TIFFIN UNIVERSITY

ACADEMIC PATHWAY

BACHELOR OF SCIENCE IN BIOLOGY

What is Biology?

Biology is the scientific study of living organisms and their interactions with each other and their environments. It encompasses a wide range of topics, from the structure and function of molecules within cells to the behavior of organisms in ecosystems. Biologists seek to understand the processes that govern life, including growth, reproduction, evolution and the mechanisms of disease. At its core, biology is a diverse and interdisciplinary field that draws upon principles from chemistry, physics, mathematics and other sciences to explore the nature of life. It encompasses various sub-disciplines, including cellular biology, genetics, ecology, evolutionary biology, physiology, microbiology, behavioral biology and anatomy and morphology.

Why study Biology?

- **Personalized attention:** At Tiffin University, students benefit from small class sizes and personalized attention from dedicated faculty members who are committed to their success. This close-knit learning environment fosters meaningful mentorship opportunities and allows for individualized support while pursuing academic goals in biology.
- **Hands-on learning:** The biology program at Tiffin University emphasizes experiential learning through laboratory experiences, fieldwork and research opportunities. Students have access to state-of-the-art facilities and equipment, allowing them to gain practical skills and hands-on experience essential for success in biology.
- **Engaging curriculum:** The curriculum is designed to provide a comprehensive foundation in biological sciences while also offering flexibility to pursue specialized areas of interest. Whether interested in ecology, genetics, microbiology or biotechnology, Tiffin University offers a diverse range of courses to cater to different academic interests and career goals.
- **Interdisciplinary approach:** Tiffin University encourages interdisciplinary collaboration, allowing students to explore connections between biology and other fields such as chemistry, environmental science, psychology and business. This interdisciplinary approach equips you with a well-rounded skill set and prepares graduates for diverse career opportunities in the rapidly evolving field of biology.
- **Problem-solving skills:** Studying biology hones analytical and critical thinking skills as students grapple with complex biological concepts and phenomena. These problem-solving skills are highly transferable and applicable in various professional settings.
- **Personal development:** Engaging with biology fosters intellectual curiosity and a deeper appreciation for the natural world. It encourages a mindset of lifelong learning and instills values such as environmental stewardship and ethical responsibility.
- **Understanding life:** Biology is the study of life in all its forms, from the tiniest microorganism to complex ecosystems. By delving into biology, students gain a profound understanding of the mechanisms that govern life, including genetics, physiology and evolution.
- **Relevance to society:** Biology plays a pivotal role in addressing some of the most pressing challenges facing humanity, such as disease eradication, environmental conservation and food security. Biology students have the chance to contribute to these critical areas and positively impact society.
- **Career preparation:** The biology program at Tiffin University is designed to prepare students for success in both graduate studies and the workforce. It helps develop critical thinking, problem-solving and communication skills that are highly valued by employers in various industries, including healthcare, biotechnology, environmental science, education and government.
- **Research opportunities:** Tiffin University provides numerous opportunities for undergraduate research, allowing students to work closely with faculty mentors on cutting-edge research projects. Engaging in research not only enhances academic experience but also strengthens a student's resume and prepares them for the workforce.

Overall, studying biology as an undergraduate student at Tiffin University offers a dynamic and rewarding educational experience that prepares graduates for a successful career in the biological sciences. Whether a student aspires to pursue further education or enter the workforce directly, Tiffin University provides the resources, support and opportunities needed to achieve set goals and make a difference in the world.

SCHOOL OF SCIENCE TECHNOLOGY AND HEALTH

What can I do with a Biology degree?

Biology majors can use their degrees to work in a wide variety of fields including:

- Medical fields as clinical, diagnostic or pathologic laboratory technicians
- Government research (EPA, NOAA, USGS, etc.)
- Corporate research and advising
- Higher education

Biology majors can continue to a wide variety of graduate programs depending on their career goals including:

- Medical fields (MD, DO, DDS, OD, etc.)
- Veterinary sciences (DVM)
- Scientific research (MS, Ph.D.)

