# **Cover Sheet: Request 13045**

## Add Approved Courses and Electives to meet requirements for the Biology major

#### Info

Process	Major Curriculum Modify Ugrad/Pro
Status	Pending at PV - University Curriculum Committee (UCC)
Submitter	Teresa Mutahi tmutahi@ufl.edu
Created	9/13/2018 10:58:25 AM
Updated	10/8/2018 9:38:20 AM
Description of	Approve the addition of listed approved additional life science (ALS) electives and BSC3096
request	(Human Physiology) as a third alternative to meet the physiology requirements. The addition of
	the following courses was approved by the Biology Major Executive Committee (BMEC).
	1. ALS3153, Agricultural Ecology, approved as an ALS elective for the BIO-BA UFO track.
	2. SWS 4223, Environmental Biogeochemistry, as an ALS elective for the BIO-BA UFO and BIO-
	BA
	residential tracks on April 17, 2018. Please note: for BIO-PRO and BL Y-PRO tracks, this
	course was approved as an ALS elective on April 18, 2014.
	3. BMS4136C, Human Histology, approved as an ALS elective for the BIO-BA residential track
	4. BSC3096, Human Physiology, as a third alternative course for the BIO-PRO and BLY-PRO
	Physiology requirement.
	5. ENY 2890, Scientific Engagement, as ALS elective for BIO-PRO and BLY-PRO tracks on
	February 1, 2017. Please note: for BIO-BA Residential, this course was approved as an ALS
	elective on May 24, 2013.
	6. APK2100C, Applied Human Anatomy with Lab, as an ALS elective for the BIO-BA residential
	and UFO tracks.
	7. ANT3514C, Introduction to Biological Anthropology, as an ALS for the BIO-BA residential
	and UFO tracks.
	8. PCB4553, Population Genetics, was approved as an ALS elective for BIO-PRO and BLY-PRO
	tracks.

#### Actions

Actions					
Step	Status	Group	User	Comment	Updated
Department	Approved	CLAS - Biology	Marta Wayne		9/13/2018
		011690003			
CALS CLAS B	MEC Elective	s MOU.pdf			9/13/2018
MOU for BME	C Approved C	ourses (Signed).pd	lf		9/13/2018
ALSadditions.d	loc				9/13/2018
College	Approved	CLAS - College	Joseph Spillane		9/21/2018
		of Liberal Arts			
		and Sciences			
Approved cour	ses CALS su	pport letter Joel Bre	endemuhl.doc		9/14/2018
Associate	Approved	PV - Associate	Angela Lindner		9/27/2018
Provost for		Provost for			
Undergraduate		Undergraduate			
Affairs		Affairs			
No document of	hanges		•		
University		PV - University	Lee Morrison	Added to October agenda.	10/1/2018
Curriculum		Curriculum			
Committee		Committee			
		(UCC)			
No document of	hanges				
University	Pending	PV - University			10/1/2018
Curriculum		Curriculum			
Committee		Committee			
		(UCC)			
No document changes					
Office of the					
Registrar					

Step	Status	Group	User	Comment	Updated
No document of	No document changes				
Student					
Academic					
Support					
System					
No document of	hanges				
Catalog					
No document of	hanges				
Academic					
Assessment					
Committee					
Notified					
No document changes					
College					
Notified					
No document changes					

## Major|Modify\_Curriculum for request 13045

#### Info

**Request:** Add Approved Courses and Electives to meet requirements for the Biology major **Description of request:** Approve the addition of listed approved additional life science (ALS) electives and BSC3096 (Human Physiology) as a third alternative to meet the physiology requirements. The addition of the following courses was approved by the Biology Major Executive Committee (BMEC).

