



School of Science, Mathematics, Technology & Health

Department of Biological & Physical Sciences

B.S. in Biology Academic Tracking Sheet

(Corresponds with the 2020-2021 Academic Catalog)

Name: _____

Emphasis: _____

Year started TMU: _____

Students are required to complete 41 Biology core units, 23 emphasis units, 51-54 General Education units, and 4-7 elective units. A **minimum total of 122 units** is required to graduate.

| General Education Requirements | |
|------------------------------------------------------|-------------|
| <i>Scripture Courses</i> | Term |
| B101 Old Testament Survey I (3) | |
| B102 Old Testament Survey II (3) | |
| B121 Essentials of Christian Thought (3) | |
| B201 New Testament Survey I (3) | |
| B202 New Testament Survey II (3) | |
| BTH321 Christian Theology I (3) | |
| BTH322 Christian Theology II (3) | |
| <i>Worldview & Skills Courses</i> | Term |
| C100 Spoken Communication (3) | |
| E110 English Composition (3) | |
| Essentials of Literature (3) (Choose one *) | |
| General Literature Elective (3) (Choose one * or **) | |
| ECN200 Essentials of Economics & Society (3) | |
| GS150 Essentials of Geology (3) | |
| or LS150 Essentials of Biology (3) | |
| GS150 Essentials of Geology Lab (1) | |
| or LS150L Essentials of Biology Lab (1) | |
| H211 Essentials of World History I (3) | |
| H212 Essentials of World History II (3) | |
| H230 Essentials of U.S. History (3) | |
| MA240 Critical Thinking Quantitative Analysis (3) | |
| MU190 Essentials of Music & Art (3) | |
| P311 Essentials of Philosophy (3) | |
| POL220 U.S. Government (3) | |

| General Education Substitutions | |
|-------------------------------------------------------------------------------------|---------------------------------------------|
| <i>* Essentials of Literature Courses</i> | |
| E211/E212 English Literature I or II | |
| E221/E222 World Literature I or II | |
| E231/E232 American Literature I or II | |
| <i>**General Literature Elective Courses</i> | |
| E313 Age of Romanticism | E405 Shakespeare |
| E314 Victorian Age | E406 Milton |
| E334 The Short Story | E415 Contemporary Lit |
| E335 The English Novel | E416 Modern British Writers |
| E374 Studies in Jane Austen | E425 20 th Century American Lit. |
| E404 Studies in John Calvin | E453 Psychoanalytic Crit. |
| <i>Other Substitutions for Bio. & Phys. Science majors***</i> | |
| For B102: IBEX367 | |
| For B201: IBEX377 | |
| For MU190: ART338 | |
| For H211/H212: Pass World Hist. Competency Exam & 3 units of Upper Division History | |
| For LS150/GS150 w/ lab: LS151 w/ lab | |
| For MA240: MA101, MA121, MA262 | |
| <i>Additional substitution(s) for BIO Teacher Ed. majors</i> | |
| For P311: P321 | |

***Substitutions: Refer to G.E. Substitutions and Waivers in the Academic Catalog

TMU Graduation Requirements (from the Academic Catalog):

The Master's University grants bachelor's degrees (i.e. Bachelor of Arts, Bachelor of Music, and Bachelor of Science) to students who satisfy the graduation requirements described below.

1. Complete a minimum of 122 semester units of credit.
2. Complete a minimum of 40 semester units in upper division courses.
3. Satisfy all General Education requirements.
4. Complete the required curriculum for the chosen major field(s) of study.
5. Maintain a minimum GPA of 2.00 (cumulative) in all TMU courses. (Some majors have different GPA requirements. Please see your department for details.)
6. Complete a minimum of 32 semester units of non-Directed Studies coursework at TMU or 32 semester units of TMU Online major courses.
7. Complete at least 12 of the final 24 semester units at TMU.

