## CURRICULUM IN BIOLOGICAL SCIENCES INTEGRATIVE BIOLOGY CONCENTRATION

YEAR ENTERED SLU:\_\_ YEAR: 2022 / 2023 NAME: <sup>4</sup>SOCIAL SCIENCES (6) MAJOR HOURS (41) C or Better<sup>2</sup> **MATHEMATICS (9)** <sup>1,2</sup>MATH 161 3 **Core Requirements** (21 hrs) (Anth, Econ, Geog, Psyc, Poli, Soc, CJ) MATH 162 GBIO 151 3 BIOL 152 MATH 163 **GBIO 153** BIOL 154 MIC 205 or <sup>1</sup>MATH 175 and 200 (10) MATH 175 5 MICL 207 <sup>2</sup>GBIO 200 MATH 200 <sup>2</sup>GBIO 312 PHYSICS (8) GBIO 241 PHYS 191 GBIO 341 PLAB 193 GBIO 441\*\* ENGLISH (12) PHYS 192 ENGL 101 PLAB 194 Upper-level Courses (20 hrs) page 2 or 121H ENGL 102 or 122H ENGL 230 or 231 or 232 ENGL 322 \_\_\_\_\_\_ **OTHER (12)** ART ELECTIVE (Mus,Art,Dnc,Thea) LS 102 FOR. LANGUAGES (6) CHEMISTRY (16) COMM211 3 101 3 <sup>2</sup>CHEM 121 \_\_\_\_\_ HIST 102 CLAB 123 \_\_\_\_1\_\_ SE 101 SE 101 is not required of CHEM 122 CLAB 124 <sup>4</sup>ELECTIVES (10) transfer or readmitted students <sup>3</sup>CHEM 261 with 30 hours or more. These <sup>3</sup>CLAB 263 \_\_\_\_\_1\_ students are required to take two additional hours of electives (i.e., <sup>3</sup>CHEM 281 3 <sup>3</sup>CLAB 283 12 hrs instead of 10 hrs) **TOTAL HOURS 120** NOTES: 1Students with Math ACT <21 take MATH 151 in place of MATH 161. Students who are eligible may take MATH 175 and 200 (10 credit hours) in place of MATH 161, 162, and 163 (9 credit hours). Students who take MATH 175 and 200 are required to take one less hour of electives (i.e., 9 hrs instead of 10 hrs). <sup>2</sup>Grade of "C" or better in CHEM 121, MATH 151 or 161, and all Biology courses is required. Also, CHEM 121 and MATH 151 or 161 are prerequisites for GBIO 200, and GBIO 200 is a prerequisite for GBIO 312. <sup>3</sup>NOTE: CHEM 265/267 can NOT be used as prequisites for CHEM 281/283. Other possible sequence of courses include: CHEM 261/CLAB 263 or CHEM 265/CLAB 267 followed by MIC 461 or GBIO 434. Also, GBIO 434 or MIC 461 may be taken in place of CHEM 281/283. Students planning on attending medical, dental, or other professional or graduate schools, and students pursuing a minor in Chemistry, should take CHEM 265/267 and CHEM 266/268 in place of CHEM 261/263 and CHEM 281/283. <sup>4</sup>Students planning to apply to the Master of Business Administration (MBA) program at SELU should take ECON 201 and 202 for the Social Sciences requirement, must take ACCT 200 and FIN 381 and should also take MRKT 303 or MGMT 351 as Electives, and must take GBIO 377 as an upper-level Biology elective. \*\*GBIO 441 fulfills requirement for computer literacy **AVERAGES** ADDITIONAL COURSES: HA HE Average CUM: (Adj) MAJOR (Adj) SLU:

(Adj)

#### INTEGRATIVE BIOLOGY CONCENTRATION

I. Core Courses (page 1): 21 CREDIT HOURS (Grade of "C" or better required in all courses) II. Upper-level Courses for the Integrative Biology Concentration. 20 CREDIT HOURS from the following courses with approval of advisor (Grade of "C" or better required in all courses) - minimum one required - Ecology or Evolution Ecology – GBIO 395 General Ecology 3 hrs and GBIO 397 General Ecology Laboratory 2 hrs Evolution - GBIO 405 Evolutionary Biology 4 hrs GROUP B - Electives BOT 205 Introduction to Botany 4 hrs BOT 347 Vascular Plant Systematics 4 hrs BOT 401 Plant Pathology 4 hrs BOT 426 Plant Physiology 4 hrs BOT 427 Plant Stress Ecophysiology 4 hrs BOT 429 Native Plants of Louisiana 4 hrs BOT 433 Phycology 4 hrs BOT 458 General Mycology 3 hrs BOT 481 Plant Ecology 4 hrs BOT 482 Plant Anatomy 4 hrs GBIO 281 Environmental Awareness 3 hrs GBIO 314 Genetics Laboratory 2 hrs GBIO 377 Applied Biostatistics 4 hrs GBIO 395 General Ecology 3 hrs GBIO 397 General Ecology Laboratory 2 hrs GBIO 404 Ecological Methods 3 hrs GBIO 405 Evolutionary Biology 4 hrs GBIO 406 Wetland Ecology 4 hrs GBIO 407 Forensic Biology 4 hrs GBIO 408 Computational Biology 4 hrs GBIO 410 Introduction to Population Genetics 4 hrs GBIO 418 Community Ecology 4 hrs GBIO 434 Molecular Biology and Biotechnology 4 hrs GBIO 439 Introduction to Fresh Water & Estuarine Biology 4 hrs GBIO 442 Marine Biology 4 hrs GBIO 481 Biogeography 3 hrs GBIO 485 Conservation Biology 4 hrs GBIO 492 History of Biology 3 hrs GBIO 495 Biological Electron Microscopy 4 hrs HORT 301 Introductory Soils 4 hrs HORT 315 Plant Materials I 3 hrs HORT 320 Plant Materials II 4 hrs HORT 328 Plant Propagation 3 hrs HORT 412 Turf Management 3 hrs HORT 424 Arboriculture 3 hrs HORT 426 Coastal Plant Production 3 hrs HORT 428 Organic Gardening 3 hrs MIC 313 Microbial Ecology 3 hrs MIC 325 Advanced General Microbiology 4 hrs MIC 423 Environmental Microbiology 4 hrs MIC 436 Pathogenic Bacteria 4 hrs MIC 438 Soil Microbiology 4 hrs MIC 457 Dairy & Food Microbiology 4 hrs MIC 460 Immunology 4 hrs MIC 461 Bacterial Metabolism 4 hrs MIC 463 Virology 4 hrs MIC 465 Recombinant DNA Techniques 4 hrs ZOO 301 Invertebrate Zoology 4 hrs ZOO 302 Comparative Anatomy 4 hrs ZOO 331 Embbyology 4 hrs ZOO 332 Animal Histology 4 hrs ZOO 352 Field Zoology 4 hrs ZOO 392 Animal Physiology 4 hrs ZOO 409 General Entomology 4 hrs ZOO 428 Waterfowl Management 3 hrs ZOO 438 Mammology 4 hrs ZOO 453 Ecological Parasitology 4 hrs ZOO 455 Medical Parasitology 4 hrs ZOO 456 Ichthyology 4 hrs ZOO 457 Invertebrate Ecology 4 hrs ZOO 458 Fisheries Ecology and Management 4 hrs ZOO 465 Animal Development 4 hrs ZOO 470 Ornithology 4 hrs ZOO 471 Comparative Endocrinology 4 hrs ZOO 475 Animal Behavior 4 hrs ZOO 483 Introduction to Paleontology 4 hrs ZOO 488 Cytology 3 hrs ZOO 499 Neurobiology 4 hrs (NOTE: \* these electives require PRIOR approval of student's advisor and Department Head.)
\*GBIO 409 Internship – Variable credits, 1 to 3 hours (Max 3 hours total) \*GBIO 450 Research Problems - Variable credits, 1 to 4 hours (Max 4 hours total) \*GBIO 493 Special Topics in Biology - Variable credits, 2 to 4 hours Maximum of four credit hours of Biochemistry may be used for concentration elective requirements. NOTE: If CHEM 281 and CLAB 283 are taken to fulfill Chemistry requirements, they may not be used for elective requirements. CHEM 281 Survey of Biochemistry 3 hrs CLAB 283 Survey of Biochemistry Laboratory 1 hr CHEM 481 Biochemistry I 3 hrs CLAB 485 Biochemistry I Laboratory 1 hr CHEM 482 Biochemistry II 3 hrs