- 1. ALS3153, Agricultural Ecology, approved as an ALS elective for the BIO-BA UFO track.
- 2. SWS 4223, Environmental Biogeochemistry, as an ALS elective for the BIO-BA UFO and BIO-BA residential tracks on April 17, 2018. Please note: for BIO-PRO and BL Y-PRO tracks, this course was approved as an ALS elective on April 18, 2014.
- 3. BMS4136C, Human Histology, approved as an ALS elective for the BIO-BA residential track
- 4. BSC3096, Human Physiology, as a third alternative course for the BIO-PRO and BLY-PRO Physiology requirement.
- 5. ENY 2890, Scientific Engagement, as ALS elective for BIO-PRO and BLY-PRO tracks on February 1, 2017. Please note: for BIO-BA Residential, this course was approved as an ALS elective on May 24, 2013.
- 6. APK2100C, Applied Human Anatomy with Lab, as an ALS elective for the BIO-BA residential and UFO tracks.
- 7. ANT3514C, Introduction to Biological Anthropology, as an ALS for the BIO-BA residential and UFO tracks.
- 8. PCB4553, Population Genetics, was approved as an ALS elective for BIO-PRO and BLY-PRO tracks.

Submitter: Teresa Mutahi tmutahi@ufl.edu

Created: 9/13/2018 9:42:43 AM

Form version: 1

### Responses

### **Major Name**

Enter the name of the major. Example: "Mathematical Modeling"

Response: Biology Major

#### **Major Code**

Enter the two-letter or three-letter major code.

Response: BIO

#### **Degree Program Name**

Enter the name of the degree program in which the major is offered.

Response: Biology Major

### **Undergraduate Innovation Academy Program**

Is this an undergraduate program in the Innovation Academy?

Response:

#### **Effective Term**

Enter the term (semester and year) that the curriculum change would be effective.

Response:

Earliest Available

#### **Effective Year**

Response:

Earliest Available

#### **Current Curriculum for Major**

Response:

Current curriculum and list of approved courses exists here (https://catalog.ufl.edu/UGRD/courses/biological sciences/)

#### **Proposed Curriculum Changes**

Describe the proposed changes to the curriculum. If the change is to offer the program through UF Online, please explain and attach a letter of support from the Director of UF Online.

#### Response:

The biology major executive committee (BMEC) has approved new courses to fulfill requirements for the major. The Memo with approved additional life science (ALS) electives and BSC 3096 (Human Physiology) to meet the physiology requirements for the BIO-PRO and BLY-PRO tracks is attached.

### Pedagogical Rationale/Justification

Describe the rationale for the proposed changes to the curriculum.

#### Response:

Biology major program has a list of approved electives and courses needed to meet graduation requirements. The Biology Major Executive Committee (BMEC) reviews and approves electives as new courses are added or when old courses are no longer being offered.

#### Impact on Enrollment, Retention, Graduation

Describe any potential impact of the curriculum changes on students who are currently in the major.

Response:

None

#### **Assessment Data Review**

Describe the Student Learning Outcome and/or program goal data that was reviewed to support the proposed changes.

Response:

The Biology Major Executive Committee (BMEC) continuously reviews the curriculum and courses and voted that they be added as approved courses/electives Students can take these courses to meet their graduation requirements.

### **Academic Learning Compact and Academic Assessment Plan**

Describe the modifications to the Academic Learning Compact (for undergraduate programs) and Academic Assessment Plan that result from the proposed change.

### Response:

BSC3096, Human Physiology added as a third alternative course to meet the physiology requirements for the BIO-PRO and BLY-PRO tracks. Reinforces SLO 1, SLO 2 and SLO 4 on the curriculum map.



### College of Liberal Arts and Sciences Academic Advising Center

100 Fletcher Drive PO Box 112015 Gainesville, FL 32611-2015 352-395-1521 352-392-2905 Fax

September 12, 2018

Dr. Teresa Mutahi, Assistant Director, Biology Major University of Florida

Dear Dr. Mutahi,

I have reviewed the proposed new ALS elective courses approved by the Biology Major Executive Committee, per your memorandum of September 12. These have the approval of the College of Liberal Arts and Sciences.

Please let me know if you need anything else.

