

BIOLOGY MAJOR (BIOLEN.BS)
Molecular Biology/Biotechnology Concentration

<u>Required Courses</u>		<u>Hrs.</u>	<u>Prereq.</u>	<u>Rec.Yr.</u>
BIOL 161	Principles of Biology I	4		Fr
BIOL 162	Principles of Biology II	4	BIOL 161	
BIOL 250	Genetics	4	BIOL 161;BIOL 162 for Biochem majors	Soph
BIOL 254	Experimental Biology	4	BIOL 161, 250 for Bio Majors	Soph/Jr
BIOL 310	Ecology	4	BIOL 161, ENVS 130 for Env Sci ;MATH 115	Jr/Sr
	<u>OR</u>		BIOL 254, CHEM 161, 163L	
BIOL 320	Animal Behavior	4	BIOL 254 or P/I	Jr/Sr
BIOL 312	Plant Systematics	4	BIOL 254 or 120 w P/I	Soph/Jr
	<u>OR</u>			
BIOL 316	Vertebrate Zoology	4	BIOL 254	Soph/Jr
BIOL 344	Evolution	3	BIOL 250	Jr
BIOL 352	Physiology	4	BIOL 254	Jr
	<u>OR</u>			
BIOL 360	Principles of Microbiology	4	BIOL 254; CHEM 221, 223L	Jr
<u>One course selected from</u>				
BIOL 325	Molecular Embryology	4	BIOL 254 or P/I	Jr/Sr
BIOL 354	Molecular Cell Biology	4	BIOL 254, CHEM 222, 224L	Jr/Sr
BIOL 374	Immunology	4	BIOL or CHEM major	Jr
BIOL 379	Experiential Learning in Biology	1	BIOL 254	Jr
	<u>OR</u>			
BIOL 398/498	Biology Research	1-2	BIOL 254; CHEM 221, 223L	Jr/Sr
^BIOL 497	Seminar	2	Sr Stand or P/Faculty	Sr
CHEM 161	Accel Gen Chem for Sci Majors	3	HS Chemistry and placement or CHEM 105, 107L; Coreq CHE 163L	Fr/Soph
CHEM 163L	Accel Gen Chem for Sci Majors Lab	1	HS Chemistry and placement or CHEM 105, 107L; Coreq CHEM 161	Fr/Soph
	<u>OR</u>			
CHEM 131	General Chemistry Sci Maj I	3	Coreq CHEM 133L	Fr/Soph
CHEM 133L	General Chemistry Sci Maj I Lab	1	Coreq CHEM 131	
CHEM 132	General Chemistry Sci Maj II	3	C- or better in CHEM 131, 133L; Coreq CHEM 134L	Fr/Soph
CHEM 134L	General Chemistry Sci Maj II Lab	1	Coreq CHEM 132	
CHEM 221	Organic Chemistry I	3	C- or better in CHEM 161,163L or CHEM 131, 133L,132, 134L; Coreq CHEM 223L	Soph
CHEM 223L	Organic Chemistry Lab	1	C- or better in CHEM 161,163L or CHEM 131, 133L 132, 134L; Coreq CHEM 221	
MATH 115	Elementary Statistics	3		Fr

68-74 total hours

Molecular Biology/Biotechnology Concentration (19-20 hours)

CHEM 222	Organic Chemistry II	3	C- or better in CHEM 221, 223L; Coreq CHEM 224L	Soph
CHEM 224L	Organic Chemistry II Lab	1	C- or better in CHEM 221, 223L; Coreq CHEM 222	Soph
CHEM 350	Biochemistry I	3	C- or better in CHEM 222, 224L and/or BIOL 354	Jr

Three courses beyond the core of which two must include a lab:

BIOL *305	Principles of Toxicology	3	BIOL 151, 152	Jr
BIOL 325	Molecular Embryology	4	BIOL 254	Jr
BIOL 352	Physiology	4	BIOL 254	Jr
BIOL 354	Molecular Cell Biology	4	BIOL 254, CHEM 222, 224L	Jr/Sr
BIOL 360	Principles of Microbiology	4	BIOL 254; CHEM 221, 223L	Jr
BIOL 374	Immunology	3	BIOL or CHEM major	Jr/Sr
BIOL 388/488	Approved special topics	3		
CHEM 352	Biochemistry II	3	C- or better CHEM 350, 351L; Coreq CHEM-353L	Jr/Sr
CHEM 388/488	Approved special topics	3		

*no lab

Strongly recommended courses include one semester of calculus (MATH 161 or 162) and a year of physics (PHYS 151, 152 or PHYS 161, 162.)

****REMINDERS****

1. Biology majors are expected to take BIOL 161, 250 and 254 in sequence as prerequisites for other courses.
2. Majors must take required Chemistry courses in their freshman or sophomore year.
3. Be aware that most upper division courses are offered every other year.
4. Graduate school candidates should check entrance requirements for several graduate schools.
5. Completion of BIOL-379, 398 or 498 with a grade of C or better is required for graduation.