CLAB 486 Biochemistry II Laboratory 1 hr

# CURRICULUM IN BIOLOGICAL SCIENCES MICROBIOLOGY / MOLECULAR BIOLOGY CONCENTRATION

YEAR: 2022 / 2023		YEAR ENTERED SLU:
NAME:		W#
MAJOR HOURS (41) <u>C or Better<sup>2</sup></u> Core Requirements (21 hrs) GBIO 1513 BIOL 1521 GBIO 1533 BIOL 1541	MATHEMATICS (9)  1.2MATH 161 3 MATH 162 3 MATH 163 3	(Anth, Econ, Geog, Psyc, Poli, Soc, CJ)
MIC 205 3  MICL 207 1  2GBIO 200 3  2GBIO 312 3  GBIO 241 1  GBIO 341 1  GBIO 441** 1	or <sup>1</sup> MATH 175 and 200 ( MATH 175 5 MATH 200 5  ENGLISH (12) ENGL 101 or 121H 3	PHYSICS (8) PHYS 191 3 PLAB 193 1 PHYS 192 3
Upper-level Courses (20 hrs) page 2	or 121H3 ENGL 1023 ENGL 230 or 231 or 2323 ENGL 3223	_
		<b>OTHER</b> (12)
CHEMISTRY (20)  2CHEM 121	FOR. LANGUAGES (6) 10131023  ELECTIVES (6)	3
NOTES: ¹Students with Math ACT <21 ta	in place of MATH 161, 162 e less hour of electives (i.e. TH 151 or 161, and all Biol GBIO 200, and GBIO 200	2, and 163 (9 credit hours). Students who take , 5 hrs instead of 6 hrs). logy courses is required. Also, CHEM 121
ADDITIONAL COURSES:	CUM: (Adj) MAJOR (Adj) SLU: (Adj)	AVERAGES HA HE QP Average

### MICROBIOLOGY / MOLECULAR BIOLOGY CONCENTRATION

I. Core Courses (page 1): 21 CREDIT HOURS (Grade of "C" or better required in all courses)

II. Upper-level courses for the Microbiology and Molecular Biology Concentration.

20 CREDIT HOURS from the following courses with approval of advisor (Grade of "C" or better required in all courses)

### **GROUP A: Fundamental courses** – total 8 hrs – the following two courses are required

MIC 325 Advanced General Microbiology 4 hrs

MIC 461 Bacterial Metabolism 4 hrs

### **GROUP B: Electives** – minimum 12 hrs

MIC 313 Microbial Ecology 3 hrs

MIC 338 Soil Microbiology 4 hrs

MIC 423 Environmental Microbiology 4 hrs

MIC 436 Pathogenic Bacteria 4 hrs

MIC 457 Dairy and Food Microbiology 4 hrs

MIC 460 Immunology 4 hrs

MIC 463 Virology 4 hrs

MIC 465 Recombinant DNA Techniques 4 hrs

CHEM 482 Biochemistry II 3 hrs

CLAB 486 Biochemistry II Laboratory 1 hr

BOT 401 Plant Pathology 4 hrs

BOT 426 Plant Physiology 4 hrs

BOT 458 General Mycology 3 hrs

GBIO 314 Genetics Laboratory 2 hrs

GBIO 377 Applied Biostatistics 4hrs

GBIO 408 Computational Biology 4 hrs

GBIO 434 Molecular Biology and Biotechnology 4 hrs

GBIO 495 Electron Microscopy 4 hrs

ZOO 392 Animal Physiology 4 hrs

**ZOO 455 Medical Parasitology 4hrs** 

**ZOO 465 Animal Development 4 hrs** 

**ZOO 471 Comparative Endocrinology 4hrs** 

ZOO 499 Neurobiology 4 hrs

(NOTE: \* these electives require PRIOR approval of student's advisor and Department Head.)

\*GBIO 409 Internship – Variable credits, 1 to 3 hours (Max 3 hours total)

\*GBIO 450 Research Problems – Variable credits, 1 to 4 hours (Max 4 hours total)

\*GBIO 493 Special Topics in Biology – Variable credits, 2 to 4 hours

## CURRICULUM IN BIOLOGICAL SCIENCES PLANT SCIENCE CONCENTRATION

YEAR: 2022 / 2023				YEAR	ENTER	ED SLU:
NAME:				W#		
MAJOR HOURS (41) <u>C or Better<sup>2</sup></u> Core Requirements (21 hrs) GBIO 1513 BIOL 1521 GBIO 1533	MATHEMATIC  1,2MATH 161 MATH 162 MATH 163	33	_	(Anth, Ed	con,Geog,	ENCES (6) Psyc, Poli, Soc, CJ)33
BIOL 154 1 1	or <sup>1</sup> MATH 175 an MATH 175 MATH 200 ENGLISH (12)	5 <u> </u>	_	PHYS PLAB PHYS	193 <u> </u>	3 1 3
Upper-level Courses (20 hrs) page 2	ENGL 101 or 121H ENGL 102 or 122H ENGL 230 or 231	33 or 232	-	PLAB	194	1
	FOR. LANGUA			LS 102	LECTIVE	(Mus,Art,Dnc,Thea)31
CHEMISTRY (16)  2CHEM 121 3 CLAB 123 1 CHEM 122 3 CLAB 124 1  3CHEM 261 3 3CLAB 263 1 3CHEM 281 3 3CLAB 283 1	101 102 	)	-	SE 101 SE 101 transfer with 30 student addition	is not re r or read hours of s are req nal hour	equired of mitted students or more. These quired to take two s of electives (i.e., of 10 hrs).
TOTAL HOURS 120  NOTES: <sup>1</sup> Students with Math ACT <21 to take MATH 175 and 200 (10 credit hours) MATH 175 and 200 are required to take of <sup>2</sup> Grade of "C" or better in CHEM 121, MA and MATH 151 or 161 are prerequisites for <sup>3</sup> Students planning on attending medical, diminor in Chemistry, should take CHEM 26 281/283. Also, CHEM 265/267 can NOT may be taken in place of CHEM 281/283.  **GBIO 441 fulfills requirement for comp ADDITIONAL COURSES:	in place of MATH 1 ne less hour of electiva TH 151 or 161, and or GBIO 200, and GE lental, or other profes 55/267 and CHEM 2 be used as prequisite uter literacy	61, 162, ves (i.e., all Biolo BIO 200 : ssional o 66/268 in s for CH	and 163 9 hrs insogy coursis a prerect gradual place of IEM 281  HA	(9 credistead of ses is receptuisite for the school of CHEM/283. All	it hours) 10 hrs). quired. quired. for GBIG ls, and s 1 261/26 so, GBIG AGES QP	Also, CHEM 121 O 312. tudents pursuing a 3 and CHEM

