#### CURRICULUM IN BIOLOGICAL SCIENCES **BIOLOGY EDUCATION CONCENTRATION** 2020 - 2021

Date: \_\_\_\_\_

Advisor: \_\_\_\_\_

Student: \_\_\_\_\_

W#\_\_\_\_\_

BIOLOGY (41) C or Better*         Core Requirements (21 hrs)         *GBIO 151         *BIOL 152         *GBIO 153         *BIOL 154         *MIC 205 or 223         *MICL 207 or 224         * <sup>2</sup> GBIO 312         *GBIO 241         *GBIO 341         *GBIO 441	(41) <u>3</u> <u>1</u> <u>3</u> <u>1</u> <u>3</u> <u>1</u> <u>3</u> <u>1</u> <u>1</u> <u>1</u> <u>1</u> <u>1</u> <u>1</u> <u>1</u> <u>1</u>	**EDUC 203	$\begin{array}{c} (33) \\ 2 \\ 1 \\ 3 \\ 3 \\ 1 \\ 6 \\ 9 \\ 3 \\ 2 \\ (6) \\ 3 \\ \end{array}$
	_	Social Science elective	_3
<u>CHEMISTRY</u> * <sup>2</sup> CHEM 121 *CLAB 123 *CHEM 122 *CLAB 124 *CHEM 261 *CLAB 263 *CHEM 281	$(16) \\ \3 \\ \1 \\ \3 \\ \1 \\ \3 \\ \1 \\ \3 \\ \1 \\ \3$	OTHER()SE 101LS 102COMM 210ART elective (Mus,Art,Dnc,Thea)	(9) _2 _1 _3 _3
*CHEM 283 ENGL 101 *ENGL 102 ENGL 230 or 231 or 232	$ \begin{array}{c}                                     $	TOTAL HOURS	120
<sup>1</sup> MATHEMATICS * <sup>1, 2</sup> MATH 161 (or MATH 151) *MATH 162	(6) 3 3		

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.

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

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

<sup>1</sup>Students with Math ACT score of 19 - 20 take MATH 151 in place of MATH 161. Students with Math ACT score of  $\ge 21$  take MATH 161.

<sup>2</sup>CHEM 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 from the following courses with approval of the Biology Education Advisor

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

**GROUP** A – required courses (12 hrs)

\*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

# **GROUP B:** Electives (8 hrs)

\*ZOO 302 Comparative Anatomy 4 hrs

\*ZOO 392 Animal Physiology 4 hrs

\*PHYS 191 General Physics 3 hrs

\*PLAB 193 General Physics Laboratory 1 hr

\*PHYS 192 General Physics 3 hrs

\*PLAB 194 General Physics Laboratory 1 hr

#### CURRICULUM IN BIOLOGICAL SCIENCES BUSINESS CONCENTRATION

	<b>DUSINESS CONCERT</b>	
YEAR: 2020/2021		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) <sup>1,2</sup> MATH 1613         MATH 1623         MATH 1633	<sup>4</sup> SOCIAL SCIENCES (6) (Anth, Econ, Geog, Psyc, Poli, Soc) ECON 2013 ECON 2023
BIOL 154       1         MIC 205       3         MICL 207       1 <sup>2</sup> GBIO 200       3 <sup>2</sup> GBIO 312       3	or <sup>1</sup> <b>MATH 175 and 200 (10)</b> MATH 175 <u>5</u> MATH 200 <u>5</u>	PHYSICS (8)
GBIO 241 1 GBIO 341 1 GBIO 441** 1 Upper-level Courses (20 hrs) page 2	<b>ENGLISH (12)</b> ENGL 101 or 121H 3	PHYS 1913         PLAB 1931         PHYS 1923         PLAB 1941
	ENGL 102 or 122H <u>3</u> ENGL 230 or 231 or 232 <u>3</u> ENGL 322 <u>3</u>	<i>ELECTIVE (1)</i> (1)
	FOR. LANGUAGES (6)	$\begin{array}{c} \textbf{OTHER (12)} \\ ART \ ELECTIVE \ (Mus, Art, Dnc, Thea) \\ \hline \hline 1 \\ \hline \end{array}$
CHEMISTRY (16) <sup>2</sup> CHEM 121       3         CLAB 123       1         CHEM 122       3		LS 1021 COMM2113 HIST3 SE 1012 SF 101 is set on sind of
CHEM 122       3         CLAB 124       1 <sup>3</sup> CHEM 261       3 <sup>3</sup> CLAB 263       1 <sup>3</sup> CHEM 281       3 <sup>3</sup> CLAB 283       1	CONCENT. COURSES (9) <sup>2</sup> <u>ACCT 200 (3)</u> <sup>2</sup> <u>FIN 381 (3)</u> <sup>2</sup> <u>MRKT 303 or MGMT 351 (3)</u>	SE 101 is not required of transfer or readmitted students with 30 hours or more. These students are required to take two additional hours of electives (i.e., 12 hrs instead of 10 hrs)

#### TOTAL HOURS 120

<u>NOTES</u>: <sup>1</sup>Students 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 not required to take the one hour of electives (i.e., 0 hr instead of 1 hr).

