

**College of Basic and Applied Sciences
2020-2021 Upper Division Form**

Student name _____ Student # _____
 Major Biology Minor Secondary Education - MTeach
 Concentration _____ E-mail _____

Instructions: For students graduating in Fall 2017 or later. One (1) copy signed by major and minor advisors should be filed in the Graduation Analyst's Office in DSB 120 three semesters before anticipated graduation. An Intent to Graduate form must accompany this form.

General Education Area	Course	Semester	Grade	Prerequisites/Notes	Credit Hours
COMMUNICATION (9 hours)	ENGL 1010				3
	ENGL 1020			ENGL 1010 with a minimum grade of C-	3
	COMM 2200				3
HISTORY (6 hours) Choose two: HIST 2010, HIST 2020, HIST 2030					3
					3
HUMANITIES AND/OR FINE ARTS (9 hours) Choose one: ENGL 2020, 2030, or HUM 2610. Choose two with different prefixes: ANTH 2210, ART 1030, ART 1920, DANC 1000, HIST 1010, HIST 1020, HIST 1110, HIST 1120, MUS 1030, PHIL 1030, THEA 1030					3
					3
					3
MATHEMATICS (3 hours) MATH 1010, MATH 1530, MATH 1630, MATH 1710, MATH 1720, MATH 1730, MATH 1810, MATH 1910				Recommend MATH 1910	3
NATURAL SCIENCES (8 hours) Choose two (different rubrics): ASTR 1030/1031, BIOL 1030/1031, BIOL 1110/1111, BIOL 2010/2011, BIOL 2020/2021, CHEM 1010/1011, CHEM 1030/1031, CHEM 1110/1111, GEOL 1030/1031, GEOL 1040/1041, PGEO 1030, PHYS 1110, PHYS 2010/2011, PHYS 2110/2111, PSCI 1030/1031, PSCI 1130/1131				Recommend BIOL 1110/1111	4
				Recommend CHEM 1110/1111	4
SOCIAL/BEHAVIORAL SCIENCES (6 hours) Choose two (different prefixes): AAS 2100, ANTH 2010, EMC/JOUR/RIM 1020, ECON 2410, ECON 2420, GEOG 2000, HLTH 1530/1531, PS 1010, PS 1005, PSY 1410, RS 2030, SOC 1010, SOC 2010, or WGST 2100					3
					3
Hours Required					41

* If a 4 credit Math course is taken, 3 credits count in General Education and the extra credit counts in Supporting and Elective Courses.

Major Courses	Course	Semester	Grade	Prerequisites/Notes	Credit Hours
Introduction to the Biology Major	BIOL 1000				1
General Biology 1 (credits counted above)	BIOL 1110/1111			MATH 1710 with C- or better or MATH ACT of 19 or higher	4***
General Biology 2	BIOL 1120/1121			BIOL 1110/1111	4
Microbiology	BIOL 2230/2231			BIOL 1110/1111 and 1120/1121	4
Genetics	BIOL 3250/3251			BIOL 1110/1111 and 1120/1121	4
General Ecology	BIOL 3400/3401			BIOL 1110/1111, 1120/1121, and CHEM 1110/1111	4
Biology Concentration Courses (see listing under General Biology Track)				See Advisor	4
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Biology Concentration Courses (see listing under General Biology Track)				See Advisor	3-4
Research Methods	BIOL 4740			YOED 3520 and BIOL 3250/3251	3
Physiology (select from BIOL 4110/4111, or 4210/4211, or 4500)				See Advisor	4
Evolution	BIOL 3500			BIOL 3250/3251	3
Senior Seminar	BIOL 4200			BIOL 2230, 3250, 3400, and 3500	1
Hours Required in Major					42
***Hours Toward 120 Required for Graduation (removes duplication of hours between General Education and Major)					38

Supporting and Elective Courses				
Course	Semester	Grade	Prerequisites/Notes	Credit Hours
CHEM 1110/1111				4
CHEM 1120/1121			CHEM 1110/1111 with a C- or better	4
CHEM 2030/2031 or 3010/3011			CHEM 1120/1121	4
MATH 1910			MATH 1730 with a minimum grade of C or Math ACT score of 26.	4
MATH 1920, or MATH 2050, or BIOL 4350/4351			Must take 1 hr elective if MATH 2050 is chosen.	4
PSCI 1030/1031				4
Hours Required				24

Secondary Education Minor				
	Semester	Grade		Credit Hours
MSE 1010 Inquiry Approaches to Teaching				1
MSE 2010 Inquiry Lesson Design				1
YOED 3520 Knowing and Learning				3
YOED 3550 Classroom Interactions in Science and Math				3
PHIL 3120 Perspectives in Math and Science				3
YOED 4050 Project Based Instruction in Math and Science				3
YOED 4040 Residency I				4
YOED 4400 Residency II				12
MINOR HOURS REQUIRED				30
TOTAL HOURS REQUIRED				124

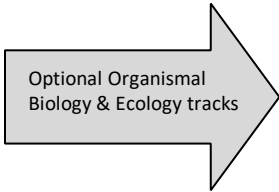
Optional 2 nd Minor				
Course	Semester	Grade	Notes	Credit Hours
Hours Required				

1. Degrees require a minimum of 120 semester hours with a cumulative and major of 2.0 GPA or higher, a minimum of 36 upper-division hours (3000/4000 level), and a minimum of 50 senior college hours (earned at a four-year college or university).
2. A minimum of 12 upper-division hours (3000/4000 level) must be completed within the major.