### PLANT SCIENCE CONCENTRATION

I. Core Courses (page 1): 21 CREDIT HOURS (Grade of "C" or better required in all courses)

II. Upper-level Courses for Plant Science Concentration.

20 CREDIT HOURS from the following courses with approval of advisor (Grade of "C" or better required in all courses)

Electives – 20 hrs

BOT 205 Introduction to Botany 4 hrs

BOT 347 Vascular Plant Systematics 4 hrs

BOT 401 Plant Pathology 4 hrs

BOT 426 Plant Physiology 4 hrs

BOT 427 Plant Stress Ecophysiology 4 hrs

BOT 429 Native Plants of Louisiana 4 hrs

BOT 458 General Mycology 3 hrs

BOT 481 Plant Ecology 4 hrs

BOT 482 Plant Anatomy 4 hrs

GBIO 377 Applied Biostatistics 4 hrs

GBIO 395 General Ecology 3 hrs

GBIO 397 General Ecology Laboratory 2 hrs

GBIO 404 Ecological Methods 3 hrs

GBIO 405 Evolutionary Biology 4 hrs

GBIO 406 Wetland Ecology 4 hrs

GBIO 408 Computational Biology 4 hrs

GBIO 410 Introduction to Population Genetics 4 hrs

GBIO 418 Community Ecology 4 hrs

GBIO 434 Molecular Biology and Biotechnology 4 hrs

GBIO 485 Conservation Biology 4 hrs

HORT 301 Introductory Soils 4 hrs

HORT 315 Plant Materials I 3 hrs

HORT 320 Plant Materials II 4 hrs

**HORT 328 Plant Propagation 3 hrs** 

HORT 412 Turf Management 3 hrs

HORT 424 Arboriculture 3 hrs

HORT 426 Coastal Plant Production 3 hrs

HORT 428 Organic Gardening 3 hrs

HORT 490 Survey of the Horticulture Industry 4 hrs

ZOO 409 General Entomology 4 hrs

(NOTE: \* these electives require PRIOR approval of student's advisor and Department Head.)

\*GBIO 409 Internship – Variable credits, 1 to 3 hours (Max 3 hours total)

\*GBIO 450 Research Problems – Variable credits, 1 to 4 hours (Max 4 hours total)

\*GBIO 493 Special Topics in Biology – Variable credits, 2 to 4 hours

\*HORT 495 Seminar - 1 hour

## **CURRICULUM IN BIOLOGICAL SCIENCES** BIOLOGY EDUCATION CONCENTRATION

20	122	_	20	023

Date:	Student:
Advisor:	W#
BIOLOGY (41) C or Better* (41)	EDUCATION (33)
Core Requirements (21 hrs)	**EDUC 2023
*GBIO 1513	*EDUC 4073
*BIOL 1521	*EDUC 4723
*GBIO 1533	*EDUC 4536
*BIOL 1541_	*EDUC 4853
*MIC 205 or 2233	*EDUC 4869
*MICL 207 or 224	*EDUC 3163
*¹GBIO 200 3	*SPED 2003
*1GBIO 3123	<del>_</del> _
*GBIO 241 1	SOCIAL SCIENCES (6)
*GBIO 3411	PSYC 1013
* <sup>1</sup> GBIO 200 3 * <sup>1</sup> GBIO 312 3 *GBIO 241 1 *GBIO 341 1 *GBIO 441 1	Social Science elective3
Upper-level Courses (20 hrs) page 2	
	$\underline{\mathbf{OTHER}}\tag{11}$
	HIST 417 <sup>G</sup> 3
$\underline{\mathbf{CHEMISTRY}} \tag{14}$	SE 101 2
*1CHEM 121 3	COMM 210 <u>3</u>
*CLAB 1231	ART elective (Mus,Art,Dnc,Thea)3
*CHEM 1223	
*CLAB 124	
*CHEM 2613	
*CHEM 2813	TOTAL HOURS 120
ENGLISH (9)	
ENGL 1013	
*ENGL 1023	
ENGL 230 or 231 or 2323	
¹MATHEMATICS (6)	
*1MATH 161 (or MATH 151) 3	
*MATH 162 or 1653	

SE 101 is not required for transfer or readmitted Southeastern students with 30 hours or more. These students are required to take two hours of electives.

<sup>\*</sup>A grade of C or better is required in these courses.

\*\*A grade of B or better is required in these courses.

¹CHEM 121 and MATH 151 or 161 are prerequisites for GBIO 200, and GBIO 200 is a prerequisite for GBIO 312.

### I. Core Courses (page 1): 21 CREDIT HOURS

## II. Upper-level Courses for the Biology Education Concentration 20 CREDIT HOURS required

\*A grade of C or better is required in these courses

\*GBIO 395 General Ecology 3 hrs

\*GBIO 397 General Ecology Laboratory 2 hrs

\*GBIO 405 Evolutionary Biology 4 hrs

\*GBIO 498 Biological Science for Teachers 3 hrs

\*ZOO 302 Comparative Anatomy 4 hrs

\*ZOO 392 Animal Physiology 4 hrs

## CURRICULUM IN BIOLOGICAL SCIENCES BUSINESS CONCENTRATION

YEAR: 2018 / 2019				YEAR E	NTERE	D SLU:
NAME:		_		W#		
MAJOR HOURS (41) <u>C or Better</u> <sup>2</sup> Core Requirements (21 hrs) GBIO 1513 BIOL 1521_ GBIO 1533	MATHEMATIC  1,2MATH 161  MATH 162  MATH 163	3	_	(Anth, Eco	n,Geog, Ps	NCES (6) syc, Poli, Soc) 3
BIOL 1541	or <sup>1</sup> MATH 165 at MATH 165 MATH 200	3 5	_	PLAB 19	91 <u> </u>	_3
GBIO 441**1 Upper-level Courses (20 hrs) page 2	ENGL 101 or 121H ENGL 102 or 122H	3		PHYS 19 PLAB 19 ELECTI	94	_3
	ENGL 230 or 23.	or 232			` '	
					ECTIVE (N	Mus,Art,Dnc,Thea)
CHEMISTRY (16) <sup>2</sup> CHEM 1213  CLAB 1231  CHEM 1223	101102			LS 102 COMM2 HIST SE 101 SE 101 is		_1
CLAB 124	<sup>2</sup> ACCT 200 (3) <sup>2</sup> FIN 381 (3) <sup>2</sup> MRKT 303 or M		- -	transfer of with 30 h students	or readm nours or are requal al hours (	itted students more. These ired to take two of electives (i.e.,
TOTAL HOURS 120						
NOTES: <sup>1</sup> Students with Math ACT <21 tal take MATH 165 and 200 (8 credit hours) in MATH 165 and 200 are required to take one <sup>2</sup> Grade of "C" or better in CHEM 121, MAT all Biology courses is required. CHEM 121 prerequisite for GBIO 312. <sup>3</sup> Students planning on attending medical, de minor in Chemistry, should take CHEM 265 prerequisites for CHEM 281/283. <sup>4</sup> Students in the Business Concentration sho	place of MATH 1 e additional hour of the 151/161, ACC and MATH 151/1 ental, or other profe 5/267 and CHEM 2	61, 162, ε f elective Γ 200, FII 61 are pr essional o 266/268.	and 163 (s (i.e., 11 N 381, ar erequisitor graduat Also, CF	9 credit has hrs instead MRKT es for GB. e schools, HEM 265/	ours). S ad of 10 303 or 1 IO 200, , and stu 267 can	tudents who take hrs). MGMT 351, and and GBIO 200 is a dents pursuing a NOT be used as
**GBIO 441 fulfills requirement for compu	ter literacy			AVERAG	GES	-
ADDITIONAL COURSES:		CUM: (Adj) MAJOR (Adj)		HE	QP	Average
		SLU: (Adj)				 

I. Core Courses (page 1): 21 CREDIT HOURS (Grade of "C" or better required in all courses)

II. Upper-level Courses: 20 CREDIT HOURS from the following courses with approval of advisor (Grade of "C" or better required in all courses)

#### GBIO 377 is required for the Business Concentration

GBIO 377 Applied Biostatistics 4 hrs

**GROUP A** – minimum one required – Ecology or Evolution

Ecology – GBIO 395 General Ecology 3 hrs and GBIO 397 General Ecology Laboratory 2 hrs