Sincerely,

Joseph F. Spillane

Associate Dean, College of Liberal Arts and Sciences



UF/IFAS

College of Agricultural and Life Sciences Office of the Dean 2020 McCarty Hall D PO Box 110270 Gainesville, FL 32611-0270 352-392-1963 352-392-8988 Fax

September 14, 2018

Dr. Teresa Mutahi, Assistant Director, Biology Major University of Florida

Dear Dr. Mutahi,

I have reviewed the proposed new ALS elective courses approved by the Biology Major Executive Committee, per your memorandum of September 12. These have the approval of the College of Agricultural and Life Sciences.

Please let me know if you need anything else.

Sincerely,

Joel H. Brendemuhl, PhD

Associate Dean

College of Agricultural and Life Sciences

# **Bachelor of Arts Biology Approved Electives List**

# See course descriptions for prerequisites and requirements

Code	Title	Credits
AGR 4320	Plant Breeding	3
<u>ALS 4161</u>	Exotic Species and Biosecurity Issues	3
<u>ALS 4162</u>	Consequences of Biological Invasions	3
<u>ALS 4163</u>	Challenges in Plant Resource Protection	3
ANS 3006 & 3006L	Introduction to Animal Science and Introduction to Animal Science Laboratory	4
ANS 3319C	Reproductive Physiology and Endocrinology in Domestic Animals	4
ANS 3440	Principles of Animal Nutrition	4
ANT 3514C	Introduction to Biological Anthropology	4
ANT 4531	Molecular Genetics of Disease	3
ANT 4552	Primate Behavior	3
ANT 4554C	Primate Evolution	3
ANT 4586	Human Evolution	3
APK 2100C	Applied Human Anatomy with Laboratory	4
BCH 4024	Introduction to Biochemistry and Molecular Biology	4
BMS 4136C	Human Histology	4
<b>BOT 2710C</b>	Practical Plant Taxonomy	3
<b>BOT 2800C</b>	Plants in Human Affairs	3
<b>BOT 3151C</b>	Local Flora of North Florida	3
BOT 3503 & 3503L	Physiology and Molecular Biology of Plants and Physiology and Molecular Biology of Plants Laboratory	5
BOT 4621	Plant Geography	2
BOT 4935	Special Topics	1-4
BSC 1920	First Year Introduction: Biology at UF	1
BSC 2862	Global Change Ecology and Sustainability	3
BSC 3402	Theory and Practice in the Biological Sciences	2
BSC 3422C	Principles of the Biotechnology Industry	2
BSC 3911	Entering Research in Biology	1
BSC 4821C	Evolutionary Biogeography	3
BSC 4910	Individual Mentored Research in Biology	0-3
BSC 4912	Advanced Mentored Research in Biology	0-4
ENY 2890	Using Insect Research to Understand the Nature of Scientific Engagemen	nt 3

Code	Title	Credits
ENY 3005	Principles of Entomology	3
& <u>3005L</u>	and Principles of Entomology Laboratory	3
ENY 3007C	Life Science	3
ENY 3163	Invertebrate Field Biology	3
ENY 3563	Introduction to Tropical Entomology	3
ENY 3564L	Tropical Entomology Field Laboratory	2
ENY 4161	Insect Classification	3
ENY 4210	Insects and Wildlife	3
ENY 4453	Behavioral Ecology and Systematics	3
ENY 4455C	Social Insects	3
ENY 4660	Medical and Veterinary Entomology	3
& <u>4660L</u>	and Medical and Veterinary Entomology Laboratory	3
<u>FAS 4202C</u>	Biology of Fishes	4
<u>FAS 4305C</u>	Introduction to Fishery Science	3
<u>FOR 3342C</u>	Tree Biology	3
<u>GLY 3603C</u>	Paleontology	4
HOS 3305	Introduction to Plant Molecular Biology	3
<u>HOS 4304</u>	Horticultural Physiology	3
HOS 4313C	Laboratory Methods in Plant Molecular Biology	2
<u>HUN 4221</u>	Nutrition and Metabolism	3
<u>HUN 4445</u>	Nutrition and Disease: Part 1	2
<u>HUN 4446</u>	Nutrition and Disease: Part 2	3
MCB 4203	Bacterial Pathogens	3
MCB 4304	Genetics of Microorganisms	3
MCB 4320C	The Microbiome	3
MCB 4403	Prokaryotic Cell Structure and Function	3
MCB 4503	General Virology	3
<u>NEM 3002</u>	Principles of Nematology	3
PCB 3023	Essential Cell Biology	3
PCB 3134	Eukaryotic Cell Structure and Function	3
PCB 3601C	Plant Ecology	3
PCB 4043C	General Ecology	4
PCB 4085	Genetical Ethics	1
PCB 4233	Immunology	3
PCB 4522	Molecular Genetics	3
PCB 4553	Population Genetics	4

