• B.S. - CHEMISTRY (CHS) (CIP = 40.0501 - TRACK 1 OF 2)  
TOTAL DEGREE HOURS: 120

http://chemistry.usf.edu/undergraduate/degree/bs/  
The Bachelor of Science in Chemistry is designed for students wishing to continue with graduate training in chemistry and closely allied disciplines and the degree is certified by the American Chemical Society.  
The Bachelor of Science in Chemistry provides a firm foundation in all five disciplines of chemistry: organic, physical chemistry, inorganic, analytical and biochemistry. Students interested in research, the pursuit of an advanced degree, employment in the chemical industry, or who want to teach at the secondary education level may find this degree attractive. The curriculum for the B.S. degree in Chemistry meets the requirements for degree certification by the American Chemical Society.

STATE MANDATED COMMON COURSE PREREQUISITES  
Students should complete the following prerequisite courses listed below at the lower level prior to entering the university. These include two semesters each of General Chemistry lecture and lab, Organic Chemistry lecture and lab, Calculus, and General Physics lecture and lab. If these courses are not taken at the community college, they must be completed before the degree is granted. Unless stated otherwise, a grade of "C" is the minimum acceptable grade.  
CHM X045/CHM X045L General Chemistry I (with laboratory) or CHM 1040 and CHM 1041, or CHM 1045C  
CHM X046/ CHM X046L General Chemistry II or CHM 1046C  
MAC 2311 Calculus I or MAC 2281 Engineering Calculus I  
MAC 2312 Calculus II or MAC 2282 Engineering Calculus II  
CHM 2210/CHM 2210L Organic Chemistry I & Laboratory or CHM 2210C  
CHM 2211/CHM 2211L Organic Chemistry II & Laboratory or CHM 2211C  
PHY 2048/PHY 2048L Gen Physics I & Laboratory or PHY 2048C, or PHY 2053C or PHY 2053 and PHY 2053L  
PHY 2049/PHY 2049L Gen Physics II & Laboratory or PHY 2049C, or PHY 2054C or PHY 2054 and PHY 2054L

Required supporting courses for the major (20-16 credit hours)  
The following courses are prerequisite and supporting courses for this major. They are required for the major, but are not counted in the total hours for this major. The degree will not be awarded if these courses have not been taken by the end of the student’s final semester.  
MAC 2311 Calculus I and MAC 2312 Calculus II and MAC 2313 Calculus III  
or  
MAC 2281 Engineering Calculus I and MAC 2282 Engineering Calculus II and MAC 2283 Engineering Calculus III  
PHY 2048 General Physics I-Calculus Based and PHY 2048L General Physics I-Calculus Based Laboratory  
PHY 2049 General Physics II-Calculus Based and PHY 2049L General Physics II-Calculus Based Laboratory

REQUIREMENTS FOR THE MAJOR IN CHEMISTRY  
TOTAL MAJOR HOURS: 6056

Major requirements for the B.S. Degree:  
Major Core (50-54 hours)  
The required sequence of Chemistry courses should be started immediately in the freshman year; the mathematics and physics requirements should be completed before the junior year as preparation for CHM 4410 Physical Chemistry I (B.S. degree), a course which is to be taken in the third year. CHM 4410 is a prerequisite to other advanced courses required for the B.S. degree in chemistry. Students are recommended to complete CHM 3415C prior to their registration in CHM 4410.  
Students are required to complete 540 credits of degree applicable Chemistry coursework.  
CHM 2045 General Chemistry I  
CHM 2045L General Chemistry I Laboratory  
CHM 2046 General Chemistry II  
CHM 2046L General Chemistry II Laboratory  
CHM 2210 Organic Chemistry I  
CHM 2210L Organic Chemistry I Laboratory  
CHM 2211 Organic Chemistry II  
CHM 2211L Organic Chemistry II Laboratory  
BCH 4033 Advanced Biochemistry I  
BCH 3120C Elementary Analytical Chemistry  
CHM 3415 C Physical Chemistry Methods  
CHM 3610 Intermediate Inorganic Chemistry
CHM 3610L Intermediate Inorganic Chemistry Laboratory
CHM 4060 Use of Chemical Literature
CHM 4130C Methods of Instrumental Analysis
CHM 4131C Methods of Chemical Investigation II
CHM 4410 Physical Chemistry I
CHM 4410L Physical Chemistry Laboratory
CHM 4411 Physical Chemistry II
CHM 4611 Advanced Inorganic Chemistry

**Major Electives (6 hours)**

BSC 2010 Cellular Processes

and

One 3000-level Natural Science or Engineering course (PHY 3101, MAP 4302 suggested)

or

One 2000-level Natural Science course (BSC 2011, GLY 2010, GLY 2100, EVR 2001, CGS 2060, CGS 2100, EGN 2210)

Other suggested chemistry electives:

- CHM 4970 Undergraduate Research
- BCH 3023L Basic Biochemistry Laboratory
- CHM 4070 Historical Perspectives in Chemistry
- CHM 4413 Biophysical Chemistry
- CHM 4932 Selected Topics in Chemistry

Note: The content varies for the Selected Topics in Chemistry course.