All students must be aware that they undertake complete responsibility for managing their progress toward graduation. Faculty advisors will attempt to assist in this process; however, given the fluidity of student progress, each student must ultimately assume responsibility for completing all graduation requirements. This checklist is designed as an aid to help students manage their progress, but it does NOT replace the Academic Catalog. In any case where this checklist contradicts the catalog, the catalog issued during the student's first semester at TMU shall be considered the official degree criteria

| <u>Biology Core Courses</u> | | | | | |
|------------------------------------|------|----------------------------|-------|------|-----------------------------|
| Units | Term | | Units | Term | |
| 4 | | CH151 General Chemistry I | 3 | | LS372 Origins |
| 4 | | CH152 General Chemistry II | 1 | | LS420 Seminar in Biology |
| 4 | | CH351 Organic Chemistry I | 1 | | LS422 Senior Capstone |
| 4 | | LS151 Organismic Biology | 3 | | MA262 Elementary Statistics |
| 1 | | LS220 Research Methods | 4 | | PS251 General Physics I |
| 4 | | LS252 Cell Biology | 4 | | PS252 General Physics II |
| 4 | | LS342 Genetics & Genomics | | | |
| 41 | | | | | |

Emphasis Courses

| <u>Cellular & Molecular Biology</u> | | |
|------------------------------------------------|------------------------------------------|-----------------------------|
| Units | Term | |
| 4 | | LS351 Molecular Genetics |
| 4 | | CH352 Organic Chemistry II |
| 4 | | CH461 Biochemistry |
| <i>11 credits of the following*</i> | | |
| 3 | | MA121 Calculus I |
| 4 | | LS331 Developmental Biology |
| 4 | | LS341 Ecology |
| 4 | | LS355 Parasitology |
| 4 | | LS361 Immunology |
| 4 | | LS362 Medical Microbiology |
| 3 | | LS388 Mathematical Ecology |
| 4 | | LS398 Plant Science |
| 1-4 | | LS428 Research in Biology |
| 23 | <i>Total units required for emphasis</i> | |

| <u>Natural History/Environmental Biology</u> | | |
|-----------------------------------------------------|------------------------------------------|------------------------------------------|
| Units | Term | |
| 4 | | LS318 Conservation Bio. & Sustainability |
| 4 | | LS341 Ecology |
| 4 | | LS398 Plant Science |
| <i>11 credits of the following*</i> | | |
| 4 | | CH352 Organic Chemistry II |
| 4 | | LS312 Animal Physiology |
| 4 | | LS346 Marine Biology |
| 3-4 | | LS348 Biology Field Studies** |
| 4 | | LS355 Parasitology |
| 4 | | LS362 Medical Microbiology |
| 4 | | LS375 Vertebrate Paleontology |
| 3 | | LS388 Mathematical Ecology |
| 1-4 | | LS428 Research in Biology |
| 23 | <i>Total units required for emphasis</i> | |

| <u>Pre-Medical/Pre-Dentistry/Pre-Allied Health</u> | | |
|-----------------------------------------------------------|------------------------------------------|-----------------------------|
| Units | Term | |
| 4 | | LS341 Ecology |
| 4 | | CH352 Organic Chemistry II |
| 4 | | CH461 Biochemistry |
| <i>11 credits of the following*</i> | | |
| 3 | | MA121 Calculus I |
| 4 | | LS321 Human Anatomy |
| 4 | | LS322 Human Physiology |
| 4 | | LS331 Developmental Biology |
| 4 | | LS351 Molecular Genetics |
| 4 | | LS352 Medical Physiology |
| 4 | | LS355 Parasitology |
| 4 | | LS361 Immunology |
| 4 | | LS362 Medical Microbiology |
| 4 | | LS398 Plant Science |
| 1-4 | | LS428 Research in Biology |
| 23 | <i>Total units required for emphasis</i> | |