Evolution – GBIO 405 Evolutionary Biology 4 hrs

**GROUP B** – Electives

BOT 205 Introduction to Botany 4 hrs

BOT 347 Vascular Plant Systematics 4 hrs

BOT 401 Plant Pathology 4 hrs

BOT 426 Plant Physiology 4 hrs

BOT 427 Plant Stress Ecophysiology 4 hrs

BOT 429 Native Plants of Louisiana 4 hrs

BOT 481 Plant Ecology 4 hrs

BOT 482 Plant Anatomy 4 hrs

GBIO 281 Environmental Awareness 3 hrs

GBIO 314 Genetics Laboratory 2 hrs

GBIO 395 General Ecology 3 hrs

GBIO 397 General Ecology Laboratory 2 hrs

GBIO 404 Ecological Methods 3 hrs

GBIO 405 Evolutionary Biology 4 hrs

GBIO 406 Wetland Ecology 4 hrs

GBIO 407 Forensic Biology 4 hrs

GBIO 408 Computational Biology

GBIO 410 Introduction to Population Genetics 4 hrs

GBIO 418 Community Ecology 4 hrs

GBIO 439 Introduction to Fresh Water & Estuarine Biology 4 hrs

GBIO 434 Molecular Biology and Biotechnology 4 hrs

GBIO 481 Biogeography 3 hrs

GBIO 485 Conservation Biology 4 hrs

GBIO 492 History of Biology 3 hrs

GBIO 495 Biological Electron Microscopy 4 hrs

HORT 301 Introductory Soils 4 hrs

HORT 315 Plant Materials I 3 hrs

HORT 320 Plant Materials II 4 hrs

HORT 328 Plant Propagation 3 hrs

HORT 412 Turf Management 3 hrs

HORT 424 Arboriculture 3 hrs

HORT 426 Coastal Plant Production 3 hrs

HORT 428 Organic Gardening 3 hrs

MIC 313 Microbial Ecology 3 hrs

MIC 325 Advanced General Microbiology 4 hrs

MIC 423 Environmental Microbiology 4 hrs

MIC 436 Pathogenic Bacteria 4 hrs

MIC 457 Dairy & Food Microbiology 4 hrs

MIC 460 Immunology 4 hrs

MIC 461 Bacterial Metabolism 4 hrs

MIC 463 Virology 4 hrs

MIC 465 Recombinant DNA Techniques 4 hrs

ZOO 301 Invertebrate Zoology 4 hrs

ZOO 302 Comparative Anatomy 4 hrs

ZOO 332 Animal Histology 4 hrs

ZOO 352 Field Zoology 4 hrs

ZOO 392 Animal Physiology 4 hrs

ZOO 409 General Entomology 4 hrs

ZOO 453 Ecological Parasitology 4 hrs

ZOO 455 Medical Parasitology 4 hrs

ZOO 456 Ichthyology 4 hrs

ZOO 457 Invertebrate Ecology 4 hrs

ZOO 458 Fisheries Ecology and Management 4 hrs

ZOO 465 Animal Development 4 hrs

ZOO 471 Comparative Endocrinology 4 hrs

ZOO 475 Animal Behavior 4 hrs

ZOO 488 Cytology 3 hrs

ZOO 499 Neurobiology 4 hrs

(NOTE: \* these electives require PRIOR approval of student's advisor and Department Head.)

\*GBIO 409 Internship - Variable credits, 1 to 3 hours (Max 3 hours total)

\*GBIO 450 Research Problems – Variable credits, 1 to 4 hours (Max 4 hours total)

\*GBIO 493 Special Topics in Biology - Variable credits, 2 to 4 hours

Maximum of four credit hours of Biochemistry may be used for concentration elective requirements. NOTE: If CHEM 281 and CLAB 283 are taken to fulfill Chemistry requirements, they may not be used for elective requirements.

CHEM 281 Survey of Biochemistry 3 hrs

CLAB 283 Survey of Biochemistry Laboratory 1 hr

CHEM 481 Biochemistry I 3 hrs

CLAB 485 Biochemistry I Laboratory 1 hr

CHEM 482 Biochemistry II 3 hrs

CLAB 486 Biochemistry II Laboratory 1 hr

# CURRICULUM IN BIOLOGICAL SCIENCES ECOLOGY, ENVIRONMENTAL, and EVOLUTIONARY BIOLOGY CONCENTRATION

YEAR: 2018/2019		YEAR ENTERED SLU:
NAME:		W#
MAJOR HOURS (41) <u>C or Better</u> <sup>2</sup> Core Requirements (21 hrs) GBIO 151 3 BIOL 152 1 GBIO 153 3	MATHEMATICS (9)  1,2MATH 161 3  MATH 162 3  MATH 163 3	SOCIAL SCIENCES (6) (Anth, Econ, Geog, Psyc, Poli, Soc)
BIOL 1541 MIC 2053 MICL 2071 <sup>2</sup> GBIO 2003 <sup>2</sup> GBIO 3123 GBIO 2411 GBIO 3411 GBIO 441**1	or <sup>1</sup> MATH 165 and 200 (8) MATH 1653 MATH 2005	PHYSICS (8) PHYS 1913 PLAB 1931 PHYS 1923
Upper-level Courses (20 hrs) page 2	ENGL 101 or 121H S ENGL 102 or 122H S ENGL 230 or 231 or 232 S ENGL 322 S ENGL 322 S ENGL 322	PLAB 1941
CHEMISTRY (16) <sup>2</sup> CHEM 121	FOR. LANGUAGES (6)10131023  ELECTIVES (10)	OTHER (12)  ART ELECTIVE (Mus,Art,Dnc,Thea)
TOTAL HOURS 120		hrs instead of 10 hrs).
NOTES: <sup>1</sup> Students with Math ACT <21 tatake MATH 165 and 200 (8 credit hours) in MATH 165 and 200 are required to take on <sup>2</sup> Grade of "C" or better in CHEM 121, MA and MATH 151 or 161 are prerequisites for <sup>3</sup> Students planning on attending medical, deminor in Chemistry, should take CHEM 26: prerequisites for CHEM 281/283.  **GBIO 441 fulfills requirement for computational courses:	place of MATH 161, 162, and e additional hour of electives (in the 151 or 161, and all Biology GBIO 200, and GBIO 200 is a central, or other professional or ground the state of the state	163 (9 credit hours). Students who take i.e., 11 hrs instead of 10 hrs). It courses is required. Also, CHEM 121 a prerequisite for GBIO 312. Traduate schools, and students pursuing a so, CHEM 265/267 can NOT be used as

### ECOLOGY, ENVIRONMENTAL, and EVOLUTIONARY BIOLOGY CONCENTRATION

I. Core Courses (page 1): 21 CREDIT HOURS (Grade of "C" or better required in all courses)

II. Upper-level courses for the Ecology, Environmental, Evolutionary Biology Concentration:

20 CREDIT HOURS from the following courses with approval of advisor (Grade of "C" or better required in all courses)

### Group A: Fundamental Courses – total 13 hrs – the following four courses are required

GBIO 377 Biostatistics 4 hrs

GBIO 395 General Ecology 3 hrs

GBIO 397 General Ecology Laboratory 2 hrs

GBIO 405 Evolutionary Biology 4 hrs

### **Group B: Electives** – minimum 7 hrs from these electives. Only one 200 level course may be selected.

BOT 205 Introduction to Botany 4 hrs

BOT 347 Vascular Plant Systematics 4 hrs

BOT 426 Plant Physiology 4 hrs

BOT 427 Plant Stress Ecophysiology 4 hrs

BOT 429 Native Plants of Louisiana 4 hrs

BOT 481 Plant Ecology 4 hrs

BOT 482 Plant Anatomy 4 hrs

GBIO 281 Environmental Awareness 3 hrs

GBIO 404 Ecological Methods 3 hrs

GBIO 406 Wetlands Ecology 4 hrs

GBIO 408 Computational Biology 4 hrs

GBIO 410 Introduction to Population Genetics 4 hrs

GBIO 418 Community Ecology 4 hrs

GBIO 434 Molecular Biology and Biotechnology 4 hrs

GBIO 439 Freshwater & Estuary Biology 4 hrs

GBIO 442 Marine Biology 4 hrs

GBIO 481 Biogeography 3 hrs

GBIO 485 Conservation Biology 4 hrs

ZOO 301 Invertebrate Zoology 4 hrs

ZOO 302 Comparative Anatomy of the Vertebrates 4 hrs

ZOO 392 Animal Physiology 4 hrs

ZOO 352 Field Zoology 4 hrs

ZOO 409 General Entomology 4 hrs

ZOO 456 Ichthyology 4 hrs

ZOO 458 Fisheries Ecology & Mgmt 4 hrs

ZOO 457 Invertebrate Ecology 4 hrs

ZOO 470 Ornithology 4 hrs

ZOO 465 Animal Development 4 hrs

ZOO 475 Animal Behavior 4 hrs

MIC 313 Microbial Ecology 3 hrs

MIC 438 Soil Microbiology 4 hrs

MIC 423 Environmental Microbiology 4 hrs

(NOTE: \* these electives require PRIOR approval of student's advisor and Department Head.)

