ACCELERATED BACHELOR OF SCIENCE IN BIOLOGY/MASTER OF SCIENCE IN BIOLOGY

Web Site: https://twu.edu/biology/undergraduate-programs/bachelor-of-science-in-biology/

The purpose of this program is to provide exceptional undergraduate students in Biology a path toward accelerated completion of a master's degree in Biology. Students in the program will complete 12 graduate hours during their final 30 hours of undergraduate coursework that will count toward both their B.S. in Biology and M.S. in Biology degrees.

This is a competitive program, and students must submit an application and meet eligibility requirements during their junior year to be admitted to the program. Upon graduating with the B.S. in Biology, a student in the accelerated program must submit a formal application for admission to the M.S. in Biology program and meet all admissions requirements. Please see the Graduate Catalog for a complete list of degree requirements for the M.S. in Biology program (https://catalog.twu.edu/graduate/arts-sciences/biology/biology-ms/).

Marketable Skills

Marketable skills prepare students for success in a variety of professional settings. Developed through academic coursework, co-curricular engagement, and extracurricular involvement, these skills include communication, critical thinking, teamwork, ethical reasoning, adaptability, and digital literacy. Whether directly related to a student's major or serving as complementary strengths, marketable skills enhance career readiness and reflect TWU's commitment to producing graduates who are prepared to thrive in today's dynamic workforce.

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1. Effectively articulate ideas on biological concepts via written communications and oral presentations.
2. Demonstrate critical thinking by using logic and reasoning to interpret scientific results.
3. Ability to design and conduct properly controlled experiments using modern scientific instruments and methods.
4. Effectively propose potential technical solutions to modern biological problems or human health challenges.
5. Integrate scientific knowledge and professional business concepts, principles, and ethics in the biotechnology sector.
6. Work collaboratively as part of a team to perform, analyze, and present scientific results and/or research outcomes.
7. Ability to understand research regulations and comply with all laboratory safety guidelines.

Admissions

It is recommended that students interested in this path speak with their undergraduate advisor as early as their freshman year of study. Once admitted to the accelerated program, students must meet with their undergraduate advisor each semester prior to registering for courses. During the final semester of undergraduate coursework, students should seek advising from the Division Head for Graduate Studies to discuss a graduate degree plan.

Division Head for Graduate Studies

Dayna Averitt, Ph.D.
940-898-2708
daveritt (https://catalog.twu.edu/undergraduate/arts-sciences/biology/accelerated-biology-bs-ms/daveritt@twu.edu)@twu.edu (spierce9@twu.edu)

Application Deadlines

- Priority application deadline: February 15
- Final application deadline: June 1

Admissions Requirements

To apply to the Accelerated B.S. in Biology / M.S. in Biology program, students must:

- Be currently enrolled in the B.S. in Biology program (https://catalog.twu.edu/undergraduate/arts-sciences/biology/) at TWU.
- Have a minimum cumulative grade point average of 3.2 at the time of application.
- Complete the following courses with a grade of B or higher.
  - BIOL 4813, BIOL 4811, BIOL 4823, and BIOL 4821
- Have already completed a minimum of one semester of BIOL 4983 Undergraduate Research at the time of application, and have a commitment from a Division of Biology faculty member to serve as their M.S. advisor and thesis committee chair.
- Have successfully completed a minimum of 72 semester credit hours of coursework toward the B.S. in Biology.
- Have a minimum of 12 semester credit hours (SCH) of electives remaining toward the B.S. in Biology degree.

How to Apply to the Accelerated Program

Students interested in applying to the Accelerated B.S. in Biology / M.S. in Biology program must contact the Division Head for Graduate Studies (https://catalog.twu.edu/undergraduate/arts-sciences/biology/accelerated-biology-bs-ms/daveritt@twu.edu) to schedule a pre-application appointment prior to applying.

Once approved to apply to the Accelerated Program, students must apply to the graduate M.S. in Biology - Thesis Option Program (https://catalog.twu.edu/graduate/graduate-school/admission-graduate-school/). Students cannot enroll in graduate-level coursework until accepted by the Graduate School.

The application for the M.S. in Biology Program requires the following:

1. Statement of Purpose (1-3 pages) that describes your reasons for pursuing graduate work, your background experience, and how your professional goals align with our accelerated master's program.