^Satisfies advanced writing requirement

NAME: _____

**B.S. Degree: Biology Major (for students entering in Fall 2018/Spring 2019)
Molecular Biology/Biotechnology Concentration**

In the "WHAT" column, enter the specific course number when applicable--e.g. HIST 121. In the "WHEN" column, enter the term and year in which the requirement is satisfied--e.g., sp '00.

General Education		Biology Major – Molecular Biology/Biotechnology Concentration	
WHAT	WHEN	WHAT	WHEN
_____	ENGL 101/INDS 106* w/ C (2.0) [3 hrs]	_____	BIOL 161 [4 hrs]
_____	ENGL 102/INDS 102* w/ C(2.0)* [3 hrs]	_____	BIOL 162 [4 hrs]
_____	COMM 211/INDS 103 w/ C(2.0) [3 hrs]	_____	BIOL 250 [4 hrs]
_____	Dept senior seminar/writing course	_____	BIOL 254 [4 hrs]
_____	Met by: _____ BIOL 497 [2 hrs]	_____	BIOL 310/320 [4 hrs]
_____	BIOL/CHEM/ENVS/PHSC/PHYS w/ lab [3 hrs]	_____	BIOL 312/316 [4 hrs]
_____	/INDS 112 [4 hrs]	_____	BIOL 344 [3 hrs]
_____	BIOL/CHEM/ENVS/PHSC/PHYS w/ lab [3 hrs]	_____	BIOL 352/360 [4 hrs]
_____	/INDS 112 [4 hrs]	_____	BIOL 325/354/374 [4 hrs]
_____	MATH (except 112,141,203,205)/	_____	BIOL 379/398/498 [1-2 hrs]
_____	PSYC 225/230/INDS 114 [3-4 hrs]	_____	BIOL 497 [2 hrs]
_____	RELG/INDS 111 [3-4 hrs]	_____	CHEM 161 [3 hrs]
_____	PHIL [3 hrs]/INDS 110 [4 hrs]	_____	CHEM 163L [1 hr]
_____	INDS120 (Humanities) [3 hrs]	_____	OR
_____	Any literature course/INDS 113[3 hrs]	_____	CHEM 131 [3 hrs]
_____	Fine Arts	_____	CHEM 133L [1 hr]
_____	_____ ART (except 265)/	_____	CHEM 132 [3 hrs]
_____	DANC/MUSC/THRE/ENGL 213/	_____	CHEM 134L [1 hr]
_____	INDS 107 [3-4 hrs]	_____	CHEM 221 [3 hrs]
_____	OR	_____	CHEM 223L [1 hr]
_____	_____ MUSC/THRE [2 hrs]	_____	MATH 115 [3 hrs]
_____	_____ same discipline [1 hr]	_____	47-48 semester hours
_____	OR	_____	<u>Concentration [19-20 hrs not previously completed]</u>
_____	_____ MUSC/THRE [1 hr]	_____	CHEM 222 [3 hrs]
_____	_____ same discipline [1 hr]	_____	CHEM 224L [1 hr]
_____	_____ same discipline [1 hr]	_____	CHEM 350 [3 hrs]
_____	HIST 100 or 200 level except HIST 201/	_____	BIOL *305/325/352/354/360/374/388/488/
_____	or INDS 117 [3-4hrs]	_____	CHEM 352/388/488 [3-4 hrs]
_____	CJUS/ECON/GEOG/GNST/POLS/PSYC/	_____	BIOL 325/352/354/360/374/388/488/
_____	SOCI [3hrs]/INDS 104 [4 hrs]	_____	CHEM 352/388/488 [4 hrs]
_____	US Cultural Studies [3 hrs]/INDS 109 [4 hrs]	_____	BIOL 325/352/354/360/374/388/488/
_____	Non-Western Cultural Studies [3 hrs]/	_____	CHEM 352/388/488 [4 hrs]
_____	INDS 108 [4 hrs]	_____	BIOL 325/352/354/360/374/388/488/
_____	EXSC 110/120/121/130/201/240	_____	CHEM 352/388/488 [4 hrs]
_____	[3 hrs]/INDS 105 [4 hrs]		
_____	120 semester hours required for graduation		

*Enter NA (not applicable) if waived upon admission or if completing the honors program.

➤Only six hours of any minor may overlap with the required credit hours of a student's chosen major.

*no lab

➤Except in specifically approved majors, a maximum of 52 hours in an academic discipline may count toward graduation. Three hours over the limit may count to accommodate an internship in the discipline.

➤The following limits apply when counting hours applicable toward the 120 required for graduation: 4 hours of physical activity (EXSC) and 8 hours of Music ensemble.