2012 - 2013 B.S. Biology – Pre-Health Concentration

NAME _____ **ID#**_____

UNIVERSITY CORE

A. Core Foundations

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

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**

B. Core Skills & Knowledge

Courses must be from different disciplines:

MATHEMATICAL SCIENCES (3 SH)

MATH 119, 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

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

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**

COLLEGE CORE

A. National & International 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

GLOBAL PERSPECTIVES (3 SH)

_____ _____ ___ **3**

One of the following: **CVPA** 266; **ENGL** 201; **FORL** 103; **GEOG** 101, 102, 140, 280 **HIST** 101, 102 **INST** 101 **ITEC** 112 **PEAC** 200 **RELN** 112, 205, **SOCY** 121,**THEA** 180 **WMST** 101

B. Supporting Skills & Knowledge

NATURAL SCI. OR MATHEMATICAL SCIENCES (3-4 SH)

STAT 219 ___ 3

HUMANITIES, VISUAL & PERFORMING ARTS, OR FOREIGN LANGUAGES (3-4 SH)

_____ _____ ___ **3-4**

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, 201, 202

SOCIAL/ BEHAV. SCI. OR HEALTH & WELLNESS (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 **HLTH** 111,200 **NURS** 111 **NUTR** 214 **RCPT** 200

Pre-Health CONCENTRATION					**Prerequisites**
BIOL	160	_____ (2)	Introductory Seminar in Biology	F/S	Freshmen only
BIOL	460	_____ (2)	Advanced Seminar in Biology	F/S	BIOL 131, 132, 231, and 232
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	"C" or better in 131 (BIOL Majors) or C or better in CHEM 101
BIOL	231	_____ (4)	Genetics, Evolution, and Development	F/S	"C" or better in BIOL 132
BIOL	232	_____ (4)	Organismal Biology	F/S	BIOL 131, 132, and 231
CHEM	101	_____ (4)	General Chemistry	F/S/SU	
CHEM	102	_____ (4)	General Chemistry	S/SU	CHEM 101
STAT	219	_____ (3)	Introduction to Statistics	F/S/SU	
MATH	119/138/151	_____ (3)	Math Core Curriculum see above	F/S/SU	
Physics Requirement					
Choose one of the following two combinations:					
PHYS	111:112		General Physics	F/S	MATH 137 or equivalent
OR		__(4), __(4)			
PHYS	221:222		Physics	F/S	MATH 151
Microscopic Biology Requirement					
Choose one of the below options:					
BIOL	408		Principles of Microbiology	F/S	BIOL 132 and 231
OR		_____ (4)			
BIOL	450		Molecular Biology	F	CHEM 102 & BIOL 231 or BIOL 334
Physiology Requirement					
Choose one of the following options:					
BIOL	322	_____ (6)	Human Anatomy and Physiology	F/S	BIOL 105 or BIOL 132:231
OR					
BIOL	310/11	__(4), __(4)	Human Structure & Function I & II	F/S	BIOL 105 or BIOL 132:231
OR					
BIOL	351	_____ (4)	Comparative Animal Physiology	S'10 Every other S	BIOL 132; 231; 232 or BIOL 105 and instructor permission
Biochemistry Requirement					
BIOL	471	_____ (4)	Biochemistry	F	BIOL 105 or 121 or 131; CHEM 302
BIOL	472	_____ (3)	Biochemistry	S	BIOL 471

*BIOL 472 is not required but highly recommended

A minimum of 7 credit hours chosen from the below courses:

Courses taken for requirements listed above may not also be counted as electives

BIOL 301 Bioethics (2)	BIOL 432 The Eukaryotic Cell (3)	BIOL 477 Neuroscience (4)	BIOL 310 Human Structure & Function I (4)
BIOL 337 Immunology (4)	BIOL 430 Genes and Development (4)	BIOL 491 Directed Study and Research (1-6)	BIOL 311 Human Structure & Function Ii (4)
BIOL 361 Parasitology (4)	BIOL 450 Molecular Biology (4)	BIOL 492 Undergraduate Research (4)	BIOL 322 Human Anatomy & Physiology
BIOL 409 Virology (4)	BIOL 472 Biochemistry II (3)	BIOL 353 Comparative Animal Physiology (4)	BIOL 408 Principles of Microbiology (4)
BIOL 419 Introduction to Molecular Bioinformatics (3)			

Sample Schedule B.S. Biology – Pre-Health Concentration 12/13

The Pre-Health Concentration is appropriate for students planning to enter graduate, medical, veterinary, optometry, pharmacy, physician assistant or some other health-related school.

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 219	3
MATH 119, 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	4	BIOL 232 "C" or better in BIOL 231	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. Students that do not wish to take 4 lab sciences during the Fall of their junior year may wish to take Physics during the summer after their sophomore year.			
Junior Year	**Cr.**	**Junior Year**	**Cr.**
BIOL 322 or BIOL 310 or CORE	4-6	CORE OR BIOL 311 OR BIOL 351 see above for pre-req.'s	3-4
BIOL 471 (F ONLY) BIOL 105 or 121 or 131; CHEM 302	4	BIOL 472 (S ONLY) BIOL 471	3
BIOL 408 OR 450 (F ONLY) see above for pre-req.'s	4	CORE	3
PHYS 221 (F ONLY) MATH 151 **OR** PHYS 111 MATH 137 OR DEPT. CHAIR PERMISSION	4	PHYS 222 (S ONLY) PHYS 221 **OR** PHYS 112 (F ONLY) PHYS 111	4
	14-18		**13-14**
Senior Year	**Cr.**	**Senior Year**	**Cr.**
BIOL 460 BIOL 131, 132, 231, and 232	2	Required BIOL elective for major	3-4
Required BIOL elective for major	4	General Elective to reach 120 credit hours	3
CORE	3	General Elective to reach 120 credit hours	3
CORE	3	General Elective to reach 120 credit hrs if needed	3
General Elective to reach 120 credit hours	3	General Elective to reach 120 credit hrs if needed	3
	15		**15-16**

B.S. Requirements: (8 hours)

CHEM 301	_____ (4)	Organic Chemistry	F	CHEM 102
CHEM 302	_____ (4)	Organic Chemistry	S	CHEM 301

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.