

**CHEMISTRY, CONCENTRATION-PROFESSIONAL BIOCHEMISTRY ACADEMIC MAP:
DEGREE BS (120 CREDIT HOURS)**

This degree map is a semester---by---semester course schedule for students majoring in **Chemistry with a concentration in Professional Biochemistry**. The milestones listed to the right of each semester are designed to keep a student on track to graduate in four years. The schedule serves as a general guideline to help build a full schedule each semester. Milestones are courses and special requirements necessary for timely progress to complete a major. When one or more milestones are missed, students should consult with an academic advisor to determine if another degree path would be more suitable.

This program requires 120 hours for graduation and is designed for students pursuing a professional career in: medicine, dentistry, pharmacy, or veterinary medicine. Students following this curriculum will receive a minor in Biology. A minimum of 50 semester hours in Chemistry is required, 30 of which must be in 3000-and 4000-level courses. Honors sections of chemistry courses will also fulfill the degree requirements. Chemistry Majors are encouraged to take honors courses.

For admission into the upper-division programs of the Chemistry major, students must complete all of the requirements listed above under General Education Core. In addition, they must have removed all high school deficiencies, passed all required remedial/developmental courses, earned a cumulative grade point average of at least 2.0 on college-level coursework, and completed the Senior Exit Examination. In addition, they must have earned a grade of C or better in CHEM 1110 or 1112, 1111 or 1113, 1120 or 1122, 1121 or 1123, 2100, 2101, 2101 or 2012, 2011 or 2013, 2020 or 2022, and 2021, or 2023.

Tennessee State University recognizes that students have diverse learning, life, and professional experiences. The University provides opportunities for students to earn college credit toward the degree through a number of assessment options that evaluate their learning experiences. These paths are grouped under the category "Prior Learning Assessment" (PLA). Various means of earning PLA credit at TSU are the following: Advance Placement Program, American Council of Education (ACE) Military Credit, American Council on Education (ACE) other Assessed Credit, College Level Exam Program (CLEP), DSST Credit by Examination Program (includes DANTES Examination), Institutional Course Challenge Exams (Departmental Exams), International Baccalaureate Credit, Other Military Service, Portfolio Assessment. To learn more about PLA contact your academic advisor or the Office of Student Support Services for Adult and Distance Learners (615) 963-7001.

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Fall Schedule		Milestones
Semester 1	Hrs.	Semester 1
CHEM 1110/1111 OR 1112/1113	4	Pre-Requisite Course: Must be taken before 1120/1121 or 1122/1123. Minimum Grade of "C" Required
ENGL 1010	3	Pre-Requisite Course: Must be taken before ENGL 1020, and HIST 2010, HIST 2020, HIST 2030, HIST 2050, HIST 2060, HIST 2070, or HIST 2700; Minimum Grade "C" Required
MATH 1910	4	Pre-Requisite Course: Must be taken before CHEM 3210/3211
BIOL 1110/1111	4	
UNIV 1000*	1	
Total Hours	16	

*An Orientation course taken at another University does **NOT** meet this requirement. Students with less than 6 credit hours must take UNIV 1000 at TSU.

Spring Schedule		Milestones
Semester 2	Hrs.	Semester 2
CHEM 1120/1121 OR 1122/1123	4	Pre-Requisite Course: Must be taken before CHEM 2010/2011 or 2012/2013, CHEM 2100 / 2101, CHEM 3000; Minimum Grade of "C" Required.
ENGL 1020	3	Pre-Requisite Course: Must be taken before taking HIST 2010, HIST 2020, HIST 2030, HIST 2050, HIST 2060, HIST 2070, or HIST 2700; Minimum Grade "C" Required
BIOL 1120/1121	4	
COMM 2200	3	
Total Hours	14	

Fall Schedule		Milestones
Semester 3	Hrs.	Semester 3
CHEM 2010/2011 OR 2012/2013	4	Pre-Requisite Course: Must be taken before CHEM 2020/2021 or CHEM 2022/2023, CHEM 3410/3411; Minimum Grade of "C" required.
CHEM 2100/2101	4	Pre-Requisite Course: Must be taken before CHEM 4100, CHEM 4700/4701; Minimum Grade of "C" Required
ENGL Literature *	3	Minimum Grade of "C" Required
HIST 2010**	3	
Social/Behavioral Science***	3	
Total Hours	17	

*Courses within the range of ENGL 2012 through ENGL 2320 will meet this requirement.

**The Department recommends HIST 2010; however, HIST 2030, HIST 2050, HIST 2060, HIST 2070 or HIST 2700 satisfy this requirement.

***The following courses can meet the Social Science requirement: AFAS 2010, ANTH 2300, ECON 2010, GEOG 1010, HPSS 1510, POLI 1010, PSYC 2010, WMST 200 and URBS 2010. Students must remember not to duplicate course options from a previous semester.

Spring Schedule		Milestones
Semester 4	Hrs.	Semester 4
CHEM 2020/2021 or CHEM 2022/2023	4	Pre-Requisite Course: Must be taken before CHEM 3210, CHEM 4100. Minimum Grade "C" Required
Humanities*	6	
Social / Behavioral Science**	3	
HIST 2020***	3	
Total hours	16	

*Students must take 6 credit hours from the following list of approved general education Humanities courses: AREN 2310, ART, 1010, HIST 1000, THTR 1020, MUSC 1010, PHIL 1030, or RELS 2010.