How much will I earn with an Biology degree? (*Graduate degree required)

Occupation	Total Employment	Mean Annual Wage
Soil and Plant Scientists	15,610	$76,290
Biochemists and Biophysicists	35,050	$113,460
Microbiologists	19,430	$87,820
Zoologists and Wildlife Biologists	15,930	$70,300
Conservation Scientists	22,550	$68,230
Medical Scientists	108,550	$104,050
Dentists*	124,680	$177,770
Optometrists*	38,720	$125,440
Pharmacists*	312,550	$125,690
Physician Assistants*	132,940	$119,460
Veterinarians*	77,260	$109,920
Physicians*	641,380	$252,480
Surgeons*	58,280	$294,520
Clinical Laboratory Technicians	318,780	$56,910
Diagnostic Related Technicians	408,390	$70,780

What is your pathway to graduation?
Testing into MAT 181 (College Algebra)

YEAR 1	
FIRST YEAR FALL - 17 credit hours	**FIRST YEAR SPRING - 17 credit hours**
BIO120+L: General Biology 1	BIO121+L: General Biology 2
CHM131+L+S: General Chemistry 1	CHM132+L: General Chemistry 2
MAT181: College Algebra	MAT275: Precalculus
ENG141: Rhetoric & Research Writing	ENG142: Rhetoric & Academic Writing
DEC100: Engage	DLT101: Digital Literacy& Technology Readiness

YEAR 2: ODD YEARS	
SECOND YEAR FALL - 16 credit hours	**SECOND YEAR SPRING - 16 credit hours**
BIO211+L: Anatomy and Physiology 1	BIO222+L: Anatomy and Physiology 2
CHM331+L: Organic Chemistry 1	CHM332+L: Organic Chemistry 2
MAT281: Calculus 1	MAT282: Calculus 2
DEC200: Explore	BIO250: Ecology and Evolutionary Biology

YEAR 3: ODD YEARS	
THIRD YEAR FALL - 17 credit hours	**THIRD YEAR SPRING - 17 credit hours**
BIO333+L: Genetics	BIO350: Animal Behavior
PHY211+L: Physics 1	CHM411+L: Biochemistry
DEC300: Connect	PHY212+L: Physics 2
MAT273	NAT130: Foundations of Healthy Living
Open Elective	Open Elective
YEAR 3: EVEN YEARS	
THIRD YEAR FALL - 17 credit hours	**THIRD YEAR SPRING - 17 credit hours**
BIO333+L: Genetics	BIO325+L: Botany
PHY211+L: Physics 1	PHY212+L: Physics 2
DEC300: Connect	Transferable Core 3
COM130: Introduction to Speech Communication	NAT130: Foundations of Healthy Living
Open Elective	Open Elective

YEAR 4: ODD YEARS	
FOURTH YEAR FALL - 16 credit hours	**FOURTH YEAR SPRING - 17 credit hours**
BIO410: Developmental Biology	BIO325+L: Botany
BIO373+L: Microbiology	BIO445+L: Cell and Molecular Biology
DEC400: Impact	Transferable Core 3
COM130	Open Elective
Open Elective	Open Elective
YEAR 4: EVEN YEARS	
FOURTH YEAR FALL - 16 credit hours	**FOURTH YEAR SPRING - 17 credit hours**
BIO410: Developmental Biology	BIO350: Animal Behavior
BIO373+L: Microbiology	BIO445+L: Cell and Molecular Biology
DEC400: Impact	CHM411+L: Biochemistry
COM130	Open Elective
Open Elective	Open Elective

Testing into MAT275 (Precalculus)

YEAR 1	
FIRST YEAR FALL - 17 credit hours	**FIRST YEAR SPRING - 17 credit hours**
BIO120+L: General Biology 1	BIO121+L: General Biology 2
CHM131+L+S: General Chemistry 1	CHM132+L: General Chemistry 2
MAT273: Applied Statistics	MAT275: Precalculus
ENG141: Rhetoric & Research Writing	ENG142: Rhetoric & Academic Writing
DEC100: Engage	DLT101: Digital Literacy& Technology Readiness

