

Student Name: \_\_\_\_\_

ID#: \_\_\_\_\_

Advisor Name: \_\_\_\_\_

Anticipated Graduation Date: \_\_\_\_\_

## BIOTECHNOLOGY MAJOR CHECKLIST (122 s.h.) 2023-24 Academic Calendar

THIS CHECKLIST IS INTENDED TO ASSIST STUDENTS AND ADVISORS IN ENSURING THAT ALL REQUIREMENTS ARE MET. IT IS THE RESPONSIBILITY OF THE **STUDENT** TO ENSURE THAT ALL REQUIREMENTS FOR THE GRANTING OF A DEGREE HAVE BEEN MET.

### 1. Inquiry: Ways of Knowing - Core Requirements (37 s.h.\*)

\*University Core Requirements are modified for students who transfer in with 57 s.h. or more of initial transfer credit. See Academic Calendar for details ([twu.ca/calendar](http://twu.ca/calendar)).

| ✓                        | COURSE                                       | S.H. | NOTES  | ✓                        | COURSE   | S.H. | NOTES   |
|--------------------------|--|------|--|--------------------------|--|------|---|
|                          | <b>FOUNDATIONAL INQUIRIES (25 sem. hrs.)</b> |      |  | <input type="checkbox"/> | Academic Writing Requirement <sup>2</sup>  |      |   |
|                          | <b>Academic Research &amp; Writing</b>       |      |  |                          | <b>WAYS OF KNOWING (12 sem. hrs.)</b>  |      |   |
| <input type="checkbox"/> | ENGL _____                                   | 3    | Choose 2 courses (6 sem. hrs.) from ENGL 101, 102, 103, 104.         |                          | In addition to the courses on the left, students must take an additional 18 sem. hrs., selecting 3 sem. hrs. from each of the following six categories. *At least 9 sem. hrs. must be from outside of the student's major. |      |   |
| <input type="checkbox"/> | ENGL _____                                   | 3    |  |                          |  |      |   |
|                          | <b>Foundations</b>                           |      |  |                          | <b>Aesthetic &amp; Performance Inquiry</b>   |      |   |
| <input type="checkbox"/> | FNDN 101                                     | 1    | Compulsory during the first semester of the first year. <sup>1</sup> | <input type="checkbox"/> | _____  | 3    | Choose 3 sem. hrs. from the Aesthetic & Performance Inquiry category below. |
| <input type="checkbox"/> | FNDN 102                                     | 3    | Normally taken before year 3.  |                          | <b>Cultural &amp; Linguistic Inquiry</b>   |      |   |
| <input type="checkbox"/> | FNDN 201                                     | 3    |  | <input type="checkbox"/> | _____  | 3    | Choose 3 sem. hrs. from the Cultural & Linguistic Inquiry category below.   |
|                          | <b>Logical &amp; Ethical Reasoning</b>       |      |  |                          | <b>Experiential &amp; Embodied Inquiry</b>   |      |   |
| <input type="checkbox"/> | PHIL _____                                   | 3    | Choose one of PHIL 100, 103, 105, 106, 109, or 210.                  | **                       | **   | **   | Satisfied by Program Requirements.  |
|                          | <b>Religious &amp; Spiritual Thought</b>     |      |  |                          | <b>Historical &amp; Archival Inquiry</b>   |      |   |
| <input type="checkbox"/> | RELS 110                                     | 3    | Compulsory during the first semester of the first year.              | <input type="checkbox"/> | _____  | 3    | Choose 3 sem. hrs. from the Historical & Archival Inquiry category below.   |
| <input type="checkbox"/> | RELS 111                                     | 3    |  |                          | <b>Quantitative &amp; Computational Inquiry</b>  |      |   |
| <input type="checkbox"/> | RELS 112                                     | 3    |  | **                       | **   | **   | Satisfied by Program Requirements.  |
|                          | <b>Scientific Method &amp; Lab Research</b>  |      |  |                          | <b>Social &amp; Global Inquiry</b>   |      |   |
| **                       | **   | **   | Satisfied by Program Requirements.                                   | <input type="checkbox"/> | _____  | 3    | Choose 3 sem. hrs. from the Social & Global Inquiry category below.         |

<sup>1</sup>FNDN 101 is compulsory during the first semester of the first year for all new students unless they have a minimum 24 sem. hrs. initial transfer credit.

<sup>2</sup>**Academic Writing Requirement:** students must take WRTG 100 (native English speakers) or WRTG 101 (non-native English speakers) in their first semester at TWU, unless exempt at the time of admission to the University. WRTG course credit may be included toward a degree program as elective credit.

#### Aesthetic & Performance Inquiry

Choose 3 semester hours from: ART 181, 182, 250; ENGL 207, 208, 310; HKIN 342; MCOM 211, 221, 231, 369; MUSI 110; PHIL 370; SAMC 111, 370; THTR 130, 161; any Music Ensembles; any Music Lessons.