**The following courses can meet the Social Science requirement AFAS 2010, ANTH 2300, ECON, 2010, GEOG 1010, HPSS 1510, POLI 1010 PSYC 2010, WMST 2000, and URBS 2010. Students must remember not to duplicate course option from a previous semester.

***The Department recommends HIST 2020; however, HIST 2030, HIST 2050, HIST 2060, HIST 2070 or HIST 2700 satisfy this requirement.

Fall Schedule		Milestones
Semester 5	Hrs.	Semester 5
		Students must have completed 63 hours and should be admitted into Upper Division with Chemistry Major.
CHEM 3210, 3211	4	Minimum Grade "C" Required
CHEM 3410, 3411	4	Pre-Requisite Course: Must be taken before CHEM 3420/3421; Minimum Grade "C" Required
PHYS 2010, 2011	4	
Total hours	12	

Spring Schedule		Milestones
Semester 6	Hrs.	Semester 6
CHEM 3220	3	Pre-Requisite Course: Must be taken before CHEM 4505, CHEM 4506, CHEM 4700, CHEM 4910, CHEM 4920; Minimum grade "C" required
CHEM 4100	2	Minimum Grade "C" Required
CHEM 3420/3421	4	Pre-Requisite Course: Must be taken before CHEM 4700/4701. Minimum Grade "C" Required
PHYS 2020/2021	4	
Total hours	13	

Fall Schedule		Milestones
Semester 7	Hrs.	Semester 7
CHEM 3000	3	Minimum Grade "C" Required
CHEM 4505	2	Minimum Grade "C" Required
CHEM 4910	1	Minimum Grade "C" Required
CHEM 4700/4701	4	Minimum Grade "C" Required
BIOL ELECTIVE 3000-4000 LEVEL	4	
ANY ELECTIVE 3000-4000 LEVEL	3	
Total hours	17	

Spring Schedule		Milestones
Semester 8	Hrs.	Semester 8
		Take Senior Exit Exam and Apply for Graduation
CHEM 4506	2	Minimum Grade "C" Required
CHEM 4920	1	Minimum Grade "C" Required
BIOL ELECTIVE 3000-4000 LEVEL	4	
ANY ELECTIVE 3000-4000 LEVEL*	8	
Total hours	15	

*Students may take course from ANY academic department on the 3000-4000 level, but preferably Chemistry courses should be selected.

Employment Information:

About 25% of students who major in chemistry work as chemists. Chemists develop products that we rely on each day. Without chemists, we wouldn't have clean water and medicines. Some of the fabrics that we wear wouldn't exist without chemists, and believe it or not, neither would many of the foods in our refrigerators. If you want to pursue a career where you can have an impact on the lives of people throughout the world, then a chemistry degree can provide the background that you need to do so. Not all graduates from chemistry programs go on to work as chemists, though. While many do work in a field closely related to chemistry, others choose to take a completely different path. Sales and teaching positions are among the most common career choices for those who pursue a career in an unrelated field. It's very common for chemistry majors to attend graduate school after they complete their undergraduate studies. These graduates make great candidates for medical school, optometry school, dental school, pharmacy school, and veterinary school. Since chemistry majors develop strong research skills, they are also successful in law school, and many go on to work as patent lawyers.

Representative Job Titles Related to this Major:

Chemist, quality control chemist, laboratory technician, technical sales representative, chemical and drug sales representative, consumer protection specialist, water quality analyst / technician, technical writer, aerosol development manager, quality assurance chemist, methods development chemist, process development chemist, organic mass spectrometrists, forensic lab analyst, pulp and paper chemist, paint formulation chemist, paper product developer, chemical information specialist, occupational health and safety officer, medical laboratory technician analytic chemist, associate chemist, research assistant, chemical safety officer, clinical technician, food and drug analyst, pollution controller, information analyst soil tester laboratory analyst chemical technologist assayer product tester, production chemist, lab coordinator, chemical analyst, pest control technician, textile chemist, occupational hygienist, geologist, color development specialist, environmental engineer, geochemist, industrial hygienist, teacher, crime lab analyst, dentist, medical technologist

Representative Employers:

Educational institutions, science museums, quality control laboratories, pharmaceutical/biotech., mineral and metal industries, hospital research laboratories, industrial laboratories, food and beverage companies, health protection branches, waterworks departments, hazardous waste management, chemical testing companies, research centers/institutes, cosmetic companies, utility companies, chemical distributors, hospitals, newspapers/magazines, oil companies, chemistry consulting firms, environmental consulting, pulp and paper industries, chemical laboratories, agricultural companies, professional chemical societies, textile manufacturers, police laboratories, chemical manufacturing, petroleum refineries, government, aerospace companies, technical librarian

International study is available for all TSU students and may include opportunities for internships or taking course work towards various minors. International study may have an impact on the academic map; therefore, it is important to consult with the academic advisor for this major before participating in an international Program opportunity. Students interested in study abroad opportunities should contact the Office of International Programs and consult with their academic advisor.

This map is not intended to be a contract, either expressed or implied, between the University and the students, but represents a flexible program of the current curriculum which may be altered from time to time to carry out the academic objectives of the University. TSU specifically reserves the right to change, delete or add to any MAP at any time within the student's period of study at the University.