<sup>2</sup>Grade of "C" or better in CHEM 121, MATH 151/161, ACCT 200, FIN 381, and MRKT 303 or MGMT 351, and all Biology courses is required. CHEM 121 and MATH 151/161 are prerequisites for GBIO 200, and GBIO 200 is a prerequisite for GBIO 312.
 <sup>3</sup>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. Also, CHEM 265/267 can NOT be used as prerequisites for CHEM 281/283.
 <sup>4</sup>Students in the Business Concentration should take ECON 201 and ECON 202 for the Social Sciences requirement.
 \*\*GBIO 441 fulfills requirement for computer literacy

	<i>IIV LIUIOLS</i>	
ADDITIONAL COURSES:	HA HE QP Average	
	СИМ:	
	(Adj)	
	MAJOR	
	(Adj)	
	<i>SLU</i> :	
	(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 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: 2020/2021		YEAR ENTERED SLU:
NAME:		W#
MAJOR HOURS (41) <u>C or Better<sup>2</sup></u>	<b>MATHEMATICS (9)</b>	SOCIAL SCIENCES (6)
Core Requirements (21 hrs)	<sup>1,2</sup> MATH 1613	(Anth, Econ, Geog, Psyc, Poli, Soc)
GBIO 1513	MATH 1623	3
BIOL 1521	MATH 1633	3
GBIO 1533		
BIOL 1541		
MIC 2053	or <sup>1</sup> MATH 175 and 200 (10)	
MICL 2071	MATH 1755	
<sup>2</sup> GBIO 2003	MATH 2005	
<sup>2</sup> GBIO 3123		PHYSICS (8)
GBIO 241 1		PHYS 1913
GBIO 3411		PLAB 1931
GBIO 441**1	ENGLISH (12)	PHYS 1923
	ENGL 101	PLAB 1941
Upper-level Courses (20 hrs) page 2	or 121H3	
	ENGL 102	
	or 122H3	
	ENGL 230 or 231 or 232	
	<i>ENGL 322</i> <u>3</u>	
	ENGL 3223	
		OTHER (12)
CHEMISTRY (16)	FOR. LANGUAGES (6)	ART ELECTIVE (Mus,Art,Dnc,Thea)
<sup>2</sup> CHEM 1213		3
CLAB 123 1	1023	LS 1021
CHEM 1223		<i>COMM211</i> 3
CLAB 1241		HIST3
CHEM 2613		SE 101 2
CLAB 2631	ELECTIVES (10)	SE 101 is not required of
CHEM 2813		transfer or readmitted students
CLAB 2831		with 30 hrs or more. These
		students are required to take two
		additional hrs of electvies (i.e., 12
		hrs instead of 10 hrs).

## TOTAL HOURS 120

<u>NOTES</u>: <sup>1</sup>Students 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>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. Also, CHEM 265/267 can NOT be used as prerequisites for CHEM 281/283. \*\*GBIO 441 fulfills requirement for computer literacy

ADDITIONAL COURSES:		AVERA	GES		
		HA	HE	QP	Average
	CUM:				
	(Adj)				
	MAJOR				
	(Adj)				
	SLU:				
	(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 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

#### CURRICULUM IN BIOLOGICAL SCIENCES INTEGRATIVE BIOLOGY CONCENTRATION

YEAR: 2020/2021		YEAR ENTERED SLU:
NAME:		W#
MAJOR HOURS (41) C or Better <sup>2</sup> Core Requirements (21 hrs)         GBIO 1513         BIOL 1521         GBIO 1533         BIOL 1541	MATHEMATICS (9) <sup>1,2</sup> MATH 1613         MATH 1623         MATH 1633	<sup>4</sup> SOCIAL SCIENCES (6) (Anth, Econ, Geog, Psyc, Poli, Soc) 333
MIC 205       3         MICL 207       1 <sup>2</sup> GBIO 200       3 <sup>2</sup> GBIO 312       3         GBIO 241       1	or <sup>1</sup> MATH 175 and 200 (10) MATH 175 <u>5</u> MATH 200 <u>5</u>	<b>PHYSICS (8)</b> PHYS 1913
GBIO 3411         GBIO 441**1         Upper-level Courses (20 hrs) page 2	ENGLISH (12) ENGL 101 or 121H3 ENGL 102 or 122H3 ENGL 230 or 231 or 232 3	PLAB 1931 PHYS 1923 PLAB 1941
	33 ENGL 3223 FOR. LANGUAGES (6)	<b>OTHER (12)</b> ART ELECTIVE (Mus,Art,Dnc,Thea) 3 LS 1021
CHEMISTRY (16) <sup>2</sup> CHEM 121         3           CLAB 123         1           CHEM 122         3	1013 1023	COMM2113 HIST 3 SE 1012
CHEM 122	<sup>4</sup> ELECTIVES (10)	SE 101 is not required of transfer or readmitted students with 30 hours or more. These students are required to take two additional hours of electives (i.e., 12 hrs instead of 10 hrs)