**Free General Electives.** Courses over and above the required courses should be taken to complete a 120 hour program. Additional courses in computer programming, economics, management, engineering, statistics, writing, and other applied disciplines are strongly recommended to strengthen the degree for subsequent professional employment.

**Transfer Credit:** It is strongly recommended that students transferring from community/state colleges to the University of South Florida complete whole sequences of chemistry courses, such as general and organic chemistry, before they transfer. Even though courses may carry the same common course number, topics covered may vary significantly from school to school.

**D/F Policy:** The following three departments, the Department of Chemistry, the Department of Cell Biology, Microbiology and Molecular Biology and the Department of Integrative Biology have instituted a procedure to provide students with the best opportunity to progress toward their degree requirements.

Effective Fall 2009, the following D and/or F grade rules apply for students to continue in all of the following majors:

- Biomedical Sciences
- Biology (including the marine science concentration)
- Microbiology
- Chemistry (BA, BS)
- Interdisciplinary Natural Sciences (INS)
- Medical Technology and
- Pre-medical sciences students (PMS) who have not yet declared a major

All students entering USF for the first time, in Fall 2009 or later, who subsequently earn three (3) D and/or F grades in applicable USF science and math coursework for their major (i.e. Math, Biology, Chemistry and Physics) will be required to change their major to a major more appropriate to their goals and academic performance, and to a major that is not conferred by the Department of Chemistry, Department of Integrative Biology or Department of Cell Biology, Microbiology, and Molecular Biology.

All continuing USF students who entered USF prior to Fall 2009 and who have not earned any D or F grades in USF science and math coursework for their major (i.e. Math, Biology, Chemistry and Physics) before Fall 2009, will also be redirected after earning three (3) D and/or F grades in subsequent terms. Upon earning the 3rd D and/or F grade, students will be required to choose another major more appropriate to their goals and academic performance, and to one that is not conferred by the Department of Chemistry, Department of Integrative Biology or Department of Cell Biology, Microbiology, and Molecular Biology.

All continuing USF students who entered USF prior to Fall 2009 and who have earned one (1) or more D or F grades in USF science and math coursework for the major (i.e. Math, Biology, Chemistry and Physics) prior to Fall 2009, will be allowed to count all previous D/F grades as one (1) D/F grade. After Fall 2009, students who earn two (2) additional D and/or F grades (resulting in three (3) total D/F grades) in subsequent terms will be required to choose another major more appropriate to their goals and academic performance, and to one that is not conferred by the
Lab only courses are not counted towards the total number of D/F grades earned for the policy. Grade Forgiveness will NOT apply to the mandated requirement of changing majors.

If a student is in violation of the D/F policy, regardless of major, they will no longer be able to take any courses offered by the Department of Chemistry, Department of Integrative Biology or Department of Cell Biology, Microbiology, and Molecular Biology.

Grading Requirement
A grade of C or better is required for science and mathematics courses and each supporting course for the Major. All courses in any chemistry major must be taken with letter grade (A, B, C, D, F, I) except those courses which are graded S/U only.

Residency Requirement
Nine hours of upper-level chemistry courses must be completed at USF for the Bachelor of Arts in Chemistry and the Bachelor of Science in Chemistry degrees.

Research Opportunities
The Department of Chemistry offers the opportunity for students to participate in undergraduate research with Chemistry faculty. Students can apply for the Academic Research Experience for Undergraduates (REU) Program and find more information here: http://chemistry.usf.edu/undergraduate/reu/. Students who wish to enroll in an undergraduate research course with a Chemistry faculty member should consult with their academic advisor to understand how the credit will apply towards the degree requirements. If no credit is needed, students may be eligible to enroll in a 0 credit research course. These courses will not impact degree credits or GPA but will show on an official transcript and document the experience. The Academic Advisors in the Department of Chemistry, as well as the Office for Undergraduate Research, can assist students in understanding the various course options.

Advising Information
Department of Chemistry Advising: chemadvise@usf.edu or http://chemistry.usf.edu/advising/.