\*GBIO 409 Internship – Variable credits, 1 to 3 hours (Max 3 hours total)

\*GBIO 450 Research Problems – Variable credits, 1 to 4 hours (Max 4 hours total)

\*GBIO 493 Special Topics in Biology – Variable credits, 2 to 4 hours

Maximum four credit hours from these courses may be applied to concentration elective requirements.

CMPS 450 Spatial Database & Applications 3 hrs

GEOG 495 Introduction to GIS 3 hrs

POLI 446 Politics & the Environment 3 hrs

SOC 360 Environmental Sociology 3 hrs

## CURRICULUM IN BIOLOGICAL SCIENCES INTEGRATIVE BIOLOGY CONCENTRATION

YEAR: 2018 / 2019		YEAR ENTERED SLU:
NAME:		W#
MAJOR HOURS (41) <u>C or Better<sup>2</sup></u> Core Requirements (21 hrs) GBIO 1513 BIOL 1521 GBIO 1533 BIOL 154	MATHEMATICS (9)  1,2MATH 161 3  MATH 162 3  MATH 163 3	3
BIOL 154 1 MIC 205 3 MICL 207 1 <sup>2</sup> GBIO 200 3 <sup>2</sup> GBIO 312 3 GBIO 241 1 GBIO 341 1 GBIO 441** 1 Upper-level Courses (20 hrs) page 2	or <sup>1</sup> MATH 165 and 200 (8 MATH 165 3 MATH 200 5 ENGLISH (12) ENGL 101 or 121H 3 ENGL 102 or 122H 3	PHYSICS (8) PHYS 1913 PLAB 1931 PHYS 1923 PLAB 1941
CHEMISTRY (16)  2CHEM 121 3  CLAB 123 1	ENGL 230 or 231 or 2323 ENGL 3223  FOR. LANGUAGES (6)10131023	OTHER (12) ART ELECTIVE (Mus,Art,Dnc,Thea)3 LS 1021 COMM211 3
CHEM 122 3 CLAB 124 1  3CHEM 261 3  3CLAB 263 1  3CHEM 281 3  3CLAB 283 1	<sup>4</sup> ELECTIVES (10)	
TOTAL HOURS 120		
MATH 165 and 200 are required to take of <sup>2</sup> Grade of "C" or better in CHEM 121, MA and MATH 151 or 161 are prerequisites for <sup>3</sup> Students planning on attending medical, of minor in Chemistry, should take CHEM 20 prequisites for CHEM 281/283.	n place of MATH 161, 162, ne additional hour of elective ATH 151 or 161, and all Biolor GBIO 200, and GBIO 200 lental, or other professional of 65/267 and CHEM 266/268.  of Business Administration (1) take GBIO 377 as an upper-	and 163 (9 credit hours). Students who take es (i.e., 11 hrs instead of 10 hrs). logy courses is required. Also, CHEM 121 is a prerequisite for GBIO 312. or graduate schools, and students pursuing a Also, CHEM 265/267 can NOT be used as MBA) program at SELU should take ECON and FIN 381 and should also take MRKT-level Biology elective.
ADDITIONAL COURSES:	НА	AVERAGES HE QP Average
	CUM: (Adj) MAJOR (Adj) SUU:	

(Adj)

### INTEGRATIVE BIOLOGY CONCENTRATION

I. Core Courses (page 1): 21 CREDIT HOURS (Grade of "C" or better required in all courses)

II. Upper-level Courses for the Integrative Biology Concentration.

20 CREDIT HOURS from the following courses with approval of advisor (Grade of "C" or better required in all courses)

**GROUP A** – minimum one required – Ecology or Evolution

Ecology - GBIO 395 General Ecology 3 hrs and GBIO 397 General Ecology Laboratory 2 hrs

Evolution – GBIO 405 Evolutionary Biology 4 hrs

**GROUP B** – Electives

BOT 205 Introduction to Botany 4 hrs

BOT 347 Vascular Plant Systematics 4 hrs

BOT 401 Plant Pathology 4 hrs

BOT 426 Plant Physiology 4 hrs

BOT 427 Plant Stress Ecophysiology 4 hrs

BOT 429 Native Plants of Louisiana 4 hrs

BOT 481 Plant Ecology 4 hrs

BOT 482 Plant Anatomy 4 hrs

GBIO 281 Environmental Awareness 3 hrs

GBIO 314 Genetics Laboratory 2 hrs

<sup>4</sup>GBIO 377 Applied Biostatistics 4 hrs

GBIO 395 General Ecology 3 hrs

GBIO 397 General Ecology Laboratory 2 hrs

GBIO 404 Ecological Methods 3 hrs

GBIO 405 Evolutionary Biology 4 hrs

GBIO 406 Wetland Ecology 4 hrs

GBIO 407 Forensic Biology 4 hrs

GBIO 408 Computational Biology 4 hrs

GBIO 410 Introduction to Population Genetics 4 hrs

GBIO 418 Community Ecology 4 hrs

GBIO 434 Molecular Biology and Biotechnology 4 hrs

GBIO 439 Introduction to Fresh Water & Estuarine Biology 4 hrs

GBIO 481 Biogeography 3 hrs

GBIO 485 Conservation Biology 4 hrs

GBIO 492 History of Biology 3 hrs

GBIO 495 Biological Electron Microscopy 4 hrs

HORT 301 Introductory Soils 4 hrs

HORT 315 Plant Materials I 3 hrs

HORT 320 Plant Materials II 4 hrs

HORT 328 Plant Propagation 3 hrs

HORT 412 Turf Management 3 hrs

HORT 424 Arboriculture 3 hrs

HORT 426 Coastal Plant Production 3 hrs

HORT 428 Organic Gardening 3 hrs

MIC 313 Microbial Ecology 3 hrs

MIC 325 Advanced General Microbiology 4 hrs

MIC 423 Environmental Microbiology 4 hrs

MIC 436 Pathogenic Bacteria 4 hrs

MIC 457 Dairy & Food Microbiology 4 hrs

MIC 460 Immunology 4 hrs

MIC 461 Bacterial Metabolism 4 hrs

MIC 463 Virology 4 hrs

MIC 465 Recombinant DNA Techniques 4 hrs

ZOO 301 Invertebrate Zoology 4 hrs

ZOO 302 Comparative Anatomy 4 hrs

ZOO 332 Animal Histology 4 hrs

ZOO 352 Field Zoology 4 hrs

ZOO 392 Animal Physiology 4 hrs

ZOO 409 General Entomology 4 hrs

ZOO 453 Ecological Parasitology 4 hrs

ZOO 455 Medical Parasitology 4 hrs

ZOO 456 Ichthyology 4 hrs

ZOO 457 Invertebrate Ecology 4 hrs

ZOO 458 Fisheries Ecology and Management 4 hrs

ZOO 465 Animal Development 4 hrs

ZOO 471 Comparative Endocrinology 4 hrs

ZOO 475 Animal Behavior 4 hrs

ZOO 488 Cytology 3 hrs

ZOO 499 Neurobiology 4 hrs

(NOTE: \* these electives require PRIOR approval of student's advisor and Department Head.)

