Advising Guide for Biology Majors

Advisors: Biology Track (non-Pre-Health): Appointment sign-up sheets are in the Biology office (WIN 401).
- Dr. Glenn Kroh  Ph. 817-257-6168  WIN 434
- Dr. John Horner  Ph. 817-257-6181  WIN 435
- Dr. Dean Williams  Ph. 817-257-6172  WIN 433

Pre-Health Biology Majors: Appointment sign-up at on-line at http://www.prehealth.tcu.edu/advising_calendars.asp
- Dr. Giri Akkaraju  WIN 416  Molli Crenshaw  WIN 360C  Dr. Clark Jones  SWR 317
- Dr. Matt Chumchal  WIN 405  Dr. Mark Demarest  WIN 431  Dr. Laura Luque  WIN 432
- Dr. Mike Chumley  SWR 342  Dr. Matt Hale  WIN 436A  Dr. Shauna McGillivray WIN 414
- Dr. Meredith Curtis  WIN 426  Dr. Marlo Jeffries  WIN 506  Dr. Mike Misamore  WIN 417
  Stephanie Wallace  WIN 360B

Biology is available as a major or minor on the B.A. and B.S. degrees.

The BA 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.

The BS 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 prerequisite of graduate and health-related professional schools.

B.A. degree: 26 hours Biology + Minor + Foreign Language = 124 hours total
B.S. degree: 35 hours Biology + Chemistry (15) + Math (3) + Physics (8) = 124 hours total
Biography Minor: 21 hours (including a minimum of 3 upper division courses).

Requirements for the B.A. degree with a major in Biology:
A minimum of 26 semester hours in Biology as follows:
1. BIOL 10501,10503 and BIOL 10511,10513 (Intro. Biology I & II lectures, labs)
2. BIOL 30403 (Ecology & the environment)
3. BIOL 30603 (Cell, Molecular & Developmental Biology)
4. Major Field Test in Biology 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: BIOL 40033, 40300, 40320, 40330, 40803, 40900. A maximum of four hours and one laboratory for completion of both BIOL 20204 and 20214 is permitted within the additional 12 hrs.

Minor: Any minor is acceptable. Foreign Language: competency in a foreign language equivalent to the completion of 4th 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.

Requirements for the B.S. degree with a major in Biology:
A minimum of 35 semester hours in Biology as follows:
1. BIOL 10501,10503 and BIOL 10511,10513 (Intro. Biology I & II lectures, labs)
2. BIOL 30403 (Ecology & the environment)
3. BIOL 30603 (Cell, Molecular & Developmental Biology)
4. Major Field Test in Biology 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 and 20214 is permitted within the additional 21 hours.
6. (Required): CHEM 10113, 10125 or 10123/20123; CHEM 30123, 30121 and 30133; PHYS 10154, 10164; MATH 10043 or 10524; Additional courses in mathematics, computer science or statistics are encouraged.

Additional Guidelines: See TCU Undergraduate Catalog for official listings 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 – 12hrs maximum after enrolling at TCU. After 54 hr., courses must be taken at 4yr university. Academic action form must be filed with CS&E prior to taken 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 42hrs of coursework at 30000 level or above must be taken at TCU.
Residency – At least 58 hrs must be from TCU and the last 30 hr must be completed at TCU.
Summary Sheet - Biology Degree

Note: Biology courses at the 20000 level or BIOL 30613 (Natural History) do not count towards the major. The usual schedule for biology courses counting towards the major is given below.

