

# 2022-2023 Advising Guide for Biology Majors

## Advisors:

**Biology Majors (non-Pre-Health):** Appointment sign-up sheets are in the Biology office (WIN 401)

**Biology Majors (Pre-Health): Sign up here:** <https://tcu.brightspace.com/d2l/home/94522>

The **B.S. degree** offers an expanded study of the biological sciences and includes associated requirements that provide a broader knowledge of the physical sciences. Required courses within the BS degree will meet many prerequisites of graduate and health-related professional schools.

The **B.A degree** is provided for the student who has a strong interest in the biological sciences but who desires a broader-based area of study or who is interested in pursuing multiple majors. The degree is appropriate for students interested in graduate or health-related professional schools but may require additional coursework to fulfill certain prerequisites.

B.S. degree: 36 hours Biology + Chemistry (15) + Math (3) + Physics (8) = 124 hours total

B.A. degree: 26 hours Biology + Minor + Foreign Language = 124 hours total

Biology Minor: 21 hours (including a minimum of 3 upper division courses).

## Requirements for the B.S. degree with a major in Biology

A minimum of 35 semester hours in Biology as follows:

(1) **BIOL 10503** (Unity and Cells) and **BIOL 10513** (Diversity and Organisms) and **BIOL 10523** (Intro Bio Investigation)

(2) **BIOL 30403** (Ecology & the environment)

(3) **BIOL 30603** (Cell, Molecular & Developmental Biology)

(4) **BIOL 41000 - Senior Assessment** taken Sr. Year

(5) **21 additional hours in biology**, including a minimum of three courses with laboratories.

- A maximum of 6 hours in independent research courses (BIOL 40033, 40803 or 40900) is permitted within the 21 additional hours.
- A maximum of 6 hours in teaching of biology courses (BIOL 40320, 40330) is permitted within the additional 21 hours.
- A maximum of 8 hours for any combination of the following courses will be permitted within the 21 additional hours (BIOL 40033, 40320, 40330, 40803 or 40900).
- A maximum of 4 hours and one laboratory for completion of both BIOL 20204 (A&P I) and 20214 (A&P II) is permitted within the additional 21 hours.

**Associated Requirements:** CHEM 10113, 10125 or 10123/20123; CHEM 30123, 30121 and 30133; PHYS 10154, 10164; MATH 10043 or 10524.

## Requirements for the B.A. degree with a major in Biology

A minimum of 26 semester hours in Biology as follows:

1) **BIOL 10503** (Unity and Cells) and **BIOL 10513** (Diversity and Organisms) and **BIOL 10523** (Intro Bio Investigation)

2) **BIOL 30403** (Ecology & the environment)

3) **BIOL 30603** (Cell, Molecular & Developmental Biology)

4) **BIOL 41000 – Senior Assessment** taken Sr. Year

5) **12 additional hours** in biology: including a minimum of two courses with laboratories (excluding BIOL 40033, 40803, 40900).

- A maximum of 3 hours, of the 12 additional hours, will be allowed for any combination of the following courses: independent research courses (BIOL 40033, 40803, or 40900) and teaching of biology course (BIOL 40320, 40330).
- A maximum of four hours and one laboratory for completion of both BIOL 20204 (A&P I) and 20214 (A&P II) is permitted within the additional 12 hrs.

**Minor:** Any minor is acceptable. **Foreign Language:** competency in a foreign language equivalent to the completion of 4<sup>th</sup> semester (Intermediate II) course. Students without credit for a high school course in chemistry are encouraged to take two semesters of college chemistry. One year of high school or two semesters of college physics is also advised.

## Refer to TCU Undergraduate catalog for official listing of all degree requirements

**Pass/No Credit** – two courses (up to 8 hr.) may be taken P/NC. No course applied toward major/minor or associated requirements may be P/NC.

**Transfer credits** – 4 courses after enrolling at TCU. Submit request for CSE approval via [my.tcu.edu](http://my.tcu.edu) prior to taking summer courses.