\*GBIO 409 Internship – Variable credits, 1 to 3 hours (Max 3 hours total)

\*GBIO 450 Research Problems – Variable credits, 1 to 4 hours (Max 4 hours total)

\*GBIO 493 Special Topics in Biology - Variable credits, 2 to 4 hours

Maximum of four credit hours of Biochemistry may be used for concentration elective requirements. NOTE: If CHEM 281 and CLAB 283 are taken to fulfill Chemistry requirements, they may not be used for elective requirements.

CHEM 281 Survey of Biochemistry 3 hrs

CLAB 283 Survey of Biochemistry Laboratory 1 hr

CHEM 481 Biochemistry I 3 hrs

CLAB 485 Biochemistry I Laboratory 1 hr

CHEM 482 Biochemistry II 3 hrs

CLAB 486 Biochemistry II Laboratory 1 hr

# CURRICULUM IN BIOLOGICAL SCIENCES MICROBIOLOGY / MOLECULAR BIOLOGY CONCENTRATION

YEAR: 2018 / 2019		YEAR ENTERED SLU:
NAME:		W#
MAJOR HOURS (41) <u>C or Better<sup>2</sup></u> Core Requirements (21 hrs) GBIO 1513 BIOL 1521 GBIO 1533	MATHEMATICS (9)  1,2MATH 161 3  MATH 162 3  MATH 163 3	SOCIAL SCIENCES (6) (Anth, Econ, Geog, Psyc, Poli, Soc) 33
BIOL 1541	or <sup>1</sup> MATH 165 and 200 (8) MATH 1653_ MATH 2005  ENGLISH (12) ENGL 101 or 121H3 ENGL 102 or 122H3 ENGL 230 or 231 or 2323 ENGL 3223_	PHYSICS (8) PHYS 1913 PLAB 1931 PHYS 1923 PLAB 1941
		OTHER (12)
MATH 165 and 200 are required to take of "C" or better in CHEM 121, M	in place of MATH 161, 162, and one additional hour of electives ATH 151 or 161, and all Biolog	ad 163 (9 credit hours). Students who take (i.e., 7 hrs instead of 6 hrs).  By courses is required. Also, CHEM 121
and MATH 151 or 161 are prerequisites to **GBIO 441 fulfills requirement for com  ADDITIONAL COURSES:	puter literacy  A  CUM: (Adj) MAJOR (Adj) (Adj) SLU:	a prerequisite for GBIO 312.  AVERAGES IA HE QP Average

### MICROBIOLOGY / MOLECULAR BIOLOGY CONCENTRATION

I. Core Courses (page 1): 21 CREDIT HOURS (Grade of "C" or better required in all courses)

II. Upper-level courses for the Microbiology and Molecular Biology Concentration.

20 CREDIT HOURS from the following courses with approval of advisor (Grade of "C" or better required in all courses)

### **GROUP A: Fundamental courses** – total 8 hrs – the following two courses are required

MIC 325 Advanced General Microbiology 4 hrs

MIC 461 Bacterial Metabolism 4 hrs

#### **GROUP B: Electives** – minimum 12 hrs

MIC 313 Microbial Ecology 3 hrs

MIC 336 Pathogenic Microbiology 4 hrs

MIC 338 Soil Microbiology 4 hrs

MIC 423 Environmental Microbiology 4 hrs

MIC 457 Dairy and Food Microbiology 4 hrs

MIC 460 Immunology 4 hrs

MIC 463 Virology 4 hrs

MIC 465 Recombinant DNA Techniques 4 hrs

CHEM 482 Biochemistry II 3 hrs

CLAB 486 Biochemistry II Laboratory 1 hr

BOT 401 Plant Pathology 4 hrs

BOT 426 Plant Physiology 4hrs

GBIO 314 Genetics Laboratory 2 hrs

GBIO 377 Applied Biostatistics 4hrs

GBIO 408 Computational Biology 4 hrs

GBIO 434 Molecular Biology and Biotechnology 4 hrs

GBIO 495 Electron Microscopy 4 hrs

ZOO 392 Animal Physiology 4 hrs

**ZOO 455 Medical Parasitology 4hrs** 

**ZOO 465 Animal Development 4 hrs** 

**ZOO 471 Comparative Endocrinology 4hrs** 

ZOO 499 Neurobiology 4 hrs

(NOTE: \* these electives require PRIOR approval of student's advisor and Department Head.)

\*GBIO 409 Internship – Variable credits, 1 to 3 hours (Max 3 hours total)

\*GBIO 450 Research Problems – Variable credits, 1 to 4 hours (Max 4 hours total)

\*GBIO 493 Special Topics in Biology – Variable credits, 2 to 4 hours

# CURRICULUM IN BIOLOGICAL SCIENCES PLANT SCIENCE CONCENTRATION

YEAR: 2018 / 2019				YEAR E	NTERE	D SLU:
NAME:		_		W#		
MAJOR HOURS (41) <u>C or Better</u> <sup>2</sup> Core Requirements (21 hrs) GBIO 1513 BIOL 1521_ GBIO 1533_ BIOL 1541	MATHEMATIO  1,2MATH 161 MATH 162 MATH 163	33	- -	(Anth, Eco	n,Geog, Ps	SYCES (6) Syc, Poli, Soc)  3  3  3
MIC 205 3	or <sup>1</sup> MATH 165 a MATH 165 MATH 200 ENGLISH (12) ENGL 101 or 121H	35	- -	PHYSIC PHYS 19 PLAB 19 PLAB 19	91	_3 _1 _3 _1
Upper-level Courses (20 hrs) page 2	or 121H ENGL 102 or 122H ENGL 230 or 23 ENGL 322	3 1 or 232	-			
	FOR. LANGUA				ECTIVE (N	Mus,Art,Dnc,Thea) _313
CHEMISTRY (16) <sup>2</sup> CHEM 1213  CLAB 1231  CHEM 1223  CLAB 1241 <sup>3</sup> CHEM 2613 <sup>3</sup> CLAB 2631 <sup>3</sup> CHEM 2813	101 102 	0)	-	SE 101 SE 101 i transfer owith 30 l students	s not req or readm nours or are requal hours	_3 _2uired of itted students more. These ired to take two of electives (i.e.,
<sup>3</sup> CLAB 283111111			-			
NOTES: <sup>1</sup> Students with Math ACT <21 tal take MATH 165 and 200 (8 credit hours) in MATH 165 and 200 are required to take one <sup>2</sup> Grade of "C" or better in CHEM 121, MAT and MATH 151 or 161 are prerequisites for <sup>3</sup> Students planning on attending medical, de minor in Chemistry, should take CHEM 265 prequisites for CHEM 281/283.	place of MATH 1 e additional hour of TH 151 or 161, and GBIO 200, and Gntal, or other profes/267 and CHEM 2	61, 162, a of elective d all Biolo BIO 200 essional o	and 163 (s (i.e., 11 ogy cours is a prere graduat	9 credit h hrs inste ses is requequisite for the schools	ours). S ad of 10 aired. Al or GBIO , and stu	tudents who take hrs). lso, CHEM 121 312. dents pursuing a
**GBIO 441 fulfills requirement for compu ADDITIONAL COURSES:	ter literacy	CUM: (Adj)			QP	Average

### PLANT SCIENCE CONCENTRATION

I. Core Courses (page 1): 21 CREDIT HOURS (Grade of "C" or better required in all courses) II. Upper-level Courses for Plant Science Concentration.

