ACCELERATED BACHELOR OF SCIENCE IN BIOCHEMISTRY (ACS)/MASTER OF SCIENCE IN CHEMISTRY

This program will provide strong, qualified undergraduates an avenue to accelerate their time to the MS degree. The program allows undergraduates to begin taking graduate level courses when they have completed 90 credit hours toward their baccalaureate degree, but no undergraduate course may count toward the accelerated Master's degree. This program is also a financial and time saving degree plan.

Marketable Skills

Defined by the Texas Higher Education Coordinating Board's 60x30 Strategic Plan (https://reportcenter.highered.texas.gov/agency-publication/miscellaneous/thecb-60x30-strategic-plan/) as, "Those skills valued by employers that can be applied in a variety of work settings, including interpersonal, cognitive, and applied skills areas. These skills can be either primary or complementary to a major and are acquired by students through education, including curricular, co-curricular, and extracurricular activities."

This program will provide strong, qualified undergraduates an avenue to accelerate their time to the MS degree, which will benefit the student financially. Possessing a Master's degree in Chemistry will meet a job market that increasingly demands advanced education. Jobs for individuals with Master's degrees in Chemistry include positions in the private sector, such as the pharmaceutical industry, analysis labs, quality control, R&D, and the energy sector (both renewables and oil & gas) -- in addition to continuing graduate school toward a Ph.D. in chemistry or biochemistry whereby a Master's degree enhances admission chances in higher-ranking universities (often with a more attractive admission/scholarship package).

Admissions

Admission Requirements

To apply to the Accelerated Bachelor's to Master's program in Chemistry, students must:

- Be currently enrolled as a TWU Chemistry major.
- Have a minimum cumulative grade point average of 3.0 or higher.
- Have successfully completed a minimum of 72 but no more than 90 hours of coursework toward the bachelor's.
- Have a minimum of 12 hours remaining in chemistry courses toward the major.

How to Apply to the Accelerated Program

To apply, students must:

1. Receive approval from the Division Lead.
2. Once admitted to the Accelerated Program students must apply to the graduate M.S. in Chemistry program (https://twu.edu/chemistry-biochemistry/graduate-program/). Students cannot enroll in graduate-level coursework until accepted by the Graduate School.

Accelerated Graduate Program Policy Guidelines

Students may apply to the accelerated graduate degree program once they have attained advanced junior standing with at least 72 undergraduate semester credit hours (SCH). Upon admission to an accelerated program, students with senior standing (90 earned SCH) may enroll in graduate courses for credit. Approved courses will apply to both an undergraduate and a graduate degree.

Conditions

- Undergraduate students may enroll in no more than 6 SCH of graduate coursework in each semester or term.
- Minimal criteria for admission will include a cumulative undergraduate GPA of at least 3.0. The program may set higher GPA requirements as outlined on their TWU graduate program website at the time of graduate application.
- Once admitted to an accelerated program, students must maintain a 3.0 GPA throughout the remainder of their baccalaureate degree, or their admission to the accelerated graduate program may be revoked. Academic components may set additional requirements for their programs.

Graduate Application Process

All students must meet the University requirements as outlined in the Admission to the TWU Graduate School (http://catalog.twu.edu/graduate/graduate-school/admission-graduate-school/) section of the catalog.

This academic program may have additional graduate admission criteria that must also be completed as outlined on the graduate program's website.

Degree Requirements

Total Semester Credit Hours (SCH): 120

Major: 51 SCH

Program Code: BIOCHEM.BS.ACS.ACC **CIP Code:** 26.0202.00

Texas Core Curriculum

Texas Core Curriculum

Code	Title	SCHs
ENG 1013	Composition I	3
ENG 1023	Composition II	3
Mathematics		3
Life & Physical Sciences		6
Language, Philosophy, & Culture		3
Creative Arts		3
HIST 1013	History of the United States, 1492-1865	3
HIST 1023	History of the United States, 1865 to the Present	3
POLS 2013	U.S. National Government	3
POLS 2023	Texas Government	3
Social & Behavioral Sciences		3
CAO: Women's Studies		3
CAO: First Year Seminar, Wellness or Mathematics		3
Total SCHs		42

Courses Required for Major

Code	Title	SCHs
CHEM 1001	Horizons of Chemistry and Biochemistry I: Career Possibilities	1
CHEM 1101	Horizons of Chemistry and Biochemistry II: Current Applications	1
CHEM 1213 & CHEM 1211	Principles of Chemistry I and Principles of Chemistry Laboratory I	4
CHEM 1223 & CHEM 1221	Principles of Chemistry II and Principles of Chemistry Laboratory II	4
CHEM 2213 & CHEM 2211	Organic Chemistry I and Organic Chemistry Laboratory I	4
CHEM 3223 & CHEM 3221	Organic Chemistry II and Organic Chemistry Laboratory II	4
CHEM 3413 & CHEM 3411	Physical Chemistry I and Physical Chemistry Laboratory I	4
CHEM 3423 & CHEM 3421	Physical Chemistry II and Physical Chemistry Laboratory II	4
CHEM 3333 & CHEM 3331	Quantitative Chemical Analysis and Quantitative Chemical Analysis Laboratory	4
CHEM 3633 & CHEM 3632	Biochemistry I and Biochemistry I Laboratory	5
CHEM 3643	Biochemistry II	3
CHEM 4001	Research Presentations in Chemistry and Biochemistry	1
CHEM 4311	Instrumental Analysis Laboratory	1
CHEM 5323	Advanced Analytical Chemistry	3
CHEM 4511	Inorganic Chemistry Laboratory	1
CHEM 5523	Advanced Inorganic Chemistry	3
CHEM 4983	Undergraduate Research	3
CHEM 4991	Senior Thesis	1
Total SCHs		51

