citations! Then go to the library home page. Check both **List of Full Text Electronic Journals, Magazines & Newspapers** (<http://mh9fe2ft4z.search.serialssolutions.com/>) and **CUNY+ Library Catalog** (<http://www.lib.jjay.cuny.edu/cunyplus.html>) to see if we own the journals. If we do not own them, get the article through interlibrary loan. Or see “Other libraries”, below.



## Things I wish I would've known as a freshman in Forensic Science

Compiled by JJC upperclassmen forensic science majors

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1. If you don't like the natural sciences, take a hard look at the Forensic Science program at John Jay. What we've got is essentially four (or more) years jam-packed with biology, physics and math, in addition to an intense concentration in chemistry. Math is an incredibly important component of science. An understanding and appreciation of both subjects is necessary to succeed.
2. Keep in mind that we can't all be scientists, just as we can't all be singers or basketball players. Not every one is cut out for the scientific field, for whatever reason. Don't be ashamed, but don't waste your time, either. Getting D's is no reason to cheer. If you are getting low grades in General Chemistry and/or Organic Chemistry, you can still pull yourself up. Before you get too far into the program, though, take an honest look at why your grades are poor. There are no A's for effort, as frustrating as that may seem.
3. To get through the program, you're going to have to devote more time to studying than you ever have before.
4. Form study groups. Those of us who have been here for a few years will probably attribute some of our higher test scores to working in study groups. You'll also get a chance to meet some of your classmates and have some fun along the way. Make sure you actually study in the study group, though, because chatting won't help you on the exam.
5. Don't shy away from working with a tutor. There are free tutors available in room 4300. You can set up a one-to-one appointment. The mentors are all students who have done exceptionally well in the course(s) they're tutoring. Again, these tutors are absolutely free. Take advantage. You have nothing to lose.
6. Don't count on a curve in any class. Despite what you may hear through the rumor-mill, don't plan on a grade based on a curve unless the professor specifically lays it out for you. Usually students assume wrong and are disappointed when their grades are lower than anticipated. Additionally, comparing yourself to the rest of the class is a poor way to evaluate your performance. If in doubt, consult the college's handbook for grade assignments based on percentages.
7. Don't let anybody talk you out of staying on course with your chemistry class. Begin with General Chemistry and progress on. If you skip even a semester in the sequence, you could be behind and delay your graduation.
8. Talk to the upperclassmen. They will tell you what the faculty can't and will be more than willing to share with you their experience. At the same time, take what they say with a grain of salt – you have to find what works for you.
9. The forensic science program becomes very lab intensive in the junior and senior years. Consequently, if you do not like doing chemistry lab work, perhaps you should reconsider your major. This program has nothing to do with CSI – you are here to become a scientist – not a detective.
10. While it may seem difficult, try to remember what you've learned in each class. Unlike other studies in college, these classes build upon one another. Keeping your books at the end of the course, instead of selling them, will be helpful. Many of us have been shocked to realize that we've actually needed every science class that we've taken.



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11. This one has proven to be helpful time and time again – when you speak to anyone in the Office of the Registrar, Bursars office, Financial Aid, etc., either on the phone or in person, get the individuals name. If your issue spans more than one day, add the date, time and a brief note of what you were told. Keep a log of these things, as they will sometimes get you out of a jam. This is a good habit to get into in the real world.
12. The professors here are incredibly accessible and most are good about replying to E-mailed queries, even if you are not in his/her class. For instance, if you want to get a jumpstart on the year by reading the course text over the summer, E-mailing the professor usually yields the title/author/edition of the text. Most E-mail addresses around here have the format: jdoe@jjay.cuny.edu, and there is a directory on the JJC homepage.
13. Before or shortly after you begin taking classes, lay out a plan for the next four (or more) years, detailing which classes you'll take each semester. It'll save you a headache down the road when you are trying to get prerequisites in and dealing with classes that are only offered one semester each year. Of course, your plan can always be altered, but at least you'll have an idea of how long you'll be here at John Jay. It will be an added benefit of familiarizing you with the classes required for the forensic science degree.
14. While it is easy to forget why you're here during the first couple of years, try to remember that there is a light at the end of the tunnel. You won't have any "forensic" classes until the end of your junior year, so try to keep your interest in the subject by reading books and journals, joining the Forensic Science Society, attending forensic/scientific meetings, and discussing current forensic science issues with your peers.
15. If you want anything here at John Jay, you have to make it happen yourself. Be proactive. Don't rely on others to guide you or make decisions for you. Once you have accepted this arrangement, life will be easier.
16. When the going gets tough and everybody seems eager to remind you of the low graduation rate in the program, remember that we've made it through! It can be done. It's up to you to make it happen.



JOHN JAY COLLEGE  
THE CITY UNIVERSITY OF NEW YORK  
OF CRIMINAL JUSTICE

**THE MATH & SCIENCE RESOURCE CENTER**

New Building, room 01.94

Phone: 646-557-4635

Email: [msrc@jjay.cuny.edu](mailto:msrc@jjay.cuny.edu)

Web: [www.jjay.cuny.edu/academics/592.php](http://www.jjay.cuny.edu/academics/592.php)

*(check our website regularly for updates!)*

Center Hours:

Monday – Thursday, 10:00 a.m. to 8:00 p.m.

Thursday & Friday, 10:00 a.m. to 5:00 p.m.

## What can you do in the MSRC?

- Get free tutoring for your math and science courses. To schedule appointments, call or stop by the center
- Use a textbook, DVD, molecular model, or other item from our resource library
- Use a computer. Our computer lab has internet access, a network printer, and a range of general and discipline-specific software
- Study by yourself or with your friends

Tutoring is available for: BIO101 BIO102 BIO103 BIO104 BIO315 CHE101 CHE102 CHE103 CHE104 CHE201 CHE202 CHE220 CHE315 CHE320 CHE321 MAT104 MAT105 MAT108 MAT141 MAT241 MAT242 MAT301 NSC107 PHY101 PHY102 PHY203 PHY204 TOX313



Academic advisement is available to all Forensic Science students. It is recommended that you see an advisor at least once during the freshmen year, and again at the end of the sophomore year, to review your program plan for studying Forensic Science at John Jay College.

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