#### Cultural & Linguistic Inquiry

Choose 3 semester hours from: ANTH 210, 395; EDUC 496; ENGL 334, 340, 482; GREE 235; HEBR 245; HIST 237; IDIS 201; POLS 237; RELS 235, 245; SOCI 395; any World Languages & Cultures course (CHIN, FREN, JAPA, RUSS, SPAN).

#### Historical & Archival Inquiry

Choose 3 semester hours from: ART 237, 238; ECON 306; GENV 312; HIST 107, 108, 135, 306, 339, 391; MUSI 131, 132; NURS 230; PHIL 203, 314, 421; POLS 391; PSYC 408; RELS 320, 351, 352, 475; SAMC 112; SOCI 391; THTR 331, 332.

#### Social & Global Inquiry

Choose 3 semester hours from: ANTH 101, 302; BUSI 311; ECON 311, 354; EDUC 345, 365; ENGL 348; GENV 111, 212, 322, 354; LING 101, 210, 302; MCOM 111, 171, 251, 313, 315, 317, 372, 491; NURS 227; PHIL 208, 220, 310, 320; POLS 101, 211, 310, 312, 320, 493; PSYC 399; RELS 271, 272, 285, 381, 384, 386, 476; SOCI 101; THTR 348.

## 2. Required Biology and Biotechnology Courses (42-44 s.h.)

| ✓                        | COURSE                  | S.H. | NOTES | ✓                        | COURSE        | S.H. | NOTES |
|--------------------------|-------------------------|------|-------|--------------------------|---------------|------|-------|
| <input type="checkbox"/> | BIOL 113 <sup>a,b</sup> | 4    |       | <input type="checkbox"/> | BIOL 372      | 3    |       |
| <input type="checkbox"/> | BIOL 114 <sup>a,b</sup> | 4    |       | <input type="checkbox"/> | BIOL 384      | 3    |       |
| <input type="checkbox"/> | BIOL 223                | 3    |       | <input type="checkbox"/> | BIOL 386      | 3    |       |
| <input type="checkbox"/> | BIOL/BIOT 290           | 3    |       | <input type="checkbox"/> | BIOL/BIOT 390 | 3    |       |
| <input type="checkbox"/> | BIOL _____              | 3    |       | <input type="checkbox"/> | BIOL 423      | 3    |       |
| <input type="checkbox"/> | BIOL 336                | 3    |       | <input type="checkbox"/> | BIOL/BIOT 470 | 3    |       |
| <input type="checkbox"/> | BIOL 371                | 3    |       | <input type="checkbox"/> | BIOL/BIOT 490 | 3    |       |

<sup>a</sup> Minimum grade of C required to progress to BIOL 223.

<sup>b</sup> Includes a 1 semester hour lab as a co-requisite. BIOL 198 is the co-requisite for BIOL 113; BIOL199 is the co-requisite for BIOL 114.

## 3. Required Internships (3 s.h.)

| ✓                        | COURSE        | S.H. | NOTES                                  |
|--------------------------|---------------|------|--|
| <input type="checkbox"/> | BIOL/BIOT 200 | 3    | Taken in the Spring semester of Year 1 |

## 4. Required Co-Ops (must complete two\*)

| ✓                        | COURSE | S.H. | NOTES | ✓                        | COURSE | S.H. | NOTES |
|--------------------------|--------|------|-------|--------------------------|--------|------|-------|
| <input type="checkbox"/> |        |      |       | <input type="checkbox"/> |        |      |       |

\*BIOT 300/450 may substitute for required co-ops.

## 5. Ancillary Courses (35 s.h.)

| ✓                        | COURSE    | S.H. | NOTES          | ✓                        | COURSE        | S.H. | NOTES |
|--------------------------|-----------|------|----------------|--------------------------|---------------|------|-------|
| <input type="checkbox"/> | CHEM 111* | 4    |                | <input type="checkbox"/> | MATH 123      | 3    |       |
| <input type="checkbox"/> | CHEM 112* | 4    |                | <input type="checkbox"/> | MATH/STAT 203 | 3    |       |
| <input type="checkbox"/> | CHEM 221  | 3    | Take in Year 2 | <input type="checkbox"/> | NATS 481      | 3    |       |
| <input type="checkbox"/> | CHEM 222  | 3    | Take in Year 2 | <input type="checkbox"/> | PHYS 111      | 3    |       |
| <input type="checkbox"/> | CHEM 357  | 3    | Take in Year 2 | <input type="checkbox"/> | PHYS 112      | 3    |       |
| <input type="checkbox"/> | CHEM 358  | 3    |                |                          |               |      |       |

\*Includes a 1 semester hour lab as a co-requisite. CHEM 198 is the co-requisite for CHEM 111, CHEM 199 the co-requisite for CHEM 112.