Signed:		
	Major Advisor	Date

Instructions For Upper-Division Forms for Biology

1. This form should be filled out in consultation with your advisor three semesters prior to graduation.
2. An Intent to Graduate Form must accompany the Upper Division Form when submitted to the Graduation Analyst in DSB 120.
3. In order to graduate, you must complete at least 120 semester hours of which at least 36 must be in upper division (3000/4000 numbered) courses. At least 50 semester hours must have been taken at a senior (4 year) college/university. A minimum 2.00 GPA in the major, overall, and in most minors, is required for graduation. Course work awarded from a junior college will not count as upper-division credit even if it is credited on your transcript as a 3000 or 4000 level course.
4. If the course prefix and number are not shown, be sure to write them in the "Course" column. In the "Grade" column, write the grade that you received if you have already completed the course, or the semester that you plan on taking the course (for example: F 19, Sp 20, Su 20, etc.). In the Notes column, write in the course you are taking instead of the course listed, or Advanced Placement credit for the course, or transfer credit for the course, (in which case you should list the original course name and number); otherwise, the Notes column should remain blank. See advisor and catalog for options to fulfill specific requirements. If a course previously taken is accepted as a substitution for a course listed, then a Substitution Form must be filled out and approved by Major Advisor and Department Chair and accompany the Upper Division and Intent to Graduate Forms.
5. See the specified MTSU Undergraduate Catalog and the Student Handbook for further details concerning degree requirements for graduation. You are responsible for understanding and fulfilling all degree requirements.

Biology Concentration Lists*	
<p>Organismal Biology and Ecology* Choose at least 10 hours from the following list:</p> <p>3020 (4) Comp. Anat. Vert. (Fall) 3040 (4) Entomology (Fall, odd) 3050 (3) Parasitology (Spring) 4080 (4) Mycology (Fall, even) 4090 (3) Forest Ecology (Fall) 4140 (4) Invert. Zool. (Spring) 4180 (4) Vert. Zool. (Fall) 4220 (4) Ichthyology (Fall, even) 4330 (1-4) Biome Analysis 4390 (4) Ethology (Spring, odd years) 4420 (4) Plant Ecology and Evolution (Spring, odd years) 4570 (3) Principles of Toxicology (Spring, odd) 4580 (4) Marine Biology (Spring, odd) 4590 (4) Principles of Environmental Toxicology (Spring, even) **Students may choose to follow one of the track options described to the right instead of choosing from the list above**</p>	<p style="text-align: center;"></p> <p>Optional Organismal Biology & Ecology tracks</p> <p>Optional Organismal Biology & Ecology tracks:</p> <p>Botany Track: (10 hours) Choose from BIOL 4080, 4090, 4420 and choose one course from among the column to the left. Students in this track should take BIOL 4500 (Plant Physiology) as their required Physiology course</p> <p>Zoology Track: (10 hours) Choose from BIOL 3020, 3040, 4140, 4180, 4220, 4390. Students in this track should take BIOL 4110 (General Physiology) as their required Physiology course.</p> <p>Ecology Track: (10 hours) Take BIOL 4580 and choose two courses from BIOL 3020, 3040, 3050, 4080, 4140, 4180, 4220, 4390, 4570, and 4590.</p> <p>General Biology Track: (10 hours) <i>**required for students in MTeach program**</i> Choose one of the following in the Vertebrate Zoology Focus: BIOL 3020 or 4180 Choose one of the following in the Invertebrate Zoology Focus: BIOL 3040, 3050, or 4140 Choose one of the following in the Plant Focus: BIOL 4080 or 4420</p>
<p>Genetics & Biotechnology* Required: 4550 (3) Biotechnology (Fall & Spring) Pick one of the following: 4450 (4) Molecular Genetics (Fall) 4460 (3) Human Genetics (Spring) Pick one of the following: 4270 (4) Trans. Elec. Microscopy (Spring) 4290 (4) Scan. Elec. Microscopy (Fall) 4300 (4) Immunology (Fall & Spring) 4450 (4) Molecular Genetics (Fall) 4460 (3) Human Genetics (Spring) 4510 (4) Food/Indust. Micro. (Fall) 4570 (3) Prin. Toxicology (Spring, odd) 4720 (4) Animal Development (Spring) 4750 (4) Plant Biotechnology</p>	<p>Physiology* Choose 10 hrs. from the following list 3010 (4) Embryology (Fall) 3020 (4) Comp. Anat. Vert. (Fall) 3340 (3) Human Pathophysiology (Spring) 4110 (4) Gen. Physiology (Fall & Spring)+ 4130 (4) Histology (Spring) 4170 (3) Endocrinology (Fall, odd) 4210 (4) Cell & Molec. (Fall & Spring)+ 4300 (4) Immunology (Fall & Spring) 4310 (3) Cardio-Renal Physiology (Fall, even) 4440 (4) Gen. Virology (Fall) 4500 (4) Plant Physiology (Spring)+ 4560 (4) Neurobiology (Fall, even) 4570 (3) Prin. Toxicology (Spring, odd) <i>+only if not used for core requirement</i></p>
<p>Microbiology* Choose 10 hrs. from the following list 3050 (3) Parasitology (Spring) 3210 (3) Environ. Micro. (Spring) 4080 (4) Mycology (Fall, even) 4300 (4) Immunology (Fall & Spring) 4430 (4) Diagnostic Micro. (Fall & Spring) 4440 (4) Gen. Virology (Fall) 4450 (4) Molec. Genet. (Fall) 4510 (4) Food/Indust. Micro. (Fall) 4550 (3) Biotechnology (Fall & Spring) 4730 (4) Microbial Phys. & Biochem. (Spring, even)</p>	<p>* See advisor or chair for additional options; other Upper Division Biology courses may be substituted.</p>