

Department of BOTANY

<http://fp.bio.utk.edu/botany>

Professors

E. Schilling (Head), Ph.D. Indiana; J. Caponetti, Ph.D. Harvard; L. Hickok, Ph.D. Massachusetts; K. Hughes, Ph.D. Utah; B. Mullin, Ph.D. North Carolina State; R. Petersen (Distinguished Professor), Ph.D. Columbia; O. Schwarz, Ph.D. North Carolina State

Associate Professors

M. Pigliucci, Ph.D. Connecticut; D. Smith, Ph.D. Tennessee; A. von Arnim, Ph.D. East Anglia, United Kingdom; B.E. Wofford (Curator of Herbarium), Ph.D. Tennessee

Assistant Professors

A. Nebenfuhr, Ph.D. Oregon State; R. Small, Ph.D. Iowa State

Lecturer

K. McFarland, Ph.D. Tennessee

The Plant Biology concentration of the Biological Sciences major is offered by the Department of Botany and is designed to provide students with exposure to the broad range of subdisciplines within the plant sciences from the organismal to the molecular, including exposure to both field- and laboratory-based learning experiences. Students within the Plant Biology concentration are encouraged to become involved in ongoing faculty research projects within the department in the areas of floristics, systematics, physiology, genetics, molecular and cellular biology, ecology, and population and evolutionary biology.

Students wishing to emphasize study in this area elect to major in Biological Sciences with a concentration in Plant Biology. See the description of the major and concentration under "Division of Biology" for requirements.

Department of CHEMISTRY

<http://www.chem.utk.edu>

Professors

M. Sepaniak (Head), Ph.D. Iowa State; J. Adcock, Ph.D. Texas; D. Baker, Ph.D. Ohio State; C. Barnes, Ph.D. Stanford; J. Bartmess, Ph.D. Northwestern; J. Chambers, Ph.D. Kansas; R. Compton, Ph.D. Tennessee; K. Cook, Ph.D. Wisconsin; T. Dunning, Jr. (Distinguished Scientist, Science Alliance Center of Excellence), Ph.D. California Institute of Technology; C. Feigerle, Ph.D. Colorado; G. Guiochon (Distinguished Scientist, Science Alliance Center of Excellence), Ph.D. Université de Paris (France); G. Kabalka (Robert H. Cole Professor, Alumni Distinguished Service Professor), Ph.D. Purdue; J. Kovac, Ph.D. Yale; J. Larese, Ph.D. Wesleyan; L. Magid, Ph.D. Tennessee; R. Magid, Ph.D. Yale; J. Mays (Distinguished Scientist, Science Alliance Center of Excellence), Ph.D. Akron; R. Pagni, Ph.D. Wisconsin; G. Schweitzer (Alumni Distinguished Service Professor), Ph.D. Illinois; T. Williams (Alumni Distinguished Service Professor), Ph.D. London (England); C. Woods, III, Ph.D. North Carolina State; B. Wunderlich (Distinguished Scientist), Ph.D. Northwestern; Z. Xue, Ph.D. UCLA

Associate Professors

M. Dadmun, Ph.D. Massachusetts; R. Hinde, Ph.D. Chicago; J. Musfeldt, Ph.D. Florida; F. Schell, Ph.D. Indiana

Assistant Professors

S.D. Gilman, Ph.D. Penn State; J.F.C. Turner, Ph.D. Oxford; D.G.J. Young, Ph.D. Ohio State; X. Zhang, Ph.D. Pennsylvania; B. Zhao, Ph.D. Akron

The Department of Chemistry presents to the next generation of chemists and chemically literate citizens an integrated program of teaching and research that will prepare them to respond responsibly to current and future national needs. To satisfy our diverse clientele, the educational program is continually improved and includes research, classroom, and laboratory activities. In addition, we endeavor to maintain local responsibilities in support of the University's mission for public service.

Placement in General Chemistry Sequences

The sequences which meet all of the requirements of a year of General Chemistry and which serve as prerequisite for upper-division courses are 120-130 and 128-138; chemistry majors are strongly urged to take the latter sequence. Courses 100 and 110 emphasize organic and biochemistry, and may not be used as prerequisite for other chemistry courses. Chemistry 150 and 160 are designed to increase the chemistry literacy and consumer knowledge of students and may not be used as prerequisites for any other chemistry course.

It is possible to move from one sequence to another if permission for substitution is obtained in advance. For example, a student who finds a need to complete the 120-130 series after having completed 100 may substitute 100 for 120 with approval of the Department of Chemistry and may then take 130. Credit may be received for only one of the courses 100, 120, or 128.

In any chemistry course above the freshman level which has Chemistry 130 as a prerequisite, 110 may be used as a prerequisite with approval of the Department of Chemistry.

Chemistry 128-138 is an honors course designed for the student who has already made considerable progress in science. Class size is limited to promote faculty-student interaction. Selection is based on ACT scores, high school chemistry grade, and, if necessary, performance on a placement examination to be given during the first class meeting. A student receiving a passing grade below B in 128 will complete the year's work by taking 130.

Beginning students who have had high school chemistry and who have had additional experience (e.g. summer institute study, special research projects, home laboratory) are invited to apply during the summer to the head of the department for permission to take a proficiency examination in one or more semesters of general chemistry. If a satisfactory grade is made on the examination, credit will be allowed for the semester (or course) for which the exam was taken. The Department of Chemistry gives credit in general chemistry to students who present satisfactory scores on the Chemistry Advanced Placement Examination.

