



**School of Science, Mathematics, Technology & Health**

*Department of Biological & Physical Sciences*

B.S. in Biology Academic Tracking Sheet

(Corresponds with the 2015-2016 Academic Catalog)

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

Emphasis: \_\_\_\_\_

Year started TMU: \_\_\_\_\_

Students are required to complete 52 Biology core units, 8-17 emphasis units, 51-54 General Education units, and 0-2 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 &amp; 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 <sup>th</sup> Century American Lit.
E404 Studies in John Calvin	E453 Psychoanalytic Crit.
<i>Other Substitutions for Bio. &amp; 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*

<b><i>Biology Core Courses</i></b>					
<b>Units</b>	<b>Term</b>		<b>Units</b>	<b>Term</b>	
4		CH151 General Chemistry I	4		LS342 Genetics & Genomics
4		CH152 General Chemistry II	3		LS372 Origins
4		CH351 Organic Chemistry I	1		LS420 Seminar in Biology
4		CH352 Organic Chemistry II	1		LS422 Senior Capstone
4		LS151 Organismic Biology	3		MA121 Calculus I
1		LS220 Research Methods	3		MA262 Elementary Statistics
4		LS252 Cell Biology	4		PS251 General Physics I
4		LS341 Ecology*	4		PS252 General Physics II
<b>52</b>					

\*LS398 Plant Science also fulfills this requirement.

### **Emphasis Courses**

<b><i>Cellular &amp; Molecular Biology</i></b>		
<b>Units</b>	<b>Term</b>	<i>12 credits of the following</i>
4		CH461 Biochemistry
4		LS331 Developmental Biology
4		LS351 Molecular Genetics
4		LS361 Immunology
4		LS362 Medical Microbiology
3		LS388 Mathematical Ecology
4		LS398 Plant Science
1-4		LS428 Research in Biology
<b>12</b>	<i>Total units required for emphasis</i>	

<b><i>Natural History/Environmental Biology</i></b>		
<b>Units</b>	<b>Term</b>	<i>12 credits of the following</i>
4		LS312 Animal Physiology
4		LS318 Conservation Bio. & Sustainability
3-4		LS348 Biology Field Studies**
4		LS362 Medical Microbiology
4		LS375 Vertebrate Paleontology
3		LS388 Mathematical Ecology
4		LS398 Plant Science
1-4		LS428 Research in Biology
<b>12</b>	<i>Total units required for emphasis</i>	

<b><i>Pre-Medical/Pre-Dentistry/Pre-Allied Health</i></b>		
<b>Units</b>	<b>Term</b>	<i>12 credits of the following</i>
4		CH461 Biochemistry
4		LS321 Human Anatomy
4		LS322 Human Physiology
4		LS331 Developmental Biology
4		LS351 Molecular Genetics
4		LS352 Medical Physiology
4		LS361 Immunology
4		LS362 Medical Microbiology
4		LS398 Plant Science
1-4		LS428 Research in Biology
<b>12</b>	<i>Total units required for emphasis</i>	

<b><i>Animal Science/Pre-Veterinary Medicine</i></b>		
<b>Units</b>	<b>Term</b>	<i>12 credits of the following</i>
4		CH461 Biochemistry
4		LS302 Vertebrate Anatomy & Systematics
4		LS312 Animal Physiology
4		LS318 Conservation Bio. & Sustainability
4		LS331 Developmental Biology
3-4		LS348 Biology Field Studies**
4		LS361 Immunology
4		LS362 Medical Microbiology
3		LS388 Mathematical Ecology
4		LS398 Plant Science
1-4		LS428 Research in Biology
<b>12</b>	<i>Total units required for emphasis</i>	

<b><i>Pre-Nursing</i></b>		
<b>Units</b>	<b>Term</b>	<i>12 credits of the following</i>
4		CH461 Biochemistry
3		LS231 Human Growth & Development
4		LS321 Human Anatomy
4		LS322 Human Physiology
4		LS331 Developmental Biology
4		LS352 Medical Physiology
4		LS361 Immunology
4		LS362 Medical Microbiology
1-4		LS428 Research in Biology
<b>12</b>	<i>Total units required for emphasis</i>	

<b><i>Life Sciences Education</i></b>		
<b>Units</b>	<b>Term</b>	
3		ED400 Foundations of Education <sup>+◇</sup>
3		P321 Philosophies of Education <sup>+</sup>
3		ED202 Curriculum Instruction & Learning Theory <sup>+</sup> or ED301 Cultural & Linguistic Diversity in Teaching <sup>+</sup>
<i>8 credits of biology, chemistry, &amp; geology electives</i>		
<b>17</b>	<i>Total units required for emphasis</i>	

<sup>+</sup>Teaching Credential prerequisite, must pass w/ B- or better.

<sup>◇</sup>Or ED101, ED202, and ED301.

<b><u>General Biology</u></b>		
Units	Term	<i>8 units upper div. bio., chem., geo. electives*</i>
<b>8</b>	<i>Total units required for emphasis</i>	

<b><u>Minor in Biology</u></b>		
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 &amp; chemistry electives*</i>		
<b>25</b>	<i>Total units required for minor</i>	

\*Choose from upper div. courses beginning with LS, GS, or CH.

\*\*Topics vary and can be repeated for credit.