

WHAT CAN I DO WITH MY MAJOR IN

CHEMISTRY AND BIOCHEMISTRY

OVERVIEW OF MAJOR

The Department of Chemistry and Biochemistry at Concordia University offers the following undergraduate degrees in Science: BSc (Honours) in Chemistry, BSc (Honours) in Biochemistry, BSc with Specialization in Chemistry, BSc with Specialization in Biochemistry, BSc Major in Chemistry, BSc Major in Biochemistry and a Minor in Chemistry. At the graduate level the degrees offered include a MSc in Chemistry and PhD in Chemistry. The Co-operative program is offered to students who are enrolled in the BSc Honours or Specialization in Chemistry and Biochemistry. For the latest information on programs, go to the Department's Internet site at <http://chem.concordia.ca>.

Chemistry majors might be specialists or generalists and work in a wide variety of occupations and settings. Career paths include diverse fields such as research and development, teaching, quality control, chemical engineering, marketing, computational chemistry, regulatory affairs and science management. For those who wish to become research scientists or practicing researchers, graduate school will be necessary. The Ordre des chimistes du Québec (OCQ) has accredited the curricula of both the Honours in Chemistry and Biochemistry and Specializations in Biochemistry and Chemistry

EXAMPLES OF JOBS ACQUIRED BY CONCORDIA GRADUATES

The following job titles are representative of the types of entry-level positions for which Concordia University students are qualified for upon graduation. Note that the numbers following each job title refer to Canada's National Occupational Classification (NOC) code. For details on these titles go to <http://www5.hrsdc.gc.ca/NOC/>.

- Analytical Chemist (2112)
- Bio Analyst (4161, 2112)
- Brewery Technician (2211)
- Chemical Engineer (2134)
- Chemist (2112)
- Chemistry Intern (2112)
- Clinical Chemist (2112)
- Junior Chemist (2112)
- Junior Engineer (2134)
- Junior Research Associate (2112)
- Junior Sales Representative (6221, 6411)
- Lab Assistant (2211, 2112)
- Lab Technician (2211)
- Organic Chemist (2112)
- Patent Agent (4161)
- Project Leader
- Quality Assurance Inspector (2112, 2141, 2262)
- Research Assistant (4122)
- Scientist (2112)
- Technical Sales Representative (6221)
- Teacher (4131, 4141)

CELEBRATED CHEMISTRY & BIOCHEMISTRY MAJORS

Janet Reno. 1st Woman US Attorney General.

Howard Alper. Concordia Graduate. Best Known for Research of Catalysis.

Maude Lenora Menten. Canadian. Best Known for Work in Enzyme Kinetics.

Michael Smith. Canadian Biochemist. Nobel Prize for Work on Genetic Code.

Henry Taube. Canadian Chemist. Nobel Prize for Work in Inorganic Chemistry.

Marie Maynard Daly. 1st African American Woman to Receive a PhD in Chemistry.

John Charles Polanyi. Canadian. Nobel Prize for Contributions to Reaction Dynamics.

William Francis Giauque. Canadian. Nobel Prize for Work in Chemical Thermodynamics.

MORE JOB TITLES

Graduates commonly pursue occupations in science and technology working as chemists, chemical engineers, pharmacists, metallurgists, managers, technicians, scientists, research assistants and educators. Nontraditional careers which might be pursued are related to sales, marketing, the patent field, business development, information science, public policy, safety, computer science and technical communication. The titles below are not meant to be exhaustive but are representative of fields which chemistry majors pursue. Keep in mind that some occupations require further education (e.g., a higher degree, second degree, and diploma). Note that the numbers following each job title refer to Canada's National Occupational Classification (NOC) code.

For details on these titles go to <http://www5.hrsdc.gc.ca/NOC/>.