YEAR 2	
SECOND YEAR FALL - 16 credit hours	**SECOND YEAR SPRING - 16 credit hours**
BIO211+L: Anatomy and Physiology 1	BIO222+L: Anatomy and Physiology 2
CHM331+L: Organic Chemistry 1	CHM332+L: Organic Chemistry 2
MAT281: Calculus 1	MAT282: Calculus 2
DEC200: Explore	BIO250: Ecology and Evolutionary Biology

YEAR 3: ODD YEARS	
THIRD YEAR FALL - 17 credit hours	**THIRD YEAR SPRING - 17 credit hours**
BIO333+L: Genetics	BIO350: Animal Behavior
PHY211+L: Physics 1	CHM411+L: Biochemistry
DEC300: Connect	PHY212+L: Physics 2
COM130	NAT130: Foundations of Healthy Living
Open Elective	Open Elective
YEAR 3: EVEN YEARS	
THIRD YEAR FALL - 17 credit hours	**THIRD YEAR SPRING - 17 credit hours**
BIO333+L: Genetics	BIO325+L: Botany
PHY211+L: Physics 1	PHY212+L: Physics 2
DEC300: Connect	Transferable Core 3
COM130	NAT130: Foundations of Healthy Living
Open Elective	Open Elective

YEAR 4: ODD YEARS	
FOURTH YEAR FALL - 16 credit hours	**FOURTH YEAR SPRING - 17 credit hours**
BIO410: Developmental Biology	BIO325+L: Botany
BIO373+L: Microbiology	BIO445+L: Cell and Molecular Biology
DEC400: Impact	Transferable Core 3
Open Elective	Open Elective
Open Elective	Open Elective
YEAR 4: EVEN YEARS	
FOURTH YEAR FALL - 16 credit hours	**FOURTH YEAR SPRING - 17 credit hours**
BIO410: Developmental Biology	BIO350: Animal Behavior
BIO373+L: Microbiology	BIO445+L: Cell and Molecular Biology
DEC400: Impact	CHM411+L: Biochemistry
Open Elective	Open Elective
Open Elective	Open Elective

Testing into MAT281 (Calculus I)

YEAR 1	
FIRST YEAR FALL - 16 credit hours	**FIRST YEAR SPRING - 16 credit hours**
BIO120+L: General Biology 1	BIO121+L: General Biology 2
CHM131+L+S: General Chemistry 1	CHM132+L: General Chemistry 2
MAT281: Calculus 1	MAT285: Calculus 2
DEC100: Engage	ENG141: Rhetoric & Research Writing

YEAR 2	
FIRST YEAR FALL - 14 credit hours	**FIRST YEAR SPRING - 17 credit hours**
BIO211+L: Anatomy and Physiology 1	BIO222+L: Anatomy and Physiology 2
CHM331+L: Organic Chemistry 1	CHM332+L: Organic Chemistry 2
ENG142: Rhetoric & Academic Writing	DEC200: Explore
DLT101: Digital Literacy& Technology Readiness	BIO250: Ecology and Evolutionary Biology
	MAT273: Applied Statistics

YEAR 3: ODD YEARS	
FIRST YEAR FALL - 17 credit hours	**FIRST YEAR SPRING - 17 credit hours**
BIO333+L: Genetics	BIO350: Animal Behavior
PHY211+L: Physics 1	CHM411+L: Biochemistry
DEC300: Connect	PHY212+L: Physics 2
COM130: Introduction to Speech Communication	NAT130: Foundations of Healthy Living
Open Elective	Open Elective

YEAR 3: EVEN YEARS	
FIRST YEAR FALL - 17 credit hours	**FIRST YEAR SPRING - 17 credit hours**
BIO333+L: Genetics	BIO325+L: Botany
PHY211+L: Physics 1	PHY212+L: Physics 2
DEC300: Connect	Transferable Core 3
COM130: Introduction to Speech Communication	NAT130: Foundations of Healthy Living
Open Elective	Open Elective

YEAR 4: ODD YEARS	
FIRST YEAR FALL - 13 credit hours	**FIRST YEAR SPRING - 17 credit hours**
BIO410: Developmental Biology	BIO325+L: Botany
BIO373+L: Microbiology	BIO445+L: Cell and Molecular Biology
DEC400: Impact	Transferable Core 3
	Open Elective
Open Elective	Open Elective

