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. Ray Drenner  Ph. 817-257-6183  WIN 411
- Dr. Dean Williams  Ph. 817-257-6172  WIN 431

Pre-Health Biology Majors: Appointment sign-up at on-line at [https://appt.tcu.edu/prehealth.php](https://appt.tcu.edu/prehealth.php)
- Dr. Giri Akkaraju  WIN 416  Moli Crenshaw  WIN 360C  Dr. Clark Jones  SR 317
- Dr. Matt Chumchal  WIN 405  Dr. Mark Demarest  WIN 431  Dr. Laura Luque  WIN 432
- Dr. Mike Chumley  WIN 506  Dr. Matt Hale  WIN 436A  Dr. Shauna McGillivray  WIN 414
- Dr. Meredith Curtis  WIN 380  Dr. Marlo Jeffries  WIN 521  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.

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
Biology 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. 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 4 hours and one laboratory for completion of both BIOL 20204 and 20214 is permitted within the additional 21 hours.
6. (4) Associated Requirements: 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** – 12 hrs maximum after enrolling at TCU. After 54 hr, courses must be taken at 4 yr 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 42 hrs 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
- 40011 - Honors Seminar
- 40033 – Senior Honors Research (L) (WEM)
- 40203 - Histology (L)
- 40224 - Developmental Biology (L)
- 40303 - Medical Microbiology
- 40330 - Teaching Intro. Biology
- 40403 – Introductory Neuroscience
- 40503 – Basic Biochemistry
- 40603 – Virology (WEM)
- 40800 – Genomics (L)
- 40800 – Intro. Marine Biology
- 40808 – Intro. Introductory Biology
- 40808 – Intro. Introductory Biology
- 40800 – Genomics (WEM)
- 40404 – Comp Vertebrate Anatomy (L)
- 40463 – Introductory Neuroscience
- 40503 – Basic Biochemistry
- 40603 – Virology (WEM)
- 40800 – Genomics (L)
- 40808 – Intro. Marine Biology
- 40800 – Genomics (WEM)
- 40800 – Intro. Marine Biology

**Every Spring**
- 10501 - Introductory Biology Lab II
- 10503 - Introductory Biology II
- 30603 - Cellular, 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)
- 40303 - Medical Microbiology
- 40330 - Teaching Intro. Biology
- 40403 – Introductory Neuroscience
- 40503 – Basic Biochemistry
- 40603 – Virology (WEM)
- 40800 – Genomics (L)
- 40808 – Intro. Marine Biology
- 40800 – Genomics (WEM)
- 40808 – Intro. Marine Biology
- 40800 – Genomics (WEM)
- 40800 – Intro. Marine Biology

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

### Biology Requirements

<table>
<thead>
<tr>
<th>Grade</th>
<th>Credits</th>
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<tr>
<td>10503/10501 (Intro. Biology I)</td>
<td>4</td>
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<tr>
<td>10513/10511 (Intro. Biology II)</td>
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<td>30403 (Ecology &amp; Environ.)</td>
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<tr>
<td>30603 (Cell, Mol. &amp; Dev.)</td>
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</tbody>
</table>

### Biology Electives:

**B.S.**
- 21 additional cr. including 3 labs

**B.A.**
- 12 additional cr. including 2 labs

### Lab Courses:

1. 
2. 
3. 

### Typical Academic Path

#### Freshman Year: (28-30 semester hours) B.S. degree

<table>
<thead>
<tr>
<th>Fall</th>
<th>Hrs</th>
<th>Spring</th>
<th>Hrs</th>
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</thead>
<tbody>
<tr>
<td>BIOL 10503/10501 -Bio I</td>
<td>4</td>
<td>BIOL 10513/10511 -Bio II</td>
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<tr>
<td>CHEM 10113</td>
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<td>CHEM 10122/10123</td>
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<td>ENG 10803</td>
<td>3</td>
<td>Core or elective</td>
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<tr>
<td>Core or elective</td>
<td>3-6</td>
<td>Core or elective</td>
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**Total = 13-16**

**Total = 15**

#### Sophomore Year:

<table>
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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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<tr>
<td>CHEM 30123</td>
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<td>CHEM 30133</td>
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<td>CHEM 30121</td>
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<td>**CHEM 30133</td>
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<td>Core &amp; Electives</td>
<td>6-8</td>
<td>Core &amp; Electives</td>
<td>6-8</td>
</tr>
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</table>

**Total = 13-15**

**Total = 15-17**

ENGL 20803 should be taken sometime in sophomore year.

**Required for some medical schools**

#### 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

### Associated requirements for B.S. Degree

<table>
<thead>
<tr>
<th>Chemistry</th>
<th>Grade</th>
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<tbody>
<tr>
<td>10113 General Chem. I</td>
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<td>10122/10123 General Chem. II</td>
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<tr>
<td>30123 Organic Chem. I</td>
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<tr>
<td>30121 Organic Chem. I Lab</td>
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<td>30133 Organic Chem. II</td>
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<thead>
<tr>
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<td>10154</td>
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<tr>
<td>10164</td>
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<table>
<thead>
<tr>
<th>Math</th>
<th>Grade</th>
<th>Credits</th>
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