Departmental Requirements

Code	Title	SCHs
MATH 2014	Calculus I	4
MATH 2024	Calculus II	4
PHYS 2153 & PHYS 2151	General Physics I and General Physics Laboratory I	4
PHYS 2163 & PHYS 2161	General Physics II and General Physics Laboratory II	4
BIOL 1113 & BIOL 1111	Principles of Biology I and Principles of Biology I Laboratory	4
BIOL 1123 & BIOL 1121	Principles of Biology II and Principles of Biology II Laboratory	4
Upper Level BIOL/BACT/ZOOL		4
Total SCHs		28

Electives (Choose 3 SCH not already taken)

Code	Title	SCHs
CHEM 3713 & CHEM 3711	Environmental Chemistry I and Environmental Chemistry Laboratory I	4
CHEM 4981	Undergraduate Research	1
BACT 3113 & BACT 3111	General Microbiology and General Microbiology Laboratory	4
BIOL 4223 & BIOL 4221	Ecology and Ecology Laboratory	4
BIOL 4813 & BIOL 4811	Molecular and Cellular Biology: Gene Expression and Molecular and Cellular Biology: Gene Expression Laboratory	4
BIOL 4823 & BIOL 4821	Molecular and Cellular Biology: Genetics and Inheritance and Molecular and Cellular Biology: Genetics and Inheritance Laboratory	4
CHEM 5013	Advanced Physical Chemistry	3
CHEM 5213	Advanced Organic Chemistry	3
CHEM 5613	Advanced Biochemistry I	3
CHEM 5903	Special Topics	3

Plan of Study

First Year

Fall		TCCN	SCHs
CHEM 1001	Horizons of Chemistry and Biochemistry I: Career Possibilities		1
CHEM 1213 & CHEM 1211	Principles of Chemistry I and Principles of Chemistry Laboratory I		4
MATH 2014	Calculus I	MATH 2413	4
BIOL 1113 & BIOL 1111	Principles of Biology I and Principles of Biology I Laboratory	BIOL 1406 & BIOL 1106	4
UNIV 1231	Learning Frameworks: The First Year Experience	EDUC 1100, EDUC 1200, EDUC 1300	1
Wellness/Mathematics CAO Core			2
	SCHs		16
Spring		**TCCN**	
CHEM 1101	Horizons of Chemistry and Biochemistry II: Current Applications		1
CHEM 1223 & CHEM 1221	Principles of Chemistry II and Principles of Chemistry Laboratory II		4
MATH 2024	Calculus II	MATH 2414	4
BIOL 1113 & BIOL 1111	Principles of Biology I and Principles of Biology I Laboratory	BIOL 1406 & BIOL 1106	4
Multicultural Women's Studies CAO Core			3
	SCHs		16

Second Year

Fall		TCCN	
CHEM 2213 & CHEM 2211	Organic Chemistry I and Organic Chemistry Laboratory I	CHEM 2323 & CHEM 2123	4
PHYS 2153 & PHYS 2151	General Physics I and General Physics Laboratory I	PHYS 2325 & PHYS 2125	4
POLS 2013	U.S. National Government	GOVT 2305	3
ENG 1013	Composition I	ENGL 1301	3
	SCHs		14

Spring		**TCCN**	
CHEM 3223 & CHEM 3221	Organic Chemistry II and Organic Chemistry Laboratory II		4
PHYS 2163 & PHYS 2161	General Physics II and General Physics Laboratory II	PHYS 2326 & PHYS 2126	4
ENG 1023	Composition II	ENGL 1302	3
CHEM 3333 & CHEM 3331	Quantitative Chemical Analysis and Quantitative Chemical Analysis Laboratory		4
	SCHs		15
Third Year			
Fall		**TCCN**	
CHEM 3413 & CHEM 3411	Physical Chemistry I and Physical Chemistry Laboratory I		4
CHEM 3633 & CHEM 3632	Biochemistry I and Biochemistry I Laboratory		5
Elective			4
HIST 1013	History of the United States, 1492-1865	HIST 1301	3
	SCHs		16
Spring		**TCCN**	
CHEM 3423 & CHEM 3421	Physical Chemistry II and Physical Chemistry Laboratory II		4
CHEM 3643	Biochemistry II		3
Elective			6
	SCHs		13
Fourth Year			
Fall		**TCCN**	
CHEM 4983	Undergraduate Research		3
HIST 1023	History of the United States, 1865 to the Present	HIST 1302	3
CHEM 3643	Biochemistry II		3
POLS 2023	Texas Government	GOVT 2306	3
CHEM 5323 & CHEM 4311	Advanced Analytical Chemistry and Instrumental Analysis Laboratory		4
	SCHs		16
Spring		**TCCN**	
CHEM 4991	Senior Thesis		1
Language, Philosophy, & Culture Core			3
CHEM 4001	Research Presentations in Chemistry and Biochemistry		1
Social/Behavioral Science Core			3
Elective			3
Creative Arts Core Course			3
	SCHs		14
	Total SCHs:		120