Code	Title	Credits
PCB 4674	Evolution	4
PLP 3002C	Fundamentals of Plant Pathology	4
PLS 3004C	Principles of Plant Science	3
PLS 3223	Plant Propagation	3
& <u>3223L</u>	and Plant Propagation Laboratory	3
PSB 3002	Physiological Psychology	3
PSB 3340	Behavioral Neuroscience	3
PSB 4434	Neurochemistry, Pharmacology and Behavior	3
PSB 4504	Developmental Psychobiology	3
PSB 4654	Chemical Senses and Behavior	3
PSB 4810	Neurobiology of Learning and Memory	3
PSB 4823	Principles of Integrative Physiological Psychology	3
<u>WIS 3553C</u>	Introduction to Conservation Genetics	4
<u>WIS 4203C</u>	Landscape Ecology and Conservation	3
<u>WIS 4443C</u>	Wetland Wildlife Ecology	4
<u>WIS 4501</u>	Introduction to Wildlife Population Ecology	3
<u>WIS 4547C</u>	Avian Field Techniques	2
<u>WIS 4554</u>	Conservation Biology	3
WIS 4601C	Quantitative Wildlife Ecology	3
WIS 4945C	Wildlife Techniques	4
<b>ZOO 3513C</b>	Animal Behavior	4
<b>ZOO 3603C</b>	Evolutionary Developmental Biology	4
<b>ZOO 3713C</b>	Functional Vertebrate Anatomy	4
<b>ZOO 4205C</b>	Invertebrate Biodiversity	4
<u>ZOO 4232</u>	Human Parasitology	3
<b>ZOO 4307C</b>	Vertebrate Biodiversity	4
<b>ZOO 4403C</b>	Marine Biology	4
<b>ZOO 4472C</b>	Avian Biology	4
<u>ZOO 4926</u>	Special Topics in Zoology	1-4
ALS3153	Agricultural Ecology	3
SWS 4223	Environmental Biogeochemistry	3
BMS4136C	Human Histology	4
APK2100C	Applied Human Anatomy	4
ΔΝΤ351 <i>Δ</i> C	Introduction to Biological Anthropology	4



**Biology Major Office** 

214 Bartram Hall PO Box 118525 Gainesville, FL 32611-8525 352-273-0116 352-392-3704 Fax Major.biology.ufl.edu

### Memorandum of Understanding

The Biology major is jointly offered by CALS and CLAS and is administered by the cross-college Biology Major Executive Committee (BMEC), which consists of three faculty from each of the two colleges, an Associate Dean from each college, and the Undergraduate Coordinator, who serves both colleges.

The Pre-Professional tracks in the Biology major have almost 100 approved electives. This large number of electives is a strength of the major, but it also necessitates frequent changes in the approved electives as new courses are added, old courses are no longer offered, and existing courses change focus. The proposed procedure below seeks to streamline the approval process for changing electives in the major while still ensuring that all relevant units have approved any proposed changes.

For the purposes of changes in electives for BLY and BIO, the undersigned agree that the BMEC may function as the collegelevel curriculum committee and may make recommendations on changes in electives directly to the appropriate Associate Dean in each college. Upon the approval of the Associate Deans, the proposed changes may be submitted to the Associate Provost for Undergraduate Affairs via the UF Academic Approval Tracking System. The specific procedure is as follows:

- 1. The Biology Major Executive Committee (BMEC) will evaluate courses for approval as electives in BLY and BIO.
- 2. As part of the evaluation process, the BMEC will confirm that the department offering any proposed elective course agrees to the proposal.
- 3. The BMEC Chair will send a memo to the Associate Deans overseeing the CALS and CLAS curriculum committees describing the proposed changes. This should include confirmation that the departments offering the courses have agreed to the proposed changes.
- 4. Upon approval from the Associate Deans, the proposed changes will be submitted through the Academic Approval Tracking system.
- 5. The office of the Associate Provost for Undergraduate Affairs may then submit the proposed changes to the University Curriculum Committee (UCC) or approve the changes without UCC review.

