

# Department of Chemistry

## Dr. Charles R. Thomas, Chair

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## Faculty

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## Mission

The Department of Chemistry at the University of Tennessee at Martin has a three-fold teaching mission: first, to provide basic instruction to all students at the university in the concepts and methods of this central experimental science within the framework of a traditional liberal education designed to prepare the individual for productive citizenship in the modern world; second, to provide further instruction in basic science as a foundation for those students wishing to pursue professional studies in medicine and the related health sciences; and, third, to provide broadly based opportunities for advanced training for students who wish to pursue careers in chemistry or related professions either upon completion of a bachelor's degree or following additional advanced study. Faculty are committed to mentoring students and to advancing the professions of chemistry and education through a full range of scholarly activities and service to both the campus and community.

The traditional Bachelor of Science degree with a major in chemistry and a minor in a second area (biology, mathematics, physics, geosciences, psychology, etc.) provides an excellent background for students planning careers in medicine or one of the other health sciences, in the emerging field of environmental sciences, or in virtually any technically based area. The Bachelor of Science in Chemistry degree, designed to follow the guidelines and recommendations set forth by the American Chemical Society for a professional degree program in chemistry at the undergraduate level and fully accredited by the ACS, allows students to concentrate their studies in chemistry and mathematics. It is recommended primarily for students with a career interest in chemistry or for students who plan to pursue graduate study in science. Both programs provide a balance between theory and lab experience. The department is well equipped with modern chemical instrumentation. Beginning in the sophomore year, students have direct access to and obtain considerable first-hand experience in the use of all of the instrumentation within the department. Research participation by undergraduates is encouraged.

## Student Organizations

**The University of Tennessee at Martin chapter of the Student Affiliates of the American Chemical Society** offers students a varied program of projects, seminars, plant tours, films and other activities. In each year since 1977 the UT Martin SAACS chapter has been designated an "Outstanding Chapter" by the American Chemical Society, a record unmatched by any other chapter among the over 900 nationwide.

## Departmental Awards/Scholarships

**Norman and Ruby Campbell Scholarship Award** of \$1,000 is awarded annually to a returning student or students majoring in chemistry. Dr. Norman Campbell served UT Martin for many years as professor of chemistry, head of the physical sciences division, dean of instruction and vice chancellor for academic affairs.

The scholarship was established by his family to honor him and his wife, Ruby. The recipient is selected by the faculty of the Department of Chemistry.

**Roseman Family Scholarship** of \$1,200 is given to a freshman from West Tennessee who is a pre-med major within the chemistry department. The selection is made by the faculty of the Department of Chemistry.

**Chemistry Department Award** is a cash amount given to an outstanding senior(s) chemistry major. The selection is made by the faculty of the Department of Chemistry.

**Lower-Division Chemistry Award** is given to an outstanding student or students in general chemistry. The award is a cash amount and a copy of the *Handbook of Chemistry and Physics*. The selection is made by the faculty of the Department of Chemistry.

## Cooperative Education Program in Chemistry

The five-year Cooperative Education Program, available to students pursuing either degree program in chemistry, offers the student valuable professional experience as preparation for a permanent position or for admission to graduate school as well as a source of income to help finance college expenses. Qualified students admitted to the program alternate semesters at the university with semesters of work. Application for admission should be made during the freshman year. Further information may be obtained by contacting the Department of Chemistry or the College of Engineering and Natural Sciences.

## Chemistry Major

**B.S. (6310) Curriculum.** Chemistry 121-122 and Chemistry 320 are prerequisites to a major which consists of the following courses: Chemistry 341, 342, 351 or 352, 359, and eight additional hours of upper-division chemistry or biochemistry. Mathematics 251-252 and Physics 211-212 or Physics 220-221 are also required. Majors in chemistry must complete a minor or a second major and all general education requirements for the B.S. degree. (See Undergraduate Degrees and Specialized Programs section of catalog.)