**GPA** – a cumulative 2.0 GPA at TCU and a cumulative 2.0 GPA in biology courses is required for graduation.

**Upper Division** – At least 42 hours of coursework at 30000 level or above must be taken at TCU.

**Residency** – At least 58 hours must be from TCU and the last 30 hours must be completed at TCU.

## Biology Courses Offered

The schedule for biology courses counting towards the major is given below. Note: Biology courses at the 20000 level (see exceptions for BIOL 20204/20214) or BIOL 30613 (Natural History) do not count towards the major. Course schedule subject to change. View current courses offered at <http://classes.tcu.edu>

### Every Fall

10503 – Unity and Cells  
10513 – Diversity and Organisms  
10523 – Intro Bio Investigation (NSC/L)  
30104 – Invertebrate Biology (L)  
30304 – Microbiology (L)  
30324 - Intro. Marine Sciences  
30403 - Ecology and the Environment  
30414 – Human Anatomy (L)  
30463 – Introductory Neuroscience  
30603 - Cellular, Mol, and Dev Biology  
30843 – Biomedical Imaging  
40001 – Biology/Honors Seminar  
40033 – Senior Honors Research (L) (WEM)  
40123 – Genetics  
40254 – Immunology (L)  
40320 – Teaching Intro. Biology  
40330 – Teaching Advanced Biology  
40353 – Wildlife Ecology & Mgmt.  
40403 – Mammalian Physiology  
40513 – Fundamentals of Biochemistry  
40603 – Virology (WEM)  
40273 – Genomics (L)(WEM)  
40803 – Biological Res and Writing (WEM)  
40900 – Independent Research in Biol.  
50123 – Biostatistics (L)  
50133 – Biochemistry (chemistry dept)  
50153 – Medicinal Chemistry  
50303 – Evolution  
50401 – Neurobiology of Aging  
50910 – Biology Seminar

### Fall Odd # Years

40453 – Principles of Toxicology (WEM)

### Fall Even # Years

### Every Spring

10503 – Unity and Cells  
10513 – Diversity and Organisms  
10523 – Intro Bio Investigation (NSC/L)  
30304 – Microbiology (L)  
30603 - Cellular, Mol, and Dev Biology  
30803 – Human Parasitology  
40011 – Biology/Honors Seminar  
40033 – Senior Honors Research (L) (WEM)  
40123 – Genetics  
40133 – Molecular Basis of Human Disease  
40203 – Histology (L)  
40224 – Developmental Biology (L)  
40254 – Immunology (L)  
40320 – Teaching Intro. Biology  
40330 – Teaching Advanced Biology  
40353 – Wildlife Ecology & Mgmt.  
40403 – Mammalian Physiology  
40800 – Immunobiology of Disease  
40803 – Biological Res. & Writing (WEM)  
40900 – Independent Res. in Biol.  
50103 – Terrestrial Ecosystems  
50123 – Biostatistics (L)  
50143 – Biochemistry (chemistry dept)  
50401 – Neurobiology of Aging  
50502 - Biochemistry Lab  
50910 - Biology Seminar

### Spring Odd # Years

30404 - Comp Vertebrate Anatomy (L)  
40153 – Conservation Genetics (L) (WEM)  
40523 – Structural Biol. Drug Design (L)(WEM)  
50903 – Tropical Biology (L) (WEM)

### Spring Even # Years

40163 – Avian Biology (L)  
40513 – Fundamentals of Biochemistry  
50803 – Marine Biology of Tropics (L)(WEM)

(L) – Laboratory course, (WEM) – Writing Emphasis

Tentative Biology/Honors Seminar schedule ([Biol 40001/40011](#))

#### **Biology of Cancer (Fall)**

Stem Cell Biology (Fall)  
Evolutionary Medicine (Fall)  
Intro. R and Excel (Fall)

#### **Behavioral Ecology (Spring)**

Human Health & Global Change (Spring)

Refer to TCU Undergraduate catalog for listing of official degree requirements