20 CREDIT HOURS from the following courses with approval of advisor (Grade of "C" or better required in all courses)

Electives – 20 hrs

BOT 205 Introduction to Botany 4 hrs

BOT 347 Vascular Plant Systematics 4 hrs

BOT 401 Plant Pathology 4 hrs

BOT 426 Plant Physiology 4 hrs

BOT 427 Plant Stress Ecophysiology 4 hrs

BOT 429 Native Plants of Louisiana 4 hrs

BOT 481 Plant Ecology 4 hrs

BOT 482 Plant Anatomy 4 hrs

GBIO 377 Applied Biostatistics 4 hrs

GBIO 395 General Ecology 3 hrs

GBIO 397 General Ecology Laboratory 2 hrs

GBIO 404 Ecological Methods 3 hrs

GBIO 405 Evolutionary Biology 4 hrs

GBIO 406 Wetland Ecology 4 hrs

GBIO 408 Computational Biology 4 hrs

GBIO 418 Community Ecology 4 hrs

GBIO 434 Molecular Biology and Biotechnology 4 hrs

GBIO 485 Conservation Biology 4 hrs

HORT 301 Introductory Soils 4 hrs

HORT 315 Plant Materials I 3 hrs

HORT 320 Plant Materials II 4 hrs

**HORT 328 Plant Propagation 3 hrs** 

HORT 412 Turf Management 3 hrs

HORT 424 Arboriculture 3 hrs

HORT 426 Coastal Plant Production 3 hrs

HORT 428 Organic Gardening 3 hrs

HORT 490 Survey of the Horticulture Industry 4 hrs

ZOO 409 General Entomology 4 hrs

(NOTE: \* these electives require PRIOR approval of student's advisor and Department Head.)

\*GBIO 409 Internship – Variable credits, 1 to 3 hours (Max 3 hours total)

\*GBIO 450 Research Problems – Variable credits, 1 to 4 hours (Max 4 hours total)

\*GBIO 493 Special Topics in Biology – Variable credits, 2 to 4 hours

\*HORT 495 Seminar – 1 hour

## CURRICULUM IN BIOLOGICAL SCIENCES BUSINESS CONCENTRATION

YEAR: 2022 / 2023				YEAR :	ENTER	ED SLU:
NAME:		_		W#		
MAJOR HOURS (41) <u>C or Better</u> Core Requirements (21 hrs)  GBIO 151 3  BIOL 152 1  GBIO 153 3	MATHEMATIO  1.2MATH 161 MATH 162 MATH 163	33	_	(Anth, Ec <sup>4</sup> ECON <sup>4</sup> ECON ACCT	con,Geog, 201 202 200	COURSES (15) Psyc, Poli, Soc, CJ)333
BIOL 1541	or <sup>1</sup> <b>MATH 175 a</b> MATH 175 MATH 200	5		MRKT	303 or N	3 MGMT 3513
<sup>2</sup> GBIO 312 3 GBIO 241 1 GBIO 341 1 GBIO 441** 1	ENGLISH (12)		_	PLAB 1	191 <u> </u>	3 _1 _3
Upper-level Courses (20 hrs) page 2	ENGL 101 or 121H ENGL 102 or 122H	33	_	PLAB 1	194	_1
	ENGL 230 or 23	1 or 232			(1)	,
					LECTIVE	(Mus,Art,Dnc,Thea)
CHEMISTRY (16) <sup>2</sup> CHEM 121	FOR. LANGUA101102	33	_	LS 102 COMM HIST_ SE 101 SE 101 transfer with 30 students addition	is not re or readi hours of a are requal hours	1 3 3 2 quired of mitted students r more. These uired to take two s of electives (i.e., f 10 hrs)
TOTAL HOURS 120  NOTES: <sup>1</sup> Students with Math ACT <21 ta take MATH 175 and 200 (10 credit hours) MATH 175 and 200 are not required to tak <sup>2</sup> Grade of "C" or better in CHEM 121, MA MGMT 351, and all Biology courses is req and GBIO 200 is a prerequisite for GBIO 3 <sup>3</sup> Students planning on attending medical, de minor in Chemistry, should take CHEM 26	in place of MATH e the one hour of el TH 151/161, ECON uired. CHEM 121 el12. ental, or other profe 5/267 and CHEM 2	161, 162 lectives (201, 201, 201, 201, 201, 201, 201, 201,	, and 163 i.e., 0 hr 02, ACC FH 151/2 or gradua n place o	3 (9 credi instead o Γ 200, FI 161 are po te school of CHEM	t hours). f 1 hr). N 381, M rerequisites, and st I 261/26.	Students who take MRKT 303 or tes for GBIO 200, udents pursuing a 3 and CHEM
281/283. Also, CHEM 265/267 can NOT be may be taken in place of CHEM 281/283. <sup>4</sup> ECON 201 and ECON 202 fulfill the Soci **GBIO 441 fulfills requirement for computations.	al Sciences require		CHEM 2	81/283. <i>F</i>	Also, GB	31O 434 or MIC 461
ADDITIONAL COURSES:	·	CUM:			QP	Average
		/ A 115				

SLU: (Adj)

### BUSINESS CONCENTRATION

I. Core Courses (page 1): 21 CREDIT HOURS (Grade of "C" or better required in all courses) II. Upper-level Courses: 20 CREDIT HOURS from the following courses with approval of advisor (Grade of "C" or better required in all courses) GBIO 377 is required for the Business Concentration

GBIO 377 Applied Biostatistics 4 hrs

**GROUP A** – minimum one required – Ecology or Evolution

Ecology - GBIO 395 General Ecology 3 hrs and GBIO 397 General Ecology Laboratory 2 hrs

Evolution - GBIO 405 Evolutionary Biology 4 hrs

**GROUP B** – Electives

BOT 205 Introduction to Botany 4 hrs

BOT 347 Vascular Plant Systematics 4 hrs

BOT 401 Plant Pathology 4 hrs

BOT 426 Plant Physiology 4 hrs

BOT 427 Plant Stress Ecophysiology 4 hrs

BOT 429 Native Plants of Louisiana 4 hrs BOT 458 General Mycology 3 hrs

BOT 481 Plant Ecology 4 hrs

BOT 482 Plant Anatomy 4 hrs

GBIO 281 Environmental Awareness 3 hrs

GBIO 314 Genetics Laboratory 2 hrs

GBIO 395 General Ecology 3 hrs

GBIO 397 General Ecology Laboratory 2 hrs GBIO 404 Ecological Methods 3 hrs

GBIO 405 Evolutionary Biology 4 hrs

GBIO 406 Wetland Ecology 4 hrs

GBIO 407 Forensic Biology 4 hrs

GBIO 408 Computational Biology 4 hrs

GBIO 418 Community Ecology 4 hrs

GBIO 434 Molecular Biology and Biotechnology 4 hrs

GBIO 439 Introduction to Fresh Water & Estuarine Biology 4 hrs

GBIO 481 Biogeography 3 hrs

GBIO 485 Conservation Biology 4 hrs

GBIO 492 History of Biology 3 hrs

GBIO 495 Biological Electron Microscopy 4 hrs

HORT 301 Introductory Soils 4 hrs

HORT 315 Plant Materials I 3 hrs

HORT 320 Plant Materials II 4 hrs

HORT 328 Plant Propagation 3 hrs

HORT 412 Turf Management 3 hrs

HORT 424 Arboriculture 3 hrs

HORT 426 Coastal Plant Production 3 hrs

HORT 428 Organic Gardening 3 hrs

MIC 313 Microbial Ecology 3 hrs

MIC 325 Advanced General Microbiology 4 hrs

MIC 423 Environmental Microbiology 4 hrs

MIC 436 Pathogenic Bacteria 4 hrs

MIC 457 Dairy & Food Microbiology 4 hrs

MIC 460 Immunology 4 hrs

MIC 461 Bacterial Metabolism 4 hrs

MIC 463 Virology 4 hrs

MIC 465 Recombinant DNA Techniques 4 hrs

ZOO 301 Invertebrate Zoology 4 hrs

ZOO 302 Comparative Anatomy 4 hrs

ZOO 331 Embryology 4 hrs

ZOO 332 Animal Histology 4 hrs ZOO 352 Field Zoology 4 hrs

ZOO 392 Animal Physiology 4 hrs

ZOO 409 General Entomology 4 hrs

ZOO 428 Waterfowl Management 3 hrs

ZOO 438 Mammology 4 hrs ZOO 453 Ecological Parasitology 4 hrs ZOO 455 Medical Parasitology 4 hrs