Bernard Mair

David Julian

Associate Provost, Undergraduate Affairs

Associate Dean, CLAS

10/30/12

Director, Biology Major Program

Associate Dean, CALS



#### **Biology Major Office**

214 Bartram Hall PO Box 118525 Gainesville, FL 32611-8525 352-273-0116 352-392-3704 Fax Major.biology.ufl.edu

TO: David Pharies, Associate Dean, CLAS
Brian Harfe, Associate Dean, CLAS
Joel Brendemuhl, Associate Dean, CALS

FROM: Teresa Mutahi, Assistant Director, Biology Major



DATE: September 12, 2018

SUBJECT: BMEC Approved Courses

The Biology Major Executive Committee (BMEC) has approved the following courses to meet physiology and additional life science (ALS) electives requirements.

- 1. ALS3153, *Agricultural Ecology*, approved as an ALS elective for the BIO-BA UFO track on April 17, 2018.
- 2. SWS 4223, *Environmental Biogeochemistry*, as an ALS elective for the BIO-BA UFO and BIO-BA residential tracks on April 17, 2018. Please note: for BIO-PRO and BLY-PRO tracks, this course was approved as an ALS elective on April 18, 2014.
- 3. BMS4136C, *Human Histology*, approved as an ALS elective for the BIO-BA residential track on September 17, 2017.
- 4. BSC3096, *Human Physiology*, as a third alternative course for the BIO-PRO and BLY-PRO Physiology requirement on February 1, 2017.
- 5. ENY 2890, *Scientific Engagement*, as ALS elective for BIO-PRO and BLY-PRO tracks on February 1, 2017. Please note: for BIO-BA Residential, this course was approved as an ALS elective on May 24, 2013.
- 6. APK2100C, *Applied Human Anatomy with Lab*, as an ALS elective for the BIO-BA residential and UFO tracks on December 3, 2015.
- 7. ANT3514C, *Introduction to Biological Anthropology*, as an ALS for the BIO-BA residential and UFO tracks on December 3, 2015.
- 8. PCB4553, *Population Genetics*, was approved as an ALS elective for BIO-PRO and BLY-PRO tracks on July 17, 2015.

BMEC requests a memo indicating your concurrence with this curricular change that we may include with our submittal through the Academic Approval System.

cc: Kelly Rice, Director, BMEC

# **Bachelor of Science, Preprofessional Biology Approved Electives List**

# See course descriptions for prerequisites and requirements

Code	Title	Credits
AGR 4320	Plant Breeding	3
<u>ALS 4161</u>	Exotic Species and Biosecurity Issues	3
ALS 4162	Consequences of Biological Invasions	3
ALS 4163	Challenges in Plant Resource Protection	3
ANS 3006	Introduction to Animal Science	4
& <u>3006L</u>	and Introduction to Animal Science Laboratory	4
ANS 3319C	Reproductive Physiology and Endocrinology in Domestic Animals	4
ANS 3440	Principles of Animal Nutrition	4
ANT 4531	Molecular Genetics of Disease	3
ANT 4552	Primate Behavior	3
ANT 4554C	Primate Evolution	3
<u>ANT 4586</u>	Human Evolution	3
BMS 4136C	Human Histology	4
<b>BOT 2710C</b>	Practical Plant Taxonomy	3
<b>BOT 2800C</b>	Plants in Human Affairs	3
<b>BOT 3151C</b>	Local Flora of North Florida	3
BOT 3503	Physiology and Molecular Biology of Plants	5
& <u>3503L</u>	and Physiology and Molecular Biology of Plants Laboratory	3
BOT 4621	Plant Geography	2
BOT 4935	Special Topics	1-4
BSC 1920	First Year Introduction: Biology at UF	1
BSC 2862	Global Change Ecology and Sustainability	3
BSC 3402	Theory and Practice in the Biological Sciences	2
BSC 3422C	Principles of the Biotechnology Industry	2
BSC 3911	Entering Research in Biology	1
BSC 4821C	Evolutionary Biogeography	3
BSC 4910	Individual Mentored Research in Biology	0-3
BSC 4912	Advanced Mentored Research in Biology	0-4
ENY 2890	Using Insect Research to Understand the Nature of Scientific Engagement	3
ENY 3005	Principles of Entomology	3
& <u>3005L</u>	and Principles of Entomology Laboratory	3
ENY 3163	Invertebrate Field Biology	3
ENY 3563	Introduction to Tropical Entomology	3