2. Curriculum vitae or resume
3. Letters of recommendation from 3 academic references. One reference must be the Division of Biology faculty member who will serve as the student's M.S. advisor and thesis committee chair.
4. Admissions interview (videoconference or phone).

Accelerated Undergraduate-Graduate Program Policy Guidelines

Students may apply to an approved accelerated degree program once they have completed at least 60 undergraduate semester credit hours. Upon admission to an accelerated program, students may enroll in graduate courses for credit once they have attained at least 72 undergraduate semester credit hours. Approved courses will apply to both an undergraduate and a graduate degree.

Conditions

- Up to 12 SCH of designated graduate courses may apply to both the Bachelor's degree and a Master's degree program comprised of 45 or fewer SCH; and up to 15 graduate SCH may apply toward both an undergraduate degree and a graduate degree program comprised of more than 45 SCH (Master's, Specialist or Doctoral degree.)
- Undergraduate students may enroll in no more than 6 SCH of graduate coursework in each semester or term.
- No undergraduate-level course may count toward a graduate degree.
- Minimal criteria for admission will include a cumulative undergraduate GPA of at least 3.0. Academic components may set higher requirements for their program.
- 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.
- Prior to applying to an accelerated degree program, students must have completed a minimum of 15 semester credit hours at Texas Woman's University.

Graduate Application Process

All students must meet the University requirements as outlined in the Admission to the TWU Graduate School (https://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: 48 SCH

Program Code: _____ **CIP Code:** 26.0101.00

Lecture and lab must be taken concurrently. A minimum grade of C is mandatory in all required courses for Biology majors.

Texas Core Curriculum

Course	Title	Credits
ENG 1013	Composition I (10)	3
ENG 1023	Composition II (10)	3
Mathematics (20)		3
Life & Physical Sciences (30)		6
Language, Philosophy, & Culture (40)		3
Creative Arts (50)		3
HIST 1013	History of the United States, 1492-1865 (60)	3
HIST 1023	History of the United States, 1865 to the Present (60)	3
POLS 2013	U.S. National Government (70)	3
POLS 2023	Texas Government (70)	3
Social & Behavioral Sciences (80)		3
CAO: Multicultural-Women's Studies (90)		3
CAO: First Year Seminar, Wellness or Mathematics (91)		3
Total SCHs		**42**

Courses Required for Major

Course	Title	Credits
BIOL 2113 & BIOL 2111	Plant Biology and Plant Biology Laboratory	4
BACT 3113 & BACT 3111	General Microbiology and General Microbiology Laboratory	4
ZOOL 4243 & ZOOL 4241	Medical Physiology and Medical Physiology 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
BIOL 4293	Scientific Communication	3
BIOL 4681	Biology Seminar	1
BIOL 4983	Undergraduate Research (Taken 4 times)	12
Graduate Requirements in the Fourth Year		12
BIOL 5503	Research Methods (or other BIOL Graduate Elective)	
BIOL 5333	Advanced Pathophysiology (or other BIOL Graduate Elective)	
BIOL 5543	Genome Editing and Ethics, Policy, and Public Impact (or other BIOL Graduate Elective)	
BIOL 5611	Readings in Biology	
BIOL 5681	Seminar	
BIOL 5801	Biological Research (First-Year Paper Milestone)	
Total SCHs		**48**

Departmental Requirements

Course	Title	Credits
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
Choose one of the following:		4
CHEM 1113 & CHEM 1111	General Chemistry I and General Chemistry Laboratory I	

CHEM 1213 & CHEM 1211	Principles of Chemistry I and Principles of Chemistry Laboratory I	
Choose one of the following:		4
CHEM 1123 & CHEM 1121	General Chemistry II and General Chemistry Laboratory II	
CHEM 1223 & CHEM 1221	Principles of Chemistry II and Principles of Chemistry Laboratory II	
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
Choose one of the following:		4
PHYS 1133 & PHYS 1131	Principles of Physics I and Principles of Physics Laboratory I	
PHYS 2153 & PHYS 2151	General Physics I and General Physics Laboratory I	
Choose one of the following:		4
PHYS 1143 & PHYS 1141	Principles of Physics II and Principles of Physics Laboratory II	
PHYS 2163 & PHYS 2161	General Physics II and General Physics Laboratory II	
MATH 1303	College Algebra	3
or MATH 2014	Calculus I	
MATH 1703	Elementary Statistics I	3
Total SCHs		**38**

Degree requirements listed here are for completion of the undergraduate portion of the accelerated B.S. in Biology / M.S. in Biology program. In the third year of the B.S. in Biology, students must apply for formal admission to the M.S. in Biology graduate program and meet all admissions requirements. Please see the Graduate Catalog for a complete list of degree requirements for the M.S. in Biology program (https://catalog.twu.edu/graduate/arts-sciences/biology/biology-ms/).