| <u>Animal Science/Pre-Veterinary Medicine</u> | | |
|------------------------------------------------------|------------------------------------------|------------------------------------------|
| Units | Term | |
| 4 | | LS312 Animal Physiology |
| 4 | | LS341 Ecology |
| 4 | | CH352 Organic Chemistry II |
| <i>11 credits of the following*</i> | | |
| 3 | | MA121 Calculus I |
| 4 | | CH461 Biochemistry |
| 4 | | LS302 Vertebrate Anatomy & Systematics |
| 4 | | LS318 Conservation Bio. & Sustainability |
| 4 | | LS331 Developmental Biology |
| 3 | | LS346 Marine Biology |
| 3-4 | | LS348 Biology Field Studies** |
| 4 | | LS355 Parasitology |
| 4 | | LS361 Immunology |
| 4 | | LS362 Medical Microbiology |
| 4 | | LS375 Vertebrate Paleontology |
| 3 | | LS388 Mathematical Ecology |
| 4 | | LS398 Plant Science |
| 1-4 | | LS428 Research in Biology |
| 23 | <i>Total units required for emphasis</i> | |

| <u>Pre-Nursing</u> | | |
|-------------------------------------|------------------------------------------|-------------------------------------------|
| Units | Term | |
| 4 | | LS321 Human Anatomy |
| 4 | | LS322 Human Physiology |
| 4 | | LS362 Medical Microbiology |
| <i>11 credits of the following*</i> | | |
| 3 | | MA121 Calculus I |
| 4 | | CH352 Organic Chemistry II |
| 4 | | CH461 Biochemistry |
| 3 | | LS231 Human Growth & Development |
| 4 | | LS331 Developmental Biology |
| 4 | | LS352 Medical Physiology |
| 4 | | LS361 Immunology |
| 1-4 | | LS428 Research in Biology |
| 3 | | CH260 Intro. to Gen., Org. & Biochemistry |
| 23 | <i>Total units required for emphasis</i> | |

| <u>Paleontology</u> | | |
|-------------------------------------|------------------------------------------|----------------------------------------|
| Units | Term | |
| 4 | | GS150 Essentials of Geology |
| 4 | | LS341 Ecology |
| 4 | | LS375 Vertebrate Paleontology |
| <i>11 credits of the following*</i> | | |
| 3 | | MA121 Calculus I |
| 4 | | CH352 Organic Chemistry II |
| 4 | | GS151 Historical Geology |
| 3 | | LS302 Vertebrate Anatomy & Systematics |
| 3 | | LS307 Biology of Dinosaurs |
| 4 | | LS346 Marine Biology |
| 4 | | LS398 Plant Science |
| 1-4 | | LS428 Research in Biology |
| 23 | <i>Total units required for emphasis</i> | |

| <u>Life Sciences Education</u> | | |
|-----------------------------------------------------------------|------------------------------------------|----------------------------------------------------------------|
| Units | Term | |
| 3 | | ED400 Foundations of Education ^{+◇} |
| 3 | | P321 Philosophies of Education ⁺ |
| <i>One of the following</i> | | |
| 3 | | ED202 Curriculum Instruction & Learning Theory ⁺ |
| 3 | | ED301 Cultural & Linguistic Diversity in Teaching ⁺ |
| <i>8 credits of biology, chemistry, & geology electives</i> | | |
| | | |
| | | |
| 23 | <i>Total units required for emphasis</i> | |

⁺Teaching Credential req., must pass with a B- or better.
[◇]Or ED101, ED202, and ED301.

| <u>General Biology</u> | | |
|-----------------------------------------------------------------------|------------------------------------------|---------------|
| Units | Term | |
| 4 | | LS341 Ecology |
| <i>19 units upper div. biology, chemistry, and geology electives*</i> | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| 23 | <i>Total units required for emphasis</i> | |

| <u>Minor in Biology</u> | | |
|------------------------------------------------------------------|---------------------------------------|----------------------------|
| Units | Term | |
| 4 | | CH151 General Chemistry I |
| 4 | | CH152 General Chemistry II |
| 4 | | LS151 Organismic Biology |
| 4 | | LS252 Cell Biology |
| 3 | | LS372 Origins |
| <i>6 units upper division biology & chemistry electives*</i> | | |
| | | |
| 25 | <i>Total units required for minor</i> | |

* Students can choose from any upper division courses that begin with LS, GS, or CH.

** LS348 Biological Field Studies – Topics vary and can be repeated for credit.