Code	Title	Credits
ENY 3564L	Tropical Entomology Field Laboratory	2
ENY 4161	Insect Classification	3
ENY 4210	Insects and Wildlife	3
ENY 4453	Behavioral Ecology and Systematics	3
ENY 4455C	Social Insects	3
ENY 4660 & 4660L	Medical and Veterinary Entomology and Medical and Veterinary Entomology Laboratory	3
FAS 4202C	Biology of Fishes	4
FAS 4305C	Introduction to Fishery Science	3
FOR 3342C	Tree Biology	3
GLY 3603C	Paleontology	4
HOS 3305	Introduction to Plant Molecular Biology	3
HOS 4304	Horticultural Physiology	3
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MCB 4304	Genetics of Microorganisms	3
MCB 4320C	The Microbiome	3
MCB 4403	Prokaryotic Cell Structure and Function	3
MCB 4503	General Virology	3
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PCB 3023	Essential Cell Biology	3
PCB 3134	Eukaryotic Cell Structure and Function	3
PCB 3601C	Plant Ecology	3
PCB 4043C	General Ecology	4
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PCB 4233	Immunology	3
PCB 4522	Molecular Genetics	3
PCB 4553	Population Genetics	4
PCB 4674	Evolution	4
PLP 3002C	Fundamentals of Plant Pathology	4
<u>PLS 3004C</u>	Principles of Plant Science	3
PLS 3223 & 3223L	Plant Propagation and Plant Propagation Laboratory	3

Code	Title	Credits
PSB 3002	Physiological Psychology	3
PSB 3340	Behavioral Neuroscience	3
PSB 4434	Neurochemistry, Pharmacology and Behavior	3
PSB 4504	Developmental Psychobiology	3
PSB 4654	Chemical Senses and Behavior	3
PSB 4810	Neurobiology of Learning and Memory	3
PSB 4823	Principles of Integrative Physiological Psychology	3
WIS 3553C	Introduction to Conservation Genetics	4
WIS 4203C	Landscape Ecology and Conservation	3
<u>WIS 4443C</u>	Wetland Wildlife Ecology	4
WIS 4501	Introduction to Wildlife Population Ecology	3
<u>WIS 4547C</u>	Avian Field Techniques	2
<u>WIS 4554</u>	Conservation Biology	3
<u>WIS 4601C</u>	Quantitative Wildlife Ecology	3
<u>WIS 4945C</u>	Wildlife Techniques	4
<b>ZOO 3513C</b>	Animal Behavior	4
<b>ZOO 3603C</b>	Evolutionary Developmental Biology	4
<b>ZOO 3713C</b>	Functional Vertebrate Anatomy	4
<b>ZOO 4205C</b>	Invertebrate Biodiversity	4
<u>ZOO 4232</u>	Human Parasitology	3
<b>ZOO 4307C</b>	Vertebrate Biodiversity	4
<b>ZOO 4403C</b>	Marine Biology	4
<u>ZOO 4472C</u>	Avian Biology	4
<u>ZOO 4926</u>	Special Topics in Zoology	1-4
ENY 2890	Scientific Engagement	3
PCB4553	Population Genetics	4