## B.S. in Chemistry

**B.S. in Chemistry (6320) Curriculum** (ACS approved major). This curriculum is designed to follow the guidelines and recommendations set forth by the American Chemical Society for a professional degree program in chemistry at the undergraduate level. The program is fully accredited by the American Chemical Society. Specific course requirements are outlined below. Students fulfilling these requirements will also satisfy the university-wide general education requirements. No minor is required.

### I. General Education (30-35 hours)

English 110 or 111 and 112, Communications 230 .....	9-10
Complete two courses representing two areas chosen from Economics 201, 202; Honors 112; Philosophy 160; Political Science 210; Psychology 110, 120; Sociology 201.....	6
Complete three courses representing at least two different areas chosen from English 250, 251, 260, 261, 270, 271; Geography 151, 152, 202; History 121, 122, 201, 202; Honors 111; Philosophy 110, 120.....	9
Complete 122 or a higher-numbered course in any foreign language excluding culture courses taught in English.....	3-8
Complete one course chosen from Art 110; Art History 210, 211; Music 111, 112 .....	3

### II. Chemistry (43 hours)

Chemistry 121, 122, 320, 341, 342, 351, 352, 359, 410, 420, 460; Biochemistry 411 and one other course in chemistry or biochemistry numbered 400 or above.

**III. Physics (8 hours)**

Physics 220, 221

**IV. Mathematics (18 hours)**

Mathematics 251, 252, 310, 320, 330

**A total of 120 hours are required for the degree. A maximum of 50 hours of chemistry may be counted toward the 120 hours required for the degree.**

## Chemistry Minor

Chemistry 121, 122 and Chemistry 320 are prerequisites to a minor, which consists of an additional 11 hours of upper-division chemistry or biochemistry.

## Courses Offered by Department of Chemistry

Biochemistry 411 (611) Cellular and Comparative Biochemistry (F)  
Biochemistry 412 (612) Cellular and Comparative Biochemistry (Sp)  
Biochemistry 419 (619) Biochemistry Laboratory (F)  
Chemistry 111 Introduction to Chemistry I: General and Inorganic Chemistry (F, Sp)  
Chemistry 112 Introduction to Chemistry II: Organic and Biochemistry (F, Sp)  
Chemistry 121-122 General Chemistry (F, Sp)  
Chemistry 122H Honors General Chemistry II (Sp)  
Chemistry 310 Chemistry (F)  
Chemistry 319 Organic and Biochemistry Laboratory (F)  
Chemistry 320 (520) Quantitative Analysis (F, Sp)  
Chemistry 341-342 (541-542) Organic Chemistry (F, Sp)  
Chemistry 350 Organic Chemistry of Drugs (F-even)  
Chemistry 351 (551) Physical Chemistry (F)  
Chemistry 352 (552) Physical Chemistry (Sp)  
Chemistry 359 (559) Physical Chemistry Laboratory (Sp)  
Chemistry 365 Green Chemistry and the Environment (Sp-even)  
Chemistry 390 Internship in Chemistry (as needed)  
Chemistry 410 (610) Physical Inorganic Chemistry (F)  
Chemistry 420 (620) Analytical Methods (Sp)  
Chemistry 430 (630) Spectrometric Methods (Sp-odd)  
Chemistry 440 (640) Polymer Chemistry (F-odd)  
Chemistry 450 (650) Advanced Physical Chemistry (as needed)  
Chemistry 455 (655) Applied Nuclear Chemistry (Sp-odd)  
Chemistry 460 (660) Advanced Synthesis (Sp-even)  
Chemistry 480 Special Topics (as needed)  
Chemistry 490 Research in Chemistry (as needed)  
Chemistry 700 Directed Studies in Chemistry (as needed)  
Chemistry 710 Selected Topics in Chemistry (as needed)

*Complete course descriptions can be found in the Course Description section of the catalog.*