



CAREERS IN CHEMISTRY:  
FORENSIC SCIENCE AND  
ENVIRONMENTAL CHEMISTRY



## **What is Forensic Science?**

Forensic science is the application of the natural sciences to the analysis of evidence related to a crime. This includes many sub-disciplines, from analysis of trace evidence to DNA analysis to toxicology.

## **Your Path to a Career in Forensic Science**

Brooklyn College does not offer a degree in forensic science *per se*, but can set you on a path to a career in the field. Many schools offer Masters programs in Forensic Science, and students possessing an undergraduate degree in Chemistry are strong applicants for these programs.

The John Jay College of Criminal Justice lists the following courses as requirements for admission to its Master's of Forensic Science program: A minimum of one year of general chemistry, one year of organic chemistry, one year of calculus, one year of physics, one semester of biochemistry, one semester of physical chemistry and one semester of statistics. These requirements typify those for other Master's programs.

## **Planning Your Studies**

With the proper choice of elective courses, the BS in Chemistry supplies virtually all of the coursework you will need to be a strong applicant for a program in Forensic Science. Additional information on Forensic Science, including recommended elective courses, is available at the Chemistry Department office (359 NE, ask for the "Careers in Chemistry" folder), or from the departmental advisor (see back page).

**Courses required for both a BS in Chemistry and admission to a Forensic Science program:** 1 yr General Chemistry (Chem 1100 or 1050/2050 & 2100); 1 yr Organic Chemistry (Chem 3511/12,3521/22); 1 sem Physical Chemistry (Chem 4610); 1 yr Calculus (Math 1201,1206); 1 yr Physics (Phys 1100 & 2100), Biochemistry (Chem 4570)\*

**Additional requirements for a BS in Chemistry :** 1Analytical Chemistry (Chem 3410); Physical Chemistry (Chem 4620); Calculus (Math 2201); Intro. to Programming (CIS 1110) + 4 elective credits

**Additional requirements for admission to a Forensic Science Program:**  
One statistics course (many alternatives available at BC).

\*This counts as an elective for Chemistry.

## **What is Environmental Chemistry?**

Environmental Chemistry is the study of the fate of chemicals in the environment: How they are released, what biological and geological processes fix or disperse them, and what processes transform and degrade them. Most current study is of man-made chemicals, but environmental chemists are playing an increasing role in understanding the behavior of plant- and animal-generated chemicals in the ecosystem.

Employment opportunities for environmental chemists are varied. Chemical manufacturing companies frequently hire environmental chemists to insure compliance with government regulations. Environmental chemists also work in government agencies (such as the U.S. Department of Agriculture and the Environmental Protection Agency), and in insurance, waste management and consulting firms.

## **Your Path to a Career in Environmental Chemistry**

Few institutions offer a bachelors degree in Environmental Chemistry, and most students specialize only after reaching the Master's and Doctoral levels. Students are therefore advised to pursue a Bachelor of Science degree in Chemistry to prepare for graduate school.

## **Planning Your Studies**

For a detailed list of the requirements for a Bachelor of Science degree, see the "The Chemistry Major" flyer or contact the undergraduate advisor for Chemistry (see back page). Preparation for a degree in Environmental Chemistry is primarily made in the choice of Chemistry electives, and in additional courses from other departments. Because of the importance of biological processes in the environment, students should also take a full year of introductory biology (Bio 1001 & 1002).

**Recommended advanced electives in Chemistry: Instrumental Analysis (Chem 3420); Biochemistry (Chem 4570 & 4581); and Inorganic Chemistry (Chem 4761)**

For additional information on Forensic Science see:

The American Academy of Applied Forensics

<http://www.cpcc.edu/AAAF/>

The Forensic Science Society

<http://www.forensic-science-society.org.uk>

### **Want more?**

The Department of Chemistry has a "Chemistry Careers" folder in the main office (359 NE). Stop by and ask to take a look!

"For my research program, we want students who have completed a rigorous undergraduate chemistry major with emphasis on analytical, inorganic, and environmental chemistry."

– William M. Landing, Professor of Environmental and Marine Chemistry, Florida State University

For additional information on Environmental Chemistry see:

The Society of Environmental Toxicology and

Chemistry (SETAC) <http://www.setac.org/>

The American Chemical Society Division of

Environmental Chemistry <http://www.envirofacs.org/>

### **To discuss a Chemistry Major:**

Contact the Chemistry Department

Voice: (718) 951-5458 Room 359NE

Ask to speak to the Department Advisor.