- Agricultural Chemist (2112)
- Assayer (2212)
- Atmospheric Chemist (2112)
- Biological Chemist (2112)
- Chemical Oceanographer (2113)
- Crime Lab Assistant (2211)
- Cytotechnologist (3211)
- Director, Customer Services (0621)
- Director of Business Development (0412)
- Entomologist (2121)
- Field Test Services Technician (2123, 2211)

- Food Chemist (2112)
- Forensic Chemist (2112)
- Health Technologist (2263, 2211)
- Hydrologist (2113)
- Industrial Chemist (2112)
- Journalist (5123)
- Librarian (5111)
- Materials Scientist (2115)
- Nuclear Chemist (2112, 2121)
- Patent Agent/Examiner (4161)
- Petroleum Chemist (2112)
- Pharmacist (3131)
- Pharmaceutical Chemist (2112)
- Physicist (2111)
- Polymer Engineer (2134)
- Product Tester (9465)
- Program Officer (4161)
- Research Scientist (2112)
- Risk Management Analyst (4162)
- Sales Representative (6221, 6411)
- Science Advisor (4161)
- Scientific Photographer (5221)
- Scientific Writer (5121)
- Service Representative (6411)
- Soil Chemist (2112)
- Tissue Technologist (3211, 2211)
- Underwater Technician (2211)
- University Professor (4121)
- Water Purification Chemist (2112)
- Water Scientist (2112)

POTENTIAL WORK SETTINGS

A large percent of graduates work in manufacturing firms such as those in the chemical manufacturing and hardware manufacturing industries. Others work for scientific research and development services, architectural services, government bodies, engineering services, educational institutions and scientific labs in public and private settings. Moreover, they work in industries such as oil and gas, pulp and paper, agriculture, biotechnology, food, pharmaceuticals, plastics and mineral. To research specific employers who hire graduates, there are many resources available in such locations as the Career Resource Centre, the Webster Library, Vanier Library and the Internet.

- Aerospace Industry
- Beverage Manufacturers
- Chemical Plants
- Construction Firms
- Disease Control Centres
- Electronics Firms
- Environmental Engineering Firms
- Environmental Management Agencies
- Food Processing Companies
- Forensic Laboratories

CON'T. – POTENTIAL WORK SETTINGS

- Glass Manufacturers
- Health and Human Services
- Manufacturing Industry
- Medical Labs
- Metallurgical Companies
- Military
- Nonprofit Organizations
- Nuclear Power Plants
- Nuclear Regulatory Agencies
- Paint Manufacturers
- Petroleum Refineries
- Pollution Control Commissions
- Research and Development Centers/Laboratories
- Rubber Processing Firms
- Soap and Detergent Manufacturers
- Specialty Chemical Companies
- Textile Firms
- Universities & Colleges
- Waste Treatment Plants

SKILLS AND CHARACTERISTICS

Perseverance, independence, curiosity, attention to detail, scientific ability, focus on quality control, troubleshooting and problem solving are among qualities sought after by employers. Other important qualities recommended for success in the field include good communication and interpersonal skills, logical thinking, objectivity, inventiveness, math ability and deductive reasoning. Finally, students will find the following skills, interests, values and other characteristics valuable for succeeding in the field.

- Ability to Analyze Statistical Data
- Ability to Meet Deadlines
- Ability to Work Independently
- Accuracy
- Active Learning
- Analytical Skills
- Computer Skills
- Creativity
- Critical Thinking
- Decision-Making Skills
- Enthusiasm for Laboratory Work
- Excellent Manual Dexterity
- Flexibility
- Inductive Reasoning
- Integrity
- Interest in Field Work
- Interest & Aptitude for Research
- Investigative
- Judgment
- Knowledge of Equipment Selection
- Observation and Imagination
- Oral Comprehension

- Organizational Skills
- Persuasion
- Reading Comprehension
- Respect of Confidentiality
- Responsibility
- Supervisory Skills
- Teamworking Skills
- Time Management Ability
- Written Expression

PROFESSIONAL ASSOCIATION AND OTHER LINKS

Making wise career decisions requires exploring your field. A multitude of Internet sites and other resources will help you do this to the best of your ability. Professional association sites, in particular, are very useful for their career descriptions and job hunting tips. Moreover, these authoritative sites frequently provide links to Internet sites which announce job openings and list potential employers. Several recommended sites are included below.

