

2011-2012 B.S. Biology – Molecular Biology Concentration

NAME _____ ID# _____

UNIVERSITY CORE

COLLEGE CORE

A. Core Foundations

B. Core Skills & Knowledge

A. National & International

B. Supporting Skills & Knowledge

CORE 101 _____ 3
 CORE 102 _____ 3
 CORE 103* _____ 3
 CORE 201 _____ 3
 CORE 202 _____ 3

Courses must be from different disciplines:
MATHEMATICAL SCIENCES (3SH)
 MATH 138, 151, OR 152 ___ 3
NATURAL SCIENCES (4 SH)
 CHEM 101 _____ 4
HUMANITIES (3 SH)
 _____ 3
 One of the following: ENGL 200, HIST 101, 102 PHIL 111, 112, 114; POSC 110; RELN 111, 112, 200, 202, 206

Perspectives Courses must be from different disciplines:
U. S. PERSPECTIVES (3 SH)
 _____ 3
 One of the following: APST 200 ECON 101, 105, 106, ENGL 203 GEOG 201, 202, 203 HIST 111, 112 POSC 120, SOCY 110

NATURAL SCI. OR MATHEMATICAL SCIENCES (3-4 SH)
 STAT 200 _____ 3
HUMANITIES, VISUAL & PERFORMING ARTS, OR FOREIGN LANGUAGES (3-4 SH)
 _____ 3-4

NOTE: Courses listed in multiple areas can only be used to fulfill a single area requirement.

Students can use only one course with their major prefix to fulfill core requirements.

* Honors course – will replace CORE 101 & 102 for those students in the RU honors program

VISUAL & PERFORMING ARTS (3 SH)
 _____ 3
 One of the following: ART 111, 215, 216 CVPA 266 DNCE 111 MUSC 100, 121, 123 THEA 100, 180

GLOBAL PERSPECTIVES (3SH)
 _____ 3
 One of the following: ENGL 201 FORL 103; CVPA 266, GEOG 101, 102, 140, 280 HIST 101, 102 INST 101 ITEC 112 PEAC 200 RELN 112, 205, SOCY 121, THEA 180 WMST 101

One of the following: ENGL 200 HIST 101, 102 PHIL 111, 112, 114 POSC 110; RELN 111, 112, 203, 206 Or ART 111, 215, 216; CVPA 266; DNCE 111 MUSC 100, 121, 123 THEA 100, 180 Or CHNS 101: 102, 201: 202 FORL 100, 109, 200, 209, 210, 309, 409; FREN 100, 200:210, 300, 320 GRMN 100, 200: 210, 300 LATN 101, 201, 350; RUSS 100, 200, 210, 300, SPAN 101: 102, 201,202

SOCIAL/BEHAV. SCIENCES (3 SH)
 _____ 3
 One of the following: ANSC 101, APST 200 ECON 105, 106 GEOG 101, 102, 103 HIST 111, 112 POSC 120; PSYC 121 RELN 205 SOCY 110, 121

SOCIAL/ BEHAV. SCI. OR HEALTH & WELLNESS (3SH)
 _____ 3
 One of the following: ANSC 101, APST 200 ECON 105, 106 GEOG 101, 102, 103 HIST 111, 112 POSC 120 PSYC 121 RELN 205 SOCY 110, 121 HLTH 111,200 NURS 111 NUTR 214 RCPT 200

Molecular Biology CONCENTRATION

BIOL 160 _____ (2)	Introductory Seminar in Biology	F/S
BIOL 460 _____ (2)	Advanced Seminar in Biology	F/S
OR		
4 hours of BIOL 460 (2:2)		
BIOL 131 _____ (4)	Ecology and Adaptation	F/S
BIOL 132 _____ (4)	Biology of Cells and Microorganisms	F/S
BIOL 231 _____ (4)	Genetics, Evolution, and Development	F/S
BIOL 232 _____ (4)	Organismal Biology	F/S
CHEM 101 _____ (4)	General Chemistry	F/S/SU
CHEM 102 _____ (4)	General Chemistry	S/SU
STAT 200 _____ (3)	Introduction to Statistics	F/S/SU
MATH 137/138/151 _____ (3)	Math Core Curriculum see above	F/S/SU
BIOL 408 _____ (4)	Principles of Microbiology	F/S
BIOL 450 _____ (4)	Molecular Biology	F
BIOL 471 _____ (4)	Biochemistry	F
BIOL 472 _____ (3)	Biochemistry	S

Prerequisites

Freshmen only
 BIOL 131, 132, 231, and 232
 "C" or better in 131(BIOL Majors) or C or better in CHEM 101
 "C" or better in BIOL 132
 BIOL 131, 132, and 231
 CHEM 101
 BIOL 132 and 231
 CHEM 102 & BIOL 231 or BIOL 334
 BIOL 105 or 121 or 131; CHEM 302
 BIOL 471