Every Fall
- 10501 - Introductory Biology Lab I
- 10503 - Introductory Biology I
- 30104 – Invertebrate Biology (L)
- 30304 – Microbiology (L)
- 30403 – Ecology and the Environment
- 30404 – Comp Vertebrate Anatomy (L)
- 30463 – Introductory Neuroscience
- 30843 – Biomedical Imaging
- 40001 – Honors Seminar
- 40033 - Senior Honors Research (L) (WEM)
- 40254 – Immunology (L)
- 40320 – Teaching Intro. Biology
- 40403 – Mammalian Physiology
- 40453 – Principles of Toxicology
- 40513 – Fundamentals of Biochemistry
- 40603 – Virology (WEM)
- 40800 – Genomics (L)
- 40800 – Intro. Marine Sciences
- 40803 – Biological Res and Writing (WEM)
- 50123 – Biostatistics (L)
- 50133 – Biochemistry
- 50153 – Medicinal Chemistry
- 50303 – Evolution
- 50401 – Neurobiology of Aging
- 50910 – Biology Seminar

Every Spring
- 10501 - Introductory Biology Lab II
- 10503 - Introductory Biology II
- 30603 (Cell, Mol. Dev Biology)
- 30803 – Human Parasitology
- 40011 - 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)
- 40303 – Medical Microbiology
- 40320 – Teaching Intro. Biology
- 40330 – Teaching Advanced Biology
- 40353 – Wildlife Ecology & Mgmt
- 40473 – Vertebrate Endocrinology (L)(WEM)
- 40513 – Fundamentals of Biochemistry
- 40800 – Intro. to Biostatistics (L)
- 40803 – Biological Res. & Writing (WEM)
- 40900 – Independent Res. in Biol.
- 50130 – Terrestrial Ecosystems
- 50123 – Biostatistics (L)
- 50125 – Biostatistics (L)
- 50143 – Biochemistry
- 50502 – Biochemistry Lab
- 50910 – Biology Seminar

Fall Odd # Years
- 30233 – Economic Botany

Fall Even # Years
- 30504 – Plant Biology (L)
- 50703 – Ecology of Lakes and Streams (L)

(L) - Laboratory course (WEM) - Writing Emphasis

Tentative Biology/Honors Seminar schedule (Bio 40001/40011)
- Cancer Biology (Fall)
- Stem Cell Biology (Fall)
- Behavioral Ecology (Spring)
- Evolutionary Medicine (Fall)
- Intro. R and Excel (Fall)
- Human Health & Global Change (Spring)

Biology Requirements
- B.S: 21 additional cr. including 3 labs
- B.A: 12 additional cr. including 2 labs

Biology Electives:
- Core & Electives
- Summer courses: **Recommended for some medical schools

### Typical Academic Path

<table>
<thead>
<tr>
<th>Freshman Year: (28-30 semester hours)</th>
<th>B.S. degree</th>
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<tbody>
<tr>
<td>Fall</td>
<td>Hrs</td>
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<tr>
<td>BIOL 10503/10501 - Bio I</td>
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<td>Core or elective</td>
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<th>Hrs</th>
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<td>Fall</td>
<td>Hrs</td>
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<td>Hrs</td>
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<tr>
<td>BIOL 30403 – Ecol. &amp; the Env.</td>
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<td>BIOL 30603 - Cell, Mol &amp; Dev.</td>
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<td>CHEM 301.23</td>
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<td>CHEM 301.33</td>
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<td>CHEM 301.21</td>
<td>6-8</td>
<td><strong>CHEM 301.43</strong></td>
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<td>Core &amp; Electives</td>
<td>6-8</td>
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<td>Total = 15-17</td>
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<td>ENGL 20803 should be taken sometime in sophomore year.</td>
<td>**Required for some medical schools</td>
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**Junior Year**

- Upper level biology courses
- **Physics:** 8 hours typically taken in the junior year or possibly in summer school.
- **Degree Plan:** Request from CSE

**Senior Year**

- Upper level biology courses
- **Major Field Test in Biology:** complete during senior year
- **Intent to Graduate:** File with CSE

Refer to TCU Undergraduate catalog for official degree requirements

Revised Oct. 2017

Associated requirements for B.S. Degree

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<thead>
<tr>
<th>Chemistry</th>
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<tr>
<td>10113 General Chem. I</td>
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<td>10122/10123 General Chem. II</td>
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<td>30123 Organic Chem. I</td>
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<td>30121 Organic Chem. I Lab</td>
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<td>30133 Organic Chem. II</td>
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<tr>
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