ZOO 456 Ichthyology 4 hrs

ZOO 457 Invertebrate Ecology 4 hrs

ZOO 458 Fisheries Ecology and Management 4 hrs

ZOO 465 Animal Development 4 hrs

ZOO 470 Ornithology 4 hrs

ZOO 471 Comparative Endocrinology 4 hrs

ZOO 475 Animal Behavior 4 hrs

ZOO 488 Cytology 3 hrs ZOO 499 Neurobiology 4 hrs

(NOTE: \* these electives require PRIOR approval of student's advisor and Department Head.) \*GBIO 409 Internship – Variable credits, 1 to 3 hours (Max 3 hours total)

\*GBIO 450 Research Problems – Variable credits, 1 to 4 hours (Max 4 hours total)

\*GBIO 493 Special Topics in Biology - Variable credits, 2 to 4 hours

Maximum of four credit hours of Biochemistry may be used for concentration elective requirements. NOTE: If CHEM 281 and CLAB 283 are taken to fulfill Chemistry requirements, they may not be used for elective requirements.

CHEM 281 Survey of Biochemistry 3 hrs

CLAB 283 Survey of Biochemistry Laboratory 1 hr

CHEM 481 Biochemistry I 3 hrs

CLAB 485 Biochemistry I Laboratory 1 hr

CHEM 482 Biochemistry II 3 hrs

CLAB 486 Biochemistry II Laboratory 1 hr

# CURRICULUM IN BIOLOGICAL SCIENCES ECOLOGY, ENVIRONMENTAL, and EVOLUTIONARY BIOLOGY CONCENTRATION

YEAR: 2022 / 2023				YEAR E	NTERE	D SLU:
NAME:		_		W#		
MAJOR HOURS (41) <u>C or Better</u> <sup>2</sup> Core Requirements (21 hrs) GBIO 151 3 BIOL 152 1 GBIO 153 3	MATHEMATIO  1.2 MATH 161  MATH 162  MATH 163	3 3	<u>-</u>	(Anth, Eco	n,Geog, Pa	SICES (6) syc, Poli, Soc, CJ) 33
BIOL 154 1 1	or <sup>1</sup> MATH 175 a MATH 175 MATH 200  ENGLISH (12)	<u>5</u> <u>5</u>	_	PLAB 19 PHYS 19	91 <u> </u>	3 1 3 1
Upper-level Courses (20 hrs) page 2	ENGL 101 or 121H ENGL 102 or 122H ENGL 230 or 23 ENGL 322	_33 1 or 232	_	rlad I	<del></del>	_1
CHEMISTRY (16) <sup>2</sup> CHEM 1213  CLAB 1231  CHEM 1223  CLAB 1241	FOR. LANGUA101102	3	_	LS 102 COMM2	211	Mus,Art,Dnc,Thea) _31 _33
<sup>3</sup> CHEM 261 3 3 3 3 3 3 CLAB 283 1 3 1 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	ELECTIVES (10	0)	_ -	SE 101 is transfer with 30 l students	s not req or readm hrs or mo are requ	
TOTAL HOURS 120  NOTES: <sup>1</sup> Students with Math ACT <21 taltake MATH 175 and 200 (10 credit hours) in MATH 175 and 200 are required to take one <sup>2</sup> Grade of "C" or better in CHEM 121, MAT and MATH 151 or 161 are prerequisites for <sup>3</sup> Students planning on attending medical, de minor in Chemistry, should take CHEM 265 (281/283). Also, CHEM 265/267 can NOT be may be taken in place of CHEM 281/283.  **GBIO 441 fulfills requirement for compu	n place of MATH e less hour of elect FH 151 or 161, and GBIO 200, and G ntal, or other profe 5/267 and CHEM 2 e used as prerequis	161, 162, ives (i.e., d all Biolo 200 essional of 266/268 i	, and 163 9 hrs insogy cours is a prere or graduat n place o	1. Studen (9 credit tead of 10 tes is requisite for e schools f CHEM	at of 10 ats who a hours). hrs). hred. Al or GBIO , and stu 261/263	hrs). re eligible may Students who take so, CHEM 121 312. dents pursuing a and CHEM
ADDITIONAL COURSES:		CUM: (Adj) MAJOR (Adj) SLU:		HE		

(Adj)

### ECOLOGY, ENVIRONMENTAL, and EVOLUTIONARY BIOLOGY CONCENTRATION

I. Core Courses (page 1): 21 CREDIT HOURS (Grade of "C" or better required in all courses)

II. Upper-level courses for the Ecology, Environmental, Evolutionary Biology Concentration:

20 CREDIT HOURS from the following courses with approval of advisor (Grade of "C" or better required in all courses)

### Group A: Fundamental Courses – total 13 hrs – the following four courses are required

GBIO 377 Biostatistics 4 hrs

GBIO 395 General Ecology 3 hrs

GBIO 397 General Ecology Laboratory 2 hrs

GBIO 405 Evolutionary Biology 4 hrs

### **Group B: Electives** – minimum 7 hrs from these electives. Only one 200 level course may be selected.

BOT 205 Introduction to Botany 4 hrs

BOT 347 Vascular Plant Systematics 4 hrs

BOT 426 Plant Physiology 4 hrs

BOT 427 Plant Stress Ecophysiology 4 hrs

BOT 429 Native Plants of Louisiana 4 hrs

BOT 458 General Mycology 3 hrs

BOT 481 Plant Ecology 4 hrs

BOT 482 Plant Anatomy 4 hrs

GBIO 281 Environmental Awareness 3 hrs

GBIO 404 Ecological Methods 3 hrs

GBIO 406 Wetlands Ecology 4 hrs

GBIO 408 Computational Biology 4 hrs

GBIO 410 Introduction to Population Genetics 4 hrs

GBIO 418 Community Ecology 4 hrs

GBIO 434 Molecular Biology and Biotechnology 4 hrs

GBIO 439 Freshwater & Estuary Biology 4 hrs

GBIO 442 Marine Biology 4 hrs

GBIO 481 Biogeography 3 hrs

GBIO 485 Conservation Biology 4 hrs

ZOO 301 Invertebrate Zoology 4 hrs

ZOO 302 Comparative Anatomy of the Vertebrates 4 hrs

ZOO 352 Field Zoology 4 hrs

ZOO 392 Animal Physiology 4 hrs

ZOO 409 General Entomology 4 hrs

ZOO 438 Mammology 4 hrs

ZOO 456 Ichthyology 4 hrs

ZOO 457 Invertebrate Ecology 4 hrs

ZOO 458 Fisheries Ecology & Mgmt 4 hrs

ZOO 465 Animal Development 4 hrs

ZOO 470 Ornithology 4 hrs

ZOO 475 Animal Behavior 4 hrs

MIC 313 Microbial Ecology 3 hrs

MIC 423 Environmental Microbiology 4 hrs

MIC 438 Soil Microbiology 4 hrs

(NOTE: \* these electives require PRIOR approval of student's advisor and Department Head.)

\*GBIO 409 Internship – Variable credits, 1 to 3 hours (Max 3 hours total)

\*GBIO 450 Research Problems – Variable credits, 1 to 4 hours (Max 4 hours total)

\*GBIO 493 Special Topics in Biology – Variable credits, 2 to 4 hours

Maximum four credit hours from these courses may be applied to concentration elective requirements.

CMPS 450 Spatial Database & Applications 3 hrs

GEOG 495 Introduction to GIS 3 hrs

POLI 446 Politics & the Environment 3 hrs

SOC 360 Environmental Sociology 3 hrs