YEAR 4: EVEN YEARS	
FIRST YEAR FALL - 13 credit hours	**FIRST YEAR SPRING - 17 credit hours**
BIO410: Developmental Biology	BIO350: Animal Behavior
BIO373+L Microbiology	BIO445+L: Cell and Molecular Biology
DEC400: Impact	CHM411+L: Biochemistry
	Open Elective
Open Elective	Open Elective

Testing into MAT095 (Foundations of College Mathematics)

YEAR 1	
FIRST YEAR FALL - 13 credit hours	**FIRST YEAR SPRING - 13 credit hours**
BIO120+L: General Biology 1	BIO121+L: General Biology 2
MAT095: Foundations of College Mathematics	MAT181: College Algebra
ENG141: Rhetoric & Research Writing	ENG142: Rhetoric & Academic Writing
DEC100: Engage	DLT101: Digital Literacy& Technology Readiness

YEAR 2	
FIRST YEAR FALL - 14 credit hours	**FIRST YEAR SPRING - 14 credit hours**
BIO211+L: Anatomy and Physiology 1	BIO222+L: Anatomy and Physiology 2
CHM131+L+S: General Chemistry 1	CHM132+L: General Chemistry 2
MAT273: Applied Statistics	MAT275: Precalculus
DEC200: Explore	BIO250: Ecology and Evolutionary Biology

YEAR 3: ODD YEARS	
FIRST YEAR FALL - 16 credit hours	**FIRST YEAR SPRING - 15 credit hours**
BIO333+L: Genetics	BIO350: Animal Behavior
CHM331+L: Organic Chemistry 1	CHM332+L: Organic Chemistry 2
DEC300: Connect	Transferable Core 3
MAT281: Calculus 1	MAT285: Calculus 2

YEAR 3: EVEN YEARS	
FIRST YEAR FALL - 16 credit hours	**FIRST YEAR SPRING - 13 credit hours**
BIO333+L: Genetics	BIO325+L: Botany
CHM331+L: Organic Chemistry 1	CHM332+L: Organic Chemistry 2
DEC300: Connect	Open Elective
MAT281: Calculus 1	MAT285: Calculus 2

YEAR 4: ODD YEARS	
FIRST YEAR FALL - 14 credit hours	**FIRST YEAR SPRING - 14 credit hours**
BIO373+L: Microbiology	BIO350: Animal Behavior
PHY211+L: Physics 1	CHM411+L: Biochemistry
DEC400: Impact	PHY212 + Physics 2
Open Elective	Open Elective

YEAR 4: EVEN YEARS	
FIRST YEAR FALL - 16 credit hours	**FIRST YEAR SPRING - 17 credit hours**
BIO373+L Microbiology	BIO350: Animal Behavior
PHY211+L: Physics 1	CHM411+L: Biochemistry
DEC400: Impact	PHY212 + Physics 2
Open Elective	Open Elective

YEAR 5: ODD YEARS	
FIRST YEAR FALL - 12 credit hours	**FIRST YEAR SPRING - 14 credit hours**
BIO410: Developmental Biology	BIO445+L: Cell and Molecular Biology
Open Elective	CHM411+L: Biochemistry
Open Elective	Open Elective
COM130: Introduction to Speech Communication	NAT130: Foundations of Healthy Living
YEAR 5: EVEN YEARS	
FIRST YEAR FALL - 12 credit hours	**FIRST YEAR SPRING - 13 credit hours**
BIO410: Developmental Biology	BIO445+L: Cell and Molecular Biology
Open Elective	Open Elective
Open Elective	Open Elective
COM130: Introduction to Speech Communication	NAT130: Foundations of Healthy Living

What if I want to be a doctor? Plans only apply to those who test into MAT 181 or higher.

YEAR 3 (REQUIRED)	
FIRST YEAR FALL	**FIRST YEAR SPRING**
PSY101: Introduction to Psychology	SOC101: Principles of Sociology
YEAR 4 (RECOMMENDED)	
FIRST YEAR FALL	**FIRST YEAR SPRING**
CUL220: Religions of the World	FOR485: Death and Dying
ENG301: Professional Communication	HCA403: Healthcare Law

What if I want to be a dentist?

