

## Why Obtain a Bachelor's Degree Certified to the American Chemical Society?

ACS-approved programs in chemistry offer the option of an ACS-certified degree track. An institution with an ACS-approved program in chemistry is committed to providing you with a broadly based and intellectually challenging experience in chemistry. The ACS Committee on Professional Training (CPT) carefully evaluates a chemistry department's program with respect to its breadth and depth, the qualifications of the chemistry faculty, the adequacy of the facilities, condition of instrumentation, access to current chemical literature, and opportunities for a meaningful research experience. An academic institution whose chemistry department meets the guidelines for ACS approval is placed on a nationally recognized list of approved chemistry programs. The object of the ACS approval and certification process is to encourage institutions to develop and maintain a high quality program of instruction in chemistry.

So why should you pursue the ACS-certified degree among the different degree tracks that may be available at your institution?

To be successful, a professional chemist requires a broad base of both scientific knowledge and professional skills. The guidelines for a certified bachelor's degree, as defined by CPT (available at [www.acs.org/cpt](http://www.acs.org/cpt)), *were developed specifically to prepare students for success in a broad array of careers*. Independent of whether you intend to move into an industrial position, pursue graduate study in a chemical field, or enter into another professional career track that requires rigorous scientific training, you will benefit from being able to build on a strong background including chemical knowledge, laboratory competency and safe laboratory practices, oral and written communication skills, familiarity with the chemical literature, and experience with working both independently and as part of a team.

Knowledge of chemical content is the cornerstone of an undergraduate education in chemistry, and the ACS *requirements focus on breadth and depth of chemical knowledge*. A certified degree covers the breadth of the chemical sub-disciplines by requiring the equivalent of one foundation course in each of analytical, biological, inorganic, organic and physical chemistry. In addition, two semesters each of introductory courses in mathematics and physics are required. A certified degree also requires the completion of four in-depth chemistry courses. *There is flexibility in selecting courses to meet the in-depth requirements*, allowing a selection of courses designed to prepare you for a range of post-graduate careers. The principles governing large scale chemical systems, including macromolecular, supramolecular, mesoscale and nanoscale systems, must be covered in the certified degree, which recognizes the importance of such systems to contemporary scientific research.

Developing competence in the laboratory is a key factor in preparing for a successful career in chemistry. The certified degree requires at least 400 hours of hands-on laboratory experiences beyond general chemistry. These laboratories will broadly expose you to the primary fields of chemistry, including coverage in at least four of the five sub-disciplinary areas. You will learn the theory and operation of modern instruments, and use those instruments to solve real chemical problems. Participation in undergraduate research is encouraged and a research experience can be used to meet an in-depth course requirement and satisfy up to 180 of the 400 required laboratory hours.

Development of professional skills such as written and oral communication, searching and evaluating the chemical literature, information management, problem-solving, teamwork, and ethics, must be incorporated into the undergraduate certified degree experience. These skills are considered essential for effective performance as a scientific professional. The guidelines also promote student growth opportunities such as off campus internships



or international experiences. Recognizing and maintaining a safe laboratory environment is vital for all practicing chemists. *Safety is emphasized throughout the curriculum* associated with the certified degree.

Content knowledge gained through foundation and in-depth courses and the required laboratory experiences will provide you with the traditional competencies expected of a practicing chemist. The emphasis in the certified degree on the development of professional skills recognizes the importance of these elements in successful careers. The cross-disciplinary professional chemists behind the creation and evaluation of the ACS-certified chemistry degree requirements are confident that the students who complete this educational pathway will possess the skills and experience necessary to be successful in careers in chemistry and other professional positions.