CANADIAN

The Chemical Institute of Canada (CIC)

<http://www.cheminst.ca/>

Like many professional organizations, the CIC offers a variety of resources of interest to new graduates. Click on Career to start exploring. Learn about opportunities for networking with potential employers by clicking on Conferences.

Canadian Society for Molecular Biosciences (CSMB)

<http://www.csmb-scbm.ca>

Explore Student Activities for funding, career fairs as well as opportunities to display research. Click on Jobs to obtain current job advertisements and Links to find chemistry programs by province.

Canadian Society of Clinical Chemists/ La Société Canadienne des Clinico-Chimistes (CSCC/SCCC)

<http://www.csccl.ca/>

Represents Canadian clinical biochemists. Try the Chemist Library for a listing of useful Search Engines, publications and websites. Uncover what the Society offers with respect to training, financial aid, job postings, professional development and certification services.

Society for Canadian Women in Science and Technology (SCWIST)

<http://www.scwist.ca/>

Aims to empower women in science and technology. The Immigrating Women in Science and Technology Program was created to support immigrating professional women. Students might consider volunteer work with SCWIST to network with potential employers. Newsletters provide numerous articles for keeping up with trends in the field.

Society of Environmental Toxicology and Chemistry (SETAC)

<http://www.setac.org/>

Like many professional organizations, SETAC offers a substantial discount for student members. Explore Get Involved and Meetings and Events for opportunities to network and keep informed. Students might be interested in the Career Center's job vacancies or listings of graduate programs.

INTERNATIONAL

American Association for Clinical Chemistry

<http://www.aacc.org/Pages/default.aspx>

The Resource Centers section of the website provides career-related information and a job bank. On the site also learn about upcoming events, publications, training and trends in the field.

American Chemical Society

<http://www.acs.org>

Provides much useful information for students and new graduates. Click on Careers to find salary surveys, profiles of chemists at work, detailed career descriptions and valuable career advice.

The American Society for Biochemistry and Molecular Biology (ASBMB)

<http://www.asbmb.org/>

Promotes the science of biochemistry and molecular biology. Careers & Education provides a job board and assistance for students considering graduate study. Career Insights will help students learn about occupations from people working in the field.

Royal Society of Chemistry (RSC)

<http://www.rsc.org/>

Jobs & Careers section of this British website has detailed information on career opportunities, career links, trends for the future and professional development.

CREATE YOUR AMAZING CAREER – CAREER RESOURCE CENTRE TITLES

For those who need more help with their career and educational planning, the Career Resource Centre (CRC) offers books, pamphlets, DVDs and recommended Internet sites. It is located in the Hall Building, H-440, at 1455 de Maisonneuve Blvd. West. The following titles are just a few of the titles available in the CRC.

- The Academic Job Search Handbook
- At the Helm: A Laboratory Navigator
- Canadian Biotechnology Industry Guide
- Career Opportunities in Forensics
- Career Opportunities in Science
- Careers in Chemistry & Biochemistry Panel Discussion – DVD
- Careers in Government Panel Discussion – DVD
- Careers in Health Care
- Careers in the Pharmaceutical Industry Panel Discussion - DVD
- Field Guide for Science Writers
- Great Jobs for Chemistry Majors
- How to Succeed As a Scientist
- Medical and Pharmaceutical Sales: How to Land the Job of Your Dreams
- Nontraditional Careers for Chemists
- Opportunities in Chemistry Careers
- Opportunities in Environmental Careers
- Resumes for Science Careers
- So You Want to Be a Professor?