YEAR 3	
FIRST YEAR FALL	**FIRST YEAR SPRING**
PSY101: Introduction to Psychology (Recommended)	SOC101: Principles of Sociology (Recommended)
YEAR 4 (RECOMMENDED)	
FIRST YEAR FALL	**FIRST YEAR SPRING**
MGT201: Management of Organizations	MGT359: Small Business Management
ACC210: Financial Accounting	MKT151: Introduction to Marketing
ART120: 2 Dimensional Foundations	ART260: Drawing

What if I want to do scientific research (MS/Ph.D. pathway)?

YEAR 3	
FIRST YEAR FALL	**FIRST YEAR SPRING**
SCS300: Research Design	PSY101 Introduction to Psychology
YEAR 4	
FIRST YEAR FALL	**FIRST YEAR SPRING**
MAT373: Applied Statistics I	ENG 301: Professional Communication

Can I choose a minor?

MINOR OPTIONS			
CHEMISTRY		**COMPUTER SCIENCE**	
COURSE NAME	**CREDITS**	**COURSE NAME**	**CREDITS**
CHM281+L: Analytical Chemistry	4	CST155: Introduction to Operating Systems	3
Two of the Following:		CST201: Introduction to Programming	3
CHM435+L: Inorganic Chemistry	4	CST230: Networking Fundamentals	3
CHM450+L: Physical Chemistry	4	CDS244: Cybersecurity	3
CHM481+L: Instrumental Analysis	4	CST280: Database 1	3
		CST412: IT Project Management	3
MATH			
MAT385: Calculus 3	3		
MAT387: Differential Equations	3		
MAT396: Linear Algebra	3		
One MAT elective (300/400)	3		

Enhance your degree with a designation.
Students pursuing careers in dentistry, medicine or veterinary sciences may find themselves wanting to establish a private practice. The small business administration designation will help prepare them for the challenges presented by establishing and running a small business.

Students pursuing careers in research will want a solid foundation in statistical analysis necessary for interpreting the results of their research. The statistical analysis designation will give students a deeper understanding of the types of statistical analyses that can be conducted and help them incorporate them into their work.

DESIGNATION OPTIONS			
SMALL BUSINESS ADMINISTRATION		**STATISTICAL ANALYSIS**	
COURSE NAME	**CREDITS**	**COURSE NAME**	**CREDITS**
ACC210: Financial Accounting	3	MAT373: Applied Statistics 2	3
MKT151: Introduction to Marketing	3	MAT396: Linear Algebra	3
MGT201: Management of Organizations	3	MAT376: Statistics	3
MGT359: Small Business Management	3		

Stay on track!

YEAR 1

- Meet with your faculty mentor to identify your goals and develop a plan to meet those goals.
- Meet with a biology or chemistry professor about undergraduate research opportunities.
- Explore student organizations on campus.
- Consider job shadowing (especially pre-professional students).

YEAR 2

- Meet with your faculty mentor to make sure you are on track with your goals.
- Get involved with undergraduate research.
- Continue job shadowing to build a professional network.
- Explore graduate/medical/dental/veterinary programs.
- Develop your CV or resume.
- Prepare for graduate admissions exams (GRE, MCAT, DAT, etc.).

YEAR 3

- Meet with your faculty mentor to make sure you are on track with your goals.
- Visit career services early in the fall to discuss internships. Apply for internships later in the fall/spring.
- Begin assembling your application packets for graduate school (CV/resume, cover letter, letters of recommendation, etc.).
- Plan a course of study for your graduate admissions exams (GRE, MCAT, DAT, etc.).

YEAR 4

- Meet with your faculty mentor to make sure you are on track with your goals.
- Meet with your academic advisor to make sure you have taken all the classes needed for graduation.
- Take your graduate admissions exam.
- Apply to graduate/medical/dental school or begin your job search.

TIFFIN UNIVERSITY

155 Miami Street,
Tiffin, Ohio 44883
800.968.6446
TIFFIN.EDU

UPDATED FOR AY 2024-2025