Cooperative Program

A cooperative program is available to students who are Chemistry majors. After the freshman year, the student alternates a semester in school with a semester in a job in the chemical industry. The program normally requires five years and involves

a total of four work semesters and eight school semesters. Students are required to have at least a 2.5 average to enter and remain in the program. Some opportunity exists for students to enter the program later than the end of the freshman year. Interested students should make application to the head of the department at least one semester in advance of the beginning of the first work period. Further information will be supplied on request.

CHEMISTRY MAJOR

Students who desire to major in chemistry may select from either of two courses of study: Bachelor of Science or Bachelor of Science in Chemistry.

Bachelor of Science in Chemistry

The Bachelor of Science in Chemistry is approved by the Committee on Professional Training of the American Chemical Society. It is designed to train students to go directly into positions in the chemical industry or to enter graduate study leading to positions in research and college teaching. A student in the Bachelor of Science in Chemistry program should, at the earliest opportunity, ask the Arts and Sciences Advising Center for assignment of a faculty advisor in the Department of Chemistry. For further information, contact the Head of Department of Chemistry, 552 Buehler Hall.

Requirements for the Bachelor of Science in Chemistry • Chemistry Major

Freshman	Hours	Credit
Chemistry 120-130 or (preferably) 128-138	8	8
Mathematics 141-142	8	8
English Composition	6	6
¹ Foreign Language (intermediate level sequence)	6-10	6-10
² Distribution	3	3
Sophomore		
Chemistry 240	2	2
Chemistry 230	3	3
Chemistry 350-360	6	6
Chemistry 369	2	2
Mathematics 241 and either 231 or 251	7	7
Physics 135-136 or 137-138	8-10	8-10
² Distribution	3	3
Junior		
Chemistry 310-320	6	6
Chemistry 319-329	3	3
Chemistry 473-483	6	6
Chemistry 479-489	4	4
² Distribution	9	9
³ Electives	3	3
Senior		
Chemistry 430	3	3
Chemistry 439	1	1
Chemistry 406	1	1
Chemistry 400	3	3
Biochemistry and Cellular and Molecular Biology 410 or 401	4	4
⁴ Chemistry Electives	3	3
² Distribution	9	9
³ Electives	9	9
Total		126-132

¹Preferably chosen from German, French, Russian or Japanese; the College of Arts and Sciences requires that a student demonstrate intermediate-level competence in whatever foreign language is chosen.

²The distribution requirements of the College of Arts and Sciences are satisfied by taking: Non-U. S. History (6 hours), Social Science (6 hours), Humanities (6 hours), and Upper Level Distribution (3 hours in either U.S. Studies or Foreign Studies and 3 hours Capstone Experience). The number of credit hours shown in each year of the curriculum are merely intended as guidelines.

³It is recommended that a portion of these elective hours be applied to advanced courses in biochemistry and cellular and molecular biology, mathematics, physics, or chemical, metallurgical, and polymer engineering.

⁴To be chosen from Chemistry 400, 401, 408, 420, 450, and 490.

Bachelor of Science

The Bachelor of Science degree is available to students who desire a more flexible program.

Prerequisites to the major are Chemistry 120-130 or 128-138 and Mathematics 141-142 or 151-152. Corequisite to the major is Physics 221-222, 135-136, or 137-138.

The major consists of Chemistry 240, 310, 319, 350-360, 369, 471-481 or 473-483, 479 and 10 hours of additional work in chemistry at the 200-level or above that includes at least one laboratory course or lecture/laboratory course; up to 6 hours of Biochemistry and Cellular and Molecular Biology 410-420 or 401-402 or Geology 460 may be applied to the 10-hour requirement.

For students planning careers in Chemistry, the recommended courses (from the list above) are Mathematics 141-142, Physics 135-136 or 137-138, and Chemistry 473-483; although not required, certain additional courses are strongly suggested for students planning to become chemists: Mathematics 241 and Chemistry 230, 320, 329, and 406. Because professional chemists need a reading knowledge of foreign languages, intermediate level competency should be acquired in German, French, Russian or Japanese. Students who are undecided about their career goals should consult the Head of the Department at the earliest opportunity. Unlike the Bachelor of Science in Chemistry, the regular Bachelor of Science degree is not approved by the Committee on Professional Training of the American Chemical Society.

Honors Concentration

Candidates for the Honors concentration in Chemistry must fulfill all of the requirements for either the Bachelor of Science in Chemistry or the regular Bachelor of Science degree and must also satisfy the following stipulations: they must complete with grades of C or better Mathematics 141-142, Physics 135-136 or 137-138, and Chemistry 473-483, 400, and 408; and they must have an overall university GPA of at least 3.0 with a GPA in chemistry courses of at least 3.3.

Minor in Chemistry

A minor in Chemistry consists of 15 hours of chemistry courses numbered 200 and above including 310, 319 (4 hours) and at least one of the following sequences: 350-360, 369 (8 hours); or 471-481, 479 (8 hours); or 473-483, 479 (8 hours).

Chinese

See Department of Modern Foreign Languages and Literatures.