CURRICULUM IN BIOLOGICAL SCIENCES BIOLOGY EDUCATION CONCENTRATION 2019 - 2020

2019 - 2020
Student:
W#
EDUCATION (33)
**EDUC 2032
**EDUC 212
*EDUC 4073
*EDUC 4723
*EDUC 475
*EDUC 4906
*EDUC 4869
*EDUC 3153
*EPSY 3113
*SPED 2102
SOCIAL STUDIES (6)
PSYC 1013
Social Science elective3
OTHER (9)
SE 1012
LS 1021
COMM 2103
ART elective (Mus,Art,Dnc,Thea)3
TOTAL HOURS 120

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.

*MATH 162

^{*}A grade of C or better is required in these courses.

^{**}A grade of B or better is required in these courses.

¹Students with Math ACT score of 19 – 20 take MATH 151 in place of MATH 161. Students with Math ACT score of ≥ 21 take MATH 161.

²CHEM 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

YEAR: 2019 / 2020		Y	EAR ENTERI	ED SLU:
NAME:		V	V#	
MAJOR HOURS (41) <u>C or Better²</u> Core Requirements (21 hrs) GBIO 1513 BIOL 1521_ GBIO 1533	MATHEMATICS (9) 1,2MATH 161 3 MATH 162 3 MATH 163 3	(/		, ,
BIOL 154 1 MIC 205 3 MICL 207 1 ² GBIO 200 3 ² GBIO 312 3 GBIO 241 1	or ¹ MATH 175 and 200 (10 MATH 175 <u>5</u> MATH 200 <u>5</u>	P	PHYSICS (8) PHYS 191	3
GBIO 3411 GBIO 441**1 Upper-level Courses (20 hrs) page 2	ENGLISH (12) ENGL 101 or 121H3	P P	PLAB 193 PHYS 192 PLAB 194	1
	ENGL 102 or 122H3 ENGL 230 or 231 or 232 3 ENGL 3223		CLECTIVE (1)	
CHEMISTRY (16) ² CHEM 121	FOR. LANGUAGES (6) 10131023 CONCENT. COURSES (9 ² ACCT 200 (3) ² FIN 381 (3) ² MRKT 303 or MGMT 351	A L (3) A A A A A A A A A A A A A A A A A A A	LS 102 COMM211 HIST LE 101 LE 101 is not recansfer or readrith 30 hours of tudents are required.	3 3 2 quired of mitted students r more. These uired to take two of electives (i.e.,
TOTAL HOURS 120				
NOTES: ¹ Students with Math ACT <21 to take MATH 175 and 200 (10 credit hours) MATH 175 and 200 are not required to tal ² Grade of "C" or better in CHEM 121, Mall Biology courses is required. CHEM 12 prerequisite for GBIO 312. ³ Students planning on attending medical, cominor in Chemistry, should take CHEM 20 prerequisites for CHEM 281/283. ⁴ Students in the Business Concentration should be supported to the state of the state	in place of MATH 161, 162, a ke the one hour of electives (i.e. ATH 151/161, ACCT 200, FIN 21 and MATH 151/161 are pre- dental, or other professional or 65/267 and CHEM 266/268. A nould take ECON 201 and ECO	and 163 (9 e., 0 hr ins 1381, and requisites graduate Also, CHE	O credit hours). stead of 1 hr). MRKT 303 or for GBIO 200 schools, and st EM 265/267 car	Students who take MGMT 351, and and GBIO 200 is a nudents pursuing an NOT be used as
**GBIO 441 fulfills requirement for comp	outer literacy	A	VERAGES	
ADDITIONAL COURSES:	CUM: (Adj) MAJOR _ (Adj)	HA H	IE QP	

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 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: 2019 / 2020		YEAR ENTERED SLU:
NAME:		W#
MAJOR HOURS (41) <u>C or Better</u> ² Core Requirements (21 hrs) GBIO 151 3 BIOL 152 1 GBIO 153 3 BIOL 154	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 ¹ MATH 175 and 200 (10) MATH 1755 MATH 2005	PHYSICS (8) PHYS 191 3 1 PLAB 193 1 PHYS 192 3
Upper-level Courses (20 hrs) page 2	ENGL 101 or 121H3 ENGL 102 or 122H3 ENGL 230 or 231 or 2323 ENGL 3223	PLAB 1941
CHEMISTRY (16) ² CHEM 121	FOR. LANGUAGES (6)	OTHER (12) ART ELECTIVE (Mus,Art,Dnc,Thea)
TOTAL HOURS 120		hrs instead of 10 hrs).
NOTES: ¹ Students with Math ACT <21 ta take MATH 175 and 200 (10 credit hours); MATH 175 and 200 are required to take on ² Grade of "C" or better in CHEM 121, MA and MATH 151 or 161 are prerequisites for ³ Students planning on attending medical, deminor in Chemistry, should take CHEM 26 prerequisites for CHEM 281/283. **GBIO 441 fulfills requirement for computable ADDITIONAL COURSES:	in place of MATH 161, 162, are less hour of electives (i.e., 9) TH 151 or 161, and all Biology GBIO 200, and GBIO 200 is sental, or other professional or g5/267 and CHEM 266/268. All ter literacy ATHLE CUM: (Adj)	and 163 (9 credit hours). Students who take hrs instead of 10 hrs). by courses is required. Also, CHEM 121 a prerequisite for GBIO 312. Traduate schools, and students pursuing a lso, CHEM 265/267 can NOT be used as over the schools.