Concentration elective hours (15-19 Hours): Students must select either 15 credits hours from the courses listed below or 11 credit hours from the courses listed below in combination with 8 hours of physics courses chosen from (PHYS 111:112 or PHYS 221: 222)

PHYS 111:112 _____ (4), _____ (4)	General Physics	F/S
OR		
PHYS 221:222 _____	Physics	F/S
BIOL 301 _____ (2)	Bioethics	S
BIOL 337 _____ (4)	Immunology	S'11 every other S
BIOL 383 _____ (4)	Molecular Forensic Biology	F' 10 every other F
BIOL 409 _____ (4)	Virology	F' 10 every other F
BIOL 419 _____ (3)	Introduction to Molecular Bioinformatics	S' 10 every other S
BIOL 432 _____ (3)	The Eukaryotic Cell	F/S
BIOL 430 _____ (4)	Genes and Development	F/S
BIO 491 _____ (1-6)	Directed Study and Research	F/S
BIOL 492 _____ (1-6)	Undergraduate Research	F/S
BIOL 495 _____ (1-6)	Internship in Biology	F/S

MATH 137 or equivalent
 MATH 151
 BIOL 132:232
 BIOL 231 or BIOL 471/472 or instr. perm.
 BIOL 132:231
 STAT 200 & BIOL132:231 & CHEM 102, or BIOL 471/472, or inst. prm.
 BIOL 132 & CHEM 102
 BIOL 132 and 231 or instr. perm.
 8 cr. in BIOL, 2.5 GPA, Dept. chair & Inst. approval
 8 cr. in BIOL, 2.5 GPA, Dept. chair & Inst. approval
 16 credit hrs. lab science, 2.5 GPA, Dept. chair approval

Sample Schedule B.S. Biology – Molecular Biology 11-12

A concentration in Molecular Biology will prepare a student to answer questions about living organisms and living systems using a set of skills that focus on the molecules and molecular processes specific to living organisms. This concentration is recommended for students who are considering doing graduate research in almost any discipline in Biology, students who are considering the medical profession or students who are interested in pursuing careers in biological research

Fall Semester		Spring Semester	
Freshman Year	Cr.	Freshman Year	Cr.
University Core A: Core 101	3	University Core A: Core 102	3
BIOL 131	4	BIOL 132 "C" or better in 131(majors) or C or better in CHEM 101	4
CHEM 101	4	CHEM 102 (S ONLY) CHEM 101	4
BIOL 160	2	STAT 200	3
MATH 138 or 151	3	CORE	3
University 100	1		
	17		17
Declared Biology majors must earn a grade of "C" or better in BIOL 131, 132, 231, 232, before admission to biology electives requiring these courses as prerequisites. Students who enter the major as a freshman must take BIOL 160, those who transfer or change majors after their freshman year will take (4) hours of BIOL 460 instead.			
Sophomore Year	Cr.	Sophomore Year	Cr.
University Core A: Core 201	3	University Core A: Core 202	3
BIOL 231 "C" or better in BIOL 132 and 160	4	BIOL 232 "C" or better in BIOL 231 and 160	4
CHEM 301 (F Only) CHEM 102 (B.S. Requirement)	4	CHEM 302 (S Only) CHEM 301 (B.S Requirement)	4
CORE	3	CORE	3
	14		14
CORE 101, 102, 201, and 202 must be completed in succession. Students should complete CORE 202 prior to their Junior year.			
Junior Year	Cr.	Junior Year	Cr.
BIOL 471 (F ONLY) BIOL 105 or 121 or 131; CHEM 302	4	BIOL 472 (S ONLY) BIOL 471	3
BIOL 450 (F ONLY) CHEM 102 & BIOL 231 or BIOL 334	4	BIOL 408 BIOL 132 and 231	4
Required BIOL elective or PHYS course	4	Required BIOL elective or PHYS course	4
CORE	3	CORE	3
	15		14
Senior Year	Cr.	Senior Year	Cr.
BIOL 460 BIOL 131, 132, 231, and 232	2	Required BIOL elective for major	4
Required BIOL elective for major	4	CORE	3
Required BIOL elective for major	4	General Elective to reach 120 credit hours	3
CORE	3	General Elective to reach 120 credit hours	3
General Elective to reach 120 credit hours	3		
	16		13

B.S. Requirements: (8 Hours)

CHEM 301 _____ (4) Organic Chemistry

F CHEM 102

CHEM 302 _____ (4) Organic Chemistry

S CHEM 302

Graduation Requirements: Students must attain a minimum 2.0 in major and overall GPA in order to graduate. Major GPA is calculated using grades received in Biology 131, 132, all Biology courses 200 level or higher, all courses outside of Biology used as electives (including: Chem 471:472 and Physics if used as elective) and/or any course used as an elective by academic petition. Students are required to complete a minimum of 120 credit hours.