## 6. Elective Courses (3-5 s.h.)

| ✓                        | SUBJECT | COURSE # | S.H. | NOTES | ✓                        | SUBJECT | COURSE # | S.H. | NOTES |
|--------------------------|---------|----------|------|-------|--------------------------|---------|----------|------|-------|
| <input type="checkbox"/> |         |          |      |       | <input type="checkbox"/> |         |          |      |       |
| <input type="checkbox"/> |         |          |      |       | <input type="checkbox"/> |         |          |      |       |

- **NOTE:** All Biotechnology courses are cross listed as Biology courses, including Biotechnology practica.
- **NOTE:** A total of 122 s.h. of credit, including a minimum of 42 s.h. (24 s.h. in the major) of upper-level credit is required for graduation. A minimum overall (cumulative) GPA of 2.50 is required for graduation, with a minimum 2.50 GPA in all required courses for the major.
- **NOTE:** In order to be eligible for graduation you must complete an Application for Graduation via the Student Portal and submit a completed checklist to the Office of the Registrar by April 30th of the year prior to your completion (there is no fee to apply for graduation). Once your complete application has been received, a degree audit will be completed for you. This audit will confirm which courses are still outstanding in order for you to complete your degree.

*This program is offered under the written consent of the Minister of Advanced Education effective March 9, 2006, having undergone a quality assessment process and been found to meet the criteria established by the minister. Nevertheless, prospective students are responsible for satisfying themselves that the program and the degree will be appropriate to their needs (for example, acceptable to potential employers, professional licensing bodies, or other educational institutions).*

|   |      | YEAR 1                |        | YEAR 2             |                   | YEAR 3             |        | YEAR 4                |        |                    |                       |
|---|------|-----------------------|--------|--------------------|-------------------|--------------------|--------|-----------------------|--------|--------------------|-----------------------|
| ✓ | s.h. | Fall                  | Fall   | Fall               | Fall              | Fall               | Fall   | Fall                  | Fall   |                    |                       |
|   | 1    | FNDN 101              |        | 3                  | FNDN 201          |                    | 3      | Core <sup>3</sup>     |        | 3                  | Core <sup>3</sup>     |
|   | 3    | RELS 110              |        | 3                  | Core <sup>3</sup> |                    | 3      | BIOL 371              |        | 3                  | BIOL <sup>4</sup>     |
|   | 3    | ENGL <sup>1</sup>     |        | 3                  | BIOL 223          |                    | 3      | BIOL 384              |        | 3                  | BIOL <sup>4</sup>     |
|   | 4    | BIOL 113 <sup>2</sup> |        | 3                  | CHEM 221          |                    | 3      | BIOL <sup>4</sup>     |        | 3                  | CHEM 357              |
|   | 4    | CHEM 111 <sup>2</sup> |        | 3                  | MATH 123          |                    | 3      | PHYS 111              |        | 3                  | NATS 481              |
|   |      | Semester Total: 15    |        | Semester Total: 15 |                   | Semester Total: 15 |        | Semester Total: 15    |        | Semester Total: 15 |                       |
|   |      | YEAR 1                |        | YEAR 2             |                   | YEAR 3             |        | YEAR 4                |        |                    |                       |
| ✓ | s.h. | Spring                | Spring | Spring             | Spring            | Spring             | Spring | Spring                | Spring |                    |                       |
|   | 3    | FNDN 102              |        | 3                  | Core <sup>3</sup> |                    | 3      | Core <sup>3</sup>     |        | 3                  | Core <sup>4</sup>     |
|   | 3    | RELS 111              |        | 3                  | BIOT 200          |                    | 3      | BIOL 372              |        | 3                  | BIOL <sup>4</sup>     |
|   | 3    | ENGL <sup>1</sup>     |        | 3                  | BIOL 290          |                    | 3      | BIOL 386              |        | 3                  | BIOL 470 <sup>6</sup> |
|   | 4    | BIOL 114 <sup>2</sup> |        | 3                  | CHEM 222          |                    | 3      | BIOL 423 <sup>5</sup> |        | 3                  | CHEM 358              |
|   | 4    | CHEM 112 <sup>2</sup> |        | 3                  | STAT 203          |                    | 3      | PHYS 112              |        | 3                  | Elective              |
|   |      | Semester Total: 17    |        | Semester Total: 15 |                   | Semester Total: 15 |        | Semester Total: 15    |        | Semester Total: 15 |                       |

## COURSE LEGEND

### Core Courses

1. Choose from: ENGL 101, 102, 103, 104
3. Core electives should be chosen as follows:  
 ONE Aesthetic and Performance Inquiry  
 ONE Cultural & Linguistic Inquiry  
 ONE Historical & Archival Inquiry  
 ONE Social & Global Inquiry

### Major Courses

2. Includes co-requisite lab
4. Choose a 300- or 400-level BIOL course
5. Currently offered in the spring term of even years
6. Currently offered in the spring term of odd years

### Major + Core Courses

### Ancillary Courses

2. Includes co-requisite lab

### Ancillary + Core Courses

2. Includes co-requisite lab

### Electives

*Summer Sessions are encouraged to reduce semester load and/or repeat courses*

*This is an example of what a 4-year degree plan might look like. It is not the official program checklist. In the case of any discrepancy between this program plan and the checklist, the checklist shall prevail. It is the student's responsibility to ensure they complete all program requirements as laid out in the approved checklist.*