#### TOTAL HOURS 120

<u>NOTES</u>: <sup>1</sup>Students 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>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. Also, CHEM 265/267 can NOT be used as prequisites for 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

			AVER	AGES	
ADDITIONAL COURSES:	HA	HE	QP	Average	
	CUM:				
	(Adj)				
	MAJOR				
	(Adj)				
	SLU:				
	(Adj)				

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 433 Phycology 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 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: 2020/2021		YEAR ENTERED SLU:
NAME:		W#
MAJOR HOURS (41) <u>C or Better<sup>2</sup></u> Core Requirements (21 hrs)GBIO 1513MATH 163 3	MATHEMATICS (9) <sup>1,2</sup> MATH 1613           MATH 1623	SOCIAL SCIENCES (6) (Anth, Econ, Geog, Psyc, Poli, Soc) 3BIOL 1521
GBIO 153       3         BIOL 154       1         MIC 205       3         Provide the second seco	or <sup>1</sup> MATH 175 and 200 (10) MATH 1755 MATH 2005 ENGL101 or 121H3 ENGL 102 or 122H3 ENGL 230 or 231 or 232 3 ENGL 3223	PHYSICS (8)         PHYS 191       3         PLAB 193       1         PHYS 192       3         PLAB 194       1
		<b>OTHER</b> (12)
CHEMISTRY (20) <sup>2</sup> CHEM 121       3         CLAB 123       1         CHEM 122       3         CLAB 124       1         CHEM 265       3	FOR. LANGUAGES (6) 1013 1023	ART ELECTIVE (Mus,Art,Dnc,Thea)        3
<i>CLAB</i> 26711	or more. These students are CH	SE 101 is not required for transfer CHEM 266         students with 30 hrs CLAB 2681         IEM 4813
required to take two ad electives (i.e., 8 hrs instead of	dditional hrs CLAB 485	1 of 6 hrs)

TOTAL HOURS 120

<u>NOTES</u>: <sup>1</sup>Students 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., 5 hrs instead of 6 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. \*\*GBIO 441 fulfills requirement for computer literacy

ADDITIONAL COURSES:	AVERAGES				
		HA	HE	QP	Average
	CUM:				
	(Adj)				
	MAJOR				
	(Adj)				
	SLU:				
	(Adj)				

# 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 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: 2020/2021		YEAR ENTERED SLU:
NAME:		W#
MAJOR HOURS (41) <u>C or Better<sup>2</sup></u> Core Requirements (21 hrs)	<i>MATHEMATICS (9)</i> <sup>1,2</sup> <i>MATH 161</i> 3	SOCIAL SCIENCES (6) (Anth, Econ, Geog, Psyc, Poli, Soc)
GBIO 1513 BIOL 1521 GBIO 1533 BIOL 1541	MATH 1623 MATH 1633	3 3
AIC 2051 AIC 2053 AICL 2071 GBIO 2003	or <sup>1</sup> MATH 175 and 200 (10) MATH 1755 MATH 2005	
GBIO 3123 GBIO 2411 GBIO 3411	MITTI 200 <u>5</u>	PHYSICS (8) PHYS 1913 PLAB 1931
GBIO 441**1 Upper-level Courses (20 hrs) page 2	ENGLISH (12) ENGL 101 or 121H3	PHYS 1923 PLAB 1941
	ENGL 102 or 122H <u>3</u> ENGL 230 or 231 or 232	
	<u>3</u> ENGL 322 <u>3</u>	
		OTHER (12) ART ELECTIVE (Mus,Art,Dnc,Thea)3
CHEMISTRY (16)	FOR. LANGUAGES (6) 1013 1023	LS 1021 COMM2113 HIST3
CHEM 121         3           CLAB 123         1           CHEM 122         3		SE 1012 SE 101 is not required of transfer or readmitted students
CLAB 124     1 <sup>2</sup> CHEM 261     3 <sup>2</sup> CLAB 263     1 <sup>2</sup> CHEM 281     3	<i>ELECTIVES (10)</i>	with 30 hours or more. These students are required to take two additional hours of electives (i.e., 12 hrs instead of 10 hrs).
<sup>3</sup> CLAB 2831		12 m s msieuu oj 10 m sj.

## TOTAL HOURS 120

<u>NOTES</u>: <sup>1</sup>Students 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>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. Also, CHEM 265/267 can NOT be used as prequisites for CHEM 281/283. \*\*GBIO 441 fulfills requirement for computer literacy

ADDITIONAL COURSES:	AVERAGES
	HA HE QP Average
	<i>CUM</i> :
	(Adj)
	MAJOR
	(Adj)
	<i>SLU</i> :
	(Adj)

## 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 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