CHEMISTRY MAJORS AT UT

The Department of Chemistry and Physics offers students a solid foundation in the five major areas of chemistry: analytical, biochemistry, inorganic, organic and physical. Research projects, publishing opportunities, internships and classes with both lecture and laboratory work give chemistry majors the theoretical knowledge and practical experience they need to enter the job market or graduate and professional schools. At UT chemistry majors get individualized attention, working one-on-one with a faculty adviser who specializes in the student’s area of interest and provides guidance on choosing the right course of study to achieve his or her career goals.

B.S. and B.A. in Chemistry

Students interested in eventually pursuing graduate studies in chemistry should consider the Bachelor of Science in Chemistry. While any of the degrees offered by the department provides the opportunity for professional school admission, the Bachelor of Arts in Chemistry, with fewer credit hours than the B.S. degree, allows students to explore other disciplines through electives, providing the well-rounded educational experience professional schools seek.

B.S. and B.A. in Biochemistry

The Bachelor of Science in Biochemistry is ideal for students interested in graduate study in biochemistry and molecular biology. As with the chemistry B.A., the Bachelor of Arts in Biochemistry is designed for pre-professional students and requires fewer major courses. Biochemistry students have research opportunities in areas such as design of enzyme inhibitors, protein chemistry, bio-organic reaction mechanisms, biosensor development and tumorigenesis.

The Bachelor of Science in Forensic Science

Preparing students for careers in forensic chemistry and toxicology, the B.S. in Forensic Science usually leads to jobs in local, state or federal crime laboratories or law enforcement agencies, such as the FDA, EPA and OSHA. It’s also a good option for those interested in professional or graduate school. Students completing the program also will be awarded a minor in criminology.

Bachelor of Science in Chemistry (or Biochemistry)/MBA

The joint degree program is designed to develop scientists who can serve as managers, group leaders and analysts in chemical, pharmaceutical, biotechnology, medical diagnostic and investment companies. Program participants are awarded a Bachelor of Science degree in either chemistry or biochemistry and a Master of Business Administration.
College of Natural and Health Sciences

Chemistry and Physics

Student Research

UT’s Department of Chemistry and Physics is committed to providing research opportunities to undergraduates. Students assist with ongoing faculty projects or pursue their own independent work under the guidance of faculty. They learn such things as how to apply the scientific method by generating hypotheses, designing and conducting experiments, and interpreting empirical data. They not only receive academic credit, but many have presented their findings in scientific publications and at international and national conferences. Research opportunities include areas such as environmental analysis, atmospheric chemistry, marine nutrient analysis, protein chemistry, organic reaction mechanisms, electroanalysis and biosensor development.

Faculty

Chemistry and physics faculty members are esteemed scientists enthusiastic about sharing their knowledge and passion for their field of expertise with their students. Faculty projects include:

- Dr. Scott E. Allen specializes in working at the interface of chemistry and biology. His emphasis is on the application of synthetic chemistry to biologically related problems.

- Dr. C. Eric Ballard's interest's include discovering new methods for the preparation of organic compounds, in particular new reactions applying green chemistry (perform chemical reactions more efficiently with safer reagents to generate less waste).

- Dr. Stephen M. Burroughs focuses on the geology and physics of the oceans and non-linear processes in geophysics. His current research interest is the application of scaling laws to geophysical processes and models that link observed scaling behavior to fractal geometry.

- Dr. L. Michael Carastro’s research has focused on the molecular etiology of human cancers, including the molecular mechanisms that maintain cellular DNA integrity and regulate gene expression.

- Dr. Ethan A. N. Deneault is interested developing models that will accurately describe the condensation of presolar grains (found within carbonaceous chondrites, a subclass of primitive meteorites) within the ejecta of supernovae.

- Dr. Joseph P. Laurino’s two main areas of research are biotechnology in medicine and the biochemistry underlying diabetic cardiomyopathy. A recent project involves developing novel “platforms” for medical diagnostic tests using unique time-controlled release parameters.

Facilities

Facilities on campus include a DNA sequencer, electrophoretic gel imaging and documentation system, a Nanodrop Spectrophotometer, NMR, ICP-AES, GC/MS, and LC/MS/MS.

Recent Research

Michelle Norako and Steven A. Hendrix, “Analysis of Florida West Shelf Seawater for NO2- and NO3- by Vanadium (III) Reduction with Chemiluminescence Detection,” UT Department of Chemistry and Physics.

Robab G. Dehkharghani and C. Eric Ballard, “Lewis Acid-Catalyzed Alkylation of 4,5,6,7-Tetrahydroindole: A Possible Route to 2-Substituted Indoles,” poster presented at the 235th ACS National Meeting, April 6-10, 2008, CHED-663.

Student and Professional Associations

- American Chemistry Society
- Student Affiliates of the American Chemistry Society
- Alpha Epsilon Delta (Skull and Bones)
- American Society for Biochemistry and Molecular Biology
- American Society of Forensic Scientists

More on the Web

Visit www.ut.edu/colleges for more information about the College of Natural and Health Sciences and its departments, including:

- Biology
- Chemistry and Physics
- Exercise Science and Sports Studies
- Nursing

About UT

The University of Tampa is a private, residential university located on the riverfront in downtown Tampa. Known for academic excellence, personal attention and real-world experience in its undergraduate and graduate programs, UT serves almost 6,000 students from 50 states and approximately 100 countries.

OFFICE OF ADMISSIONS | 401 W. Kennedy Blvd. | Tampa FL 33606-1490
(813) 253-6211 | Fax (813) 254-4955 | admissions@ut.edu | www.ut.edu

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