Plan of Study

First Year

Fall		**TCCN**	**SCHs**
BIOL 1113 & BIOL 1111	Principles of Biology I and Principles of Biology I Laboratory	BIOL 1406 & BIOL 1106	4
CHEM 1113 & CHEM 1111	General Chemistry I and General Chemistry Laboratory I	CHEM 1311 & CHEM 1111	4
MATH 1303 or 2014	College Algebra or Calculus I	MATH 1314 or MATH 2413	3-4
ENG 1013	Composition I	ENGL 1301	3
UNIV 1231	First-Year Seminar: Learning Frameworks	EDUC 1100, EDUC 1200, EDUC 1300	1
	SCHs		**15-16**
Spring		**TCCN**	
BIOL 1123 & BIOL 1121	Principles of Biology II and Principles of Biology II Laboratory	BIOL 1407 & BIOL 1107	4
CHEM 1123 & CHEM 1121	General Chemistry II and General Chemistry Laboratory II	CHEM 1312 & CHEM 1112	4
MATH 1703	Elementary Statistics I	MATH 1342	3
ENG 1023	Composition II	ENGL 1302	3
	SCHs		**14**

Second Year

Fall		**TCCN**	
BACT 3113 & BACT 3111	General Microbiology and General Microbiology Laboratory		4
CHEM 2213 & CHEM 2211	Organic Chemistry I and Organic Chemistry Laboratory I	CHEM 2323 & CHEM 2123	4
Creative Arts Core			3
General Elective			3
	SCHs		**14**
Spring		**TCCN**	
BIOL 2113 & BIOL 2111	Plant Biology and Plant Biology Laboratory	BIOL 1411 & BIOL 1111	4
BIOL 4293	Scientific Communication		3
CHEM 3223 & CHEM 3221	Organic Chemistry II and Organic Chemistry Laboratory II		4
Language, Philosophy, & Culture Core			3
	SCHs		**14**
Summer		**TCCN**	
BIOL 4983	Undergraduate Research		3
POLS 2013	U.S. National Government	GOVT 2305	3
POLS 2023	Texas Government	GOVT 2306	3
	SCHs		**9**

Third Year

Fall		**TCCN**	
BIOL 4813 & BIOL 4811	Molecular and Cellular Biology: Gene Expression and Molecular and Cellular Biology: Gene Expression Laboratory (Must earn a B or better)		4
ZOOL 4243 & ZOOL 4241	Medical Physiology and Medical Physiology Laboratory		4
BIOL 4983	Undergraduate Research		3
HIST 1013	History of the United States, 1492-1865	HIST 1301	3
	SCHs		**14**
Spring		**TCCN**	
BIOL 4823 & BIOL 4821	Molecular and Cellular Biology: Genetics and Inheritance and Molecular and Cellular Biology: Genetics and Inheritance Laboratory (Must earn a B or higher)		4
BIOL 4983	Undergraduate Research		3
HIST 1023	History of the United States, 1865 to the Present	HIST 1302	3
Social/Behavioral Sciences Core			3
	SCHs		**13**

Fourth Year			
Fall		**TCCN**	
PHYS 1133 & PHYS 1131	Principles of Physics I and Principles of Physics Laboratory I	PHYS 1301 & PHYS 1101	4
BIOL 4681	Biology Seminar		1
BIOL 4983	Undergraduate Research		3
BIOL 5503	Research Methods		3
BIOL 5543	Genome Editing and Ethics, Policy, and Public Impact		3
	SCHs		**14**
Spring		**TCCN**	
PHYS 1143 & PHYS 1141	Principles of Physics II and Principles of Physics Laboratory II		4
BIOL 5611	Readings in Biology		1
BIOL 5681	Seminar		1
BIOL 5333	Advanced Pathophysiology		3
BIOL 5801	Biological Research		1
Multicultures	Women's Studies CAO Core		3
	SCHs		**13**
	Total SCHs:		**120-121**

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