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: 2019 / 2020		YEAR ENTERED SLU:
NAME:		W#
MAJOR HOURS (41) <u>C or Better²</u> Core Requirements (21 hrs) GBIO 1513 BIOL 1521 GBIO 1533 PROV. 154	MATHEMATICS (9) 1.2MATH 161 3 MATH 162 3 MATH 163 3	3
BIOL 1541	or ¹ MATH 175 and 200 (1 MATH 175 5 MATH 200 5 ENGLISH (12) ENGL 101	PHYSICS (8) PHYS 191 3 PLAB 193 1 PHYS 192 3 PLAB 194 1
Upper-level Courses (20 hrs) page 2	or 121H3 ENGL 102 or 122H3 ENGL 230 or 231 or 232 3 ENGL 3223	- -
CHEMISTRY (16) ² CHEM 121	FOR. LANGUAGES (6)10131023 4ELECTIVES (10)	COMM211 3
MATH 175 and 200 are required to take o ² Grade of "C" or better in CHEM 121, MA and MATH 151 or 161 are prerequisites fo ³ Students planning on attending medical, c minor in Chemistry, should take CHEM 20 prequisites for CHEM 281/283.	in place of MATH 161, 162, ne less hour of electives (i.e., ATH 151 or 161, and all Biolograms of GBIO 200, and GBIO 200 dental, or other professional of 65/267 and CHEM 266/268. of Business Administration (I ement, must take ACCT 200 to take GBIO 377 as an upper-puter literacy HA CUM: (Adj)	and 163 (9 credit hours). Students who take 9 hrs instead of 10 hrs). Ogy courses is required. Also, CHEM 121 is a prerequisite for GBIO 312. It 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

(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 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: 2019 / 2020		YEAR ENTERED SLU:
NAME:		W#
MAJOR HOURS (41) <u>C or Better²</u> Core Requirements (21 hrs) GBIO 151 3 BIOL 152 1 GBIO 153 3 BIOL 154	MATHEMATICS (9) 1.2MATH 161 3 MATH 162 3 MATH 163 3	SOCIAL SCIENCES (6) (Anth, Econ, Geog, Psyc, Poli, Soc)3
BIOL 154 1 1	or ¹ MATH 175 and 200 (10) MATH 175 5 MATH 200 5 ENGLISH (12)	PHYSICS (8) PHYS 1913 PLAB 1931 PHYS 1923 PLAB 1941
Upper-level Courses (20 hrs) page 2	ENGL 101 or 121H3 ENGL 102 or 122H3 ENGL 230 or 231 or 2323 ENGL 3223	PLAB 1941
		OTHER (12)
CHEMISTRY (20) 2°CHEM 121 3 CLAB 123 1 CHEM 122 3 CLAB 124 1 CHEM 265 3 CLAB 267 1 CHEM 266 3 CLAB 268 1 CHEM 481 3 CLAB 485 1	FOR. LANGUAGES (6) 10131023 ELECTIVES (6)	ART ELECTIVE (Mus,Art,Dnc,Thea)
NOTES: ¹ Students with Math ACT <21 take MATH 175 and 200 (10 credit hours MATH 175 and 200 are required to take of ² Grade of "C" or better in CHEM 121, M. and MATH 151 or 161 are prerequisites ff ***GBIO 441 fulfills requirement for comparison.) in place of MATH 161, 162, and one less hour of electives (i.e., 5 h ATH 151 or 161, and all Biology or GBIO 200, and GBIO 200 is a	1 163 (9 credit hours). Students who take rs instead of 6 hrs). courses is required. Also, CHEM 121
ADDITIONAL COURSES:	AV HA CUM: (Adj) MAJOR (Adj) SLU:	ERAGES 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 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: 2019 / 2020			YEAR	ENTER	ED SLU:
NAME:			W#		
MAJOR HOURS (41) <u>C or Better²</u> Core Requirements (21 hrs) GBIO 1513 BIOL 1521 GBIO 1533	MATHEMATICS (9) 1,2MATH 161 3 MATH 162 3 MATH 163 3	<u>—</u>	(Anth, E	con,Geog,	ENCES (6) Psyc, Poli, Soc)3
BIOL 154 1 1	or ¹ MATH 175 and 20 MATH 175 5 MATH 200 5 ENGLISH (12) ENGL 101 or 121H 3 ENGL 102 or 122H 3 ENGL 230 or 231 or 23	32	PHYS	ICS (8) 191 193 192 194	3 1 3 _1
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	FOR. LANGUAGES (1013	(6)	LS 102 COMM HIST_ SE 101 SE 101 transfer with 30 student additio	is not read hours of are requal hours	(Mus,Art,Dnc,Thea) 31
TOTAL HOURS 120 NOTES: ¹Students with Math ACT <21 tal take MATH 175 and 200 (10 credit hours) i MATH 175 and 200 are required to take on ²Grade of "C" or better in CHEM 121, MA and MATH 151 or 161 are prerequisites for ³Students planning on attending medical, de minor in Chemistry, should take CHEM 265 prequisites for CHEM 281/283. ***GBIO 441 fulfills requirement for compu	n place of MATH 161, 1 e less hour of electives (i FH 151 or 161, and all B GBIO 200, and GBIO 2 ental, or other professions 5/267 and CHEM 266/26	62, and 163.e., 9 hrs insiology cour 00 is a prereal or gradua	(9 cred stead of ses is re- equisite te schoo	it hours). 10 hrs). quired. A for GBIC ls, and st	Students who take Also, CHEM 121 O 312. tudents pursuing a
ADDITIONAL COURSES:	CUM (Adj)	OR		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 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