

Cover Sheet: Request 13875

Biosecurity and Biological Invasions

Info

Process	Certificate New Ugrad/Pro
Status	Pending at PV - University Curriculum Committee (UCC)
Submitter	Tolulope Agunbiade agunbiade@ufl.edu
Created	4/19/2019 11:11:50 AM
Updated	10/8/2020 1:32:20 PM
Description of request	New undergraduate certificate

Actions

Step	Status	Group	User	Comment	Updated
Department	Approved	CALS - Entomology and Nematology 514914000	Heather Mcauslane		4/19/2019
No document changes					
College	Recycled	CALS - College of Agricultural and Life Sciences	Joel H Brendemuhl	Recycled by the CALS CC. Comments have been sent to the submitter.	9/20/2019
Biosecurity Certificate SLOs.pdf					9/5/2019
ENY 3225C - Philip Koehler.pdf					9/5/2019
ENY 3510C - Adam Dale.pdf					9/5/2019
ENY 4202 - Nathan Burkett-Cadena.pdf					9/5/2019
IPM 3022 - Silvana Paula-Moraes.pdf					9/5/2019
FOS 4202 - Keith Schneider.pdf					9/5/2019
FAS 4932 - Jeffrey Hill.pdf					9/5/2019
ALS 4162 - James Cuda.pdf					9/6/2019
ALS 4162 - Andrea Lucky.pdf					9/6/2019
Department	Approved	CALS - Entomology and Nematology 514914000	Heather Mcauslane		9/26/2019
No document changes					
College	Approved	CALS - College of Agricultural and Life Sciences	Joel H Brendemuhl	Edits requested by the CALS CC have been addressed.	5/8/2020
SWS 4307 - Julie Meyer.pdf					10/25/2019
ALS 4161 and ENY 4905 - Tolulope Agunbiade .pdf					10/25/2019
Consult with Animal Science.pdf					11/7/2019
Consult with Vet Medicine.pdf					11/13/2019
Office of Institutional Planning and Research	Approved	PV - Office of Institutional Planning and Research	Cathy Lebo		5/8/2020
No document changes					
Associate Provost for Undergraduate Affairs	Approved	PV - Associate Provost for Undergraduate Affairs	Casey Griffith		9/21/2020
No document changes					

Step	Status	Group	User	Comment	Updated
University Curriculum Committee	Pending	PV - University Curriculum Committee (UCC)			9/21/2020
No document changes					
Office of the Registrar					
No document changes					
OIPR Notified					
No document changes					
Student Academic Support System					
No document changes					
Catalog					
No document changes					
Academic Assessment Committee Notified					
No document changes					
College Notified					
No document changes					

Certificate|New for request 13875

Info

Request: Biosecurity and Biological Invasions
Description of request: New undergraduate certificate
Submitter: Tolulope Agunbiade agunbiade@ufl.edu
Created: 10/8/2020 1:14:24 PM
Form version: 12

Responses

Certificate Name Biosecurity and Biological Invasions

Transcript Title Biosecurity and Biological Invasions

Credits 10

Level Baccalaureate

CIP Code 26.0702

Degree Program Entomology and Nematology

Effective Term Earliest Available

Effective Year Earliest Available

Certificate Description This certificate program is designed to equip students with the skill set necessary for the detection, surveillance, and management of agricultural and medical threats. Students will acquire critical thinking skills for the assessment, management, and communication of the biosecurity risks and challenges facing the 21st century.

Requirements for Admission Applicants for this certificate program must have taken:

1. Integrated Principles of Biology 1 and Laboratory (BSC 2010 and 2010L), and Integrated Principles of Biology 2 and Laboratory (BSC 2011 and 2011L), OR
2. two semesters of introductory biology courses from an accredited higher institution.

Requirements for Completion The minimum requirements for completion of the certificate course are 10 credits taken as follows:

Required (7 credits)

1. ALS 4161, Exotic Species and Biosecurity Issues, 3 credits
2. ALS 4162, Consequences of Biological Invasions, 3 credits
3. ENY 4905, Internship, 1 credit

Elective (3 credits)

1. ENY 4202, Ecology of Vector-Borne Diseases, 2 credits
2. IPM 3022, Fundamentals of Plant-Pest Management, 3 credits
3. IPM 4114, Insect Pest and Vector Management, 3 credits
4. ENY 3225C, Principles of Urban Pest Management, 3 credits
5. ENY 3510C, Turf and Ornamental Entomology, 3 credits
6. FOS 4202, Food Safety and Sanitation, 2 credits
7. FAS 4932, Invasion Ecology of Aquatic Animals, 3 credits
8. PLP 4104, Applied Plant Disease Management, 3 credits
9. SWS 4307, Ecology of Waterborne Pathogens, 3 credits

Rationale and Place in Curriculum The current drive for globalization, increased travel and trade in food and agricultural products, emerging infectious diseases, and the threat of bioterrorism makes the field of biosecurity an area of major and widespread importance. Biosecurity involves a strategic and integrated approach to excluding, eradicating, and managing threats to human, animal and plant life and health, the environment, and global trade. The overall goal of this certificate program is to equip students with the skill set necessary for the detection, surveillance, and management of agricultural and medical threats. Students will acquire critical thinking skills for the assessment, management, and communication of the biosecurity risks and challenges facing the 21st century. The biosecurity certificate is designed to meet the career and professional needs of those interested in, or already in industry, public health, homeland security, international security, quarantine and pest management, and organizations involved in emergency preparedness, and general threat management.

Student Learning Outcomes	Student Learning Outcome Type	Student Learning Outcome	Associated Courses	Assessment Type	Assessment Method
Content knowledge	1.	Assess the biosecurity challenges facing the 21st century			
	2.	Evaluate the attributes and characteristics that make particular animals, plants, and micro-organisms biosecurity threats			
	3.	Describe the principles of pest exclusion, eradication, and management as it relates to biosecurity			
	4.	Assess risk assessment, risk management, and risk communication in biosecurity measures			
	5.	Evaluate the structure and roles of federal, state, and local governments, and international organizations in biosecurity issues	ALS 4161, ALS 4162		
			Course-related exams, assignments and term paper		Single faculty member
Critical thinking	6.	Develop critical thinking skills for the detection, surveillance, and assessment of biosecurity risks			
	7.	Conduct risk assessment and develop risk management strategies	ALS 4161, ALS 4162		
			Course-related exams, assignments and term paper		Single faculty member
Communication	8.	Relate knowledge gained in the classroom to real world biosecurity issues			
	9.	Develop hands-on communication and professional skills through interactions with researchers working in the field of biosecurity	ENY 4905		Student evaluation by on-site supervisor or mentor
					Rubric

**Couldn't create PDF for ALS 4161 and
ENY 4905 - Tolulope Agunbiade .pdf**
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RE: Undergraduate Biosecurity Certificate

Lucky, Andrea

Fri 9/6/2019 9:58 AM

To: Cuda, James Paul <jcuda@ufl.edu>; Agunbiade, Tolulope <agunbiade@ufl.edu>;

Cc: Siegfried, Blair D <bsiegfried1@ufl.edu>;

Jim,
Thanks for including me here.

Hi Tolu,
I will be taking over this course and support this course being included in the Biosecurity certificate.
Please let me know if I can provide any additional information to support your proposal to the Curriculum Committee.
Best wishes,
Andrea

From: Cuda, James Paul <jcuda@ufl.edu>
Sent: Friday, September 6, 2019 9:53 AM
To: Agunbiade, Tolulope <agunbiade@ufl.edu>
Cc: Siegfried, Blair D <bsiegfried1@ufl.edu>; Lucky, Andrea <alucky@ufl.edu>
Subject: RE: Undergraduate Biosecurity Certificate

Tolu, I support the inclusion of this course for the undergraduate Biosecurity certificate. I'm cc: Drs. Siegfried and Lucky on this message as the Spring 2020 semester will be the last time I will be teaching this course.

JPC

James P. Cuda, Ph.D.
Professor and Fulbright Scholar
Biological Weed Control
Entomology & Nematology Dept.,
Charles Steinmetz Hall, POB 110620
Gainesville, FL 32611-0620
Phone: 352-273-3921; Fax: 352-392-0190
Email: jcuda@ufl.edu
<http://entnemdept.ifas.ufl.edu/cv/people/cuda>



From: Agunbiade, Tolulope <agunbiade@ufl.edu>
Sent: Thursday, September 5, 2019 12:38 PM
To: Cuda, James Paul <jcuda@ufl.edu>
Subject: Undergraduate Biosecurity Certificate

Good day Dr. Cuda,

I am Tolulope Agunbiade, a Lecturer in the Entomology and Nematology Department, University of Florida. I am working on an undergraduate Biosecurity certificate and I am pleased to inform you that one of the required courses being considered for the certificate program is a 3 credit course that you teach in Spring (ALS 4162 – Consequences of Biological Invasions). The proposal has been submitted to the curriculum committee, and following that, I would need your acknowledgement of the inclusion of your course in the certificate. Please respond with an email acknowledging your course as one of the required courses for the certificate. Please I hope to read from you soon concerning this. Thank you.

Best Regards,

Tolulope Agunbiade, Ph.D.

RE: Undergraduate Biosecurity Certificate

Cuda, James Paul

Fri 9/6/2019 9:52 AM

To: Agunbiade, Tolulope <agunbiade@ufl.edu>;

Cc: Siegfried, Blair D <bsiegfried1@ufl.edu>; Lucky, Andrea <alucky@ufl.edu>;

Tolu, I support the inclusion of this course for the undergraduate Biosecurity certificate. I'm cc: Drs. Siegfried and Lucky on this message as the Spring 2020 semester will be the last time I will be teaching this course.

JPC

James P. Cuda, Ph.D.

Professor and Fulbright Scholar

Biological Weed Control

Entomology & Nematology Dept.,

Charles Steinmetz Hall, POB 110620

Gainesville, FL 32611-0620

Phone: 352-273-3921; Fax: 352-392-0190

Email: jcuda@ufl.edu

<http://entnemdept.ifas.ufl.edu/cv/people/cuda>



From: Agunbiade, Tolulope <agunbiade@ufl.edu>

Sent: Thursday, September 5, 2019 12:38 PM

To: Cuda, James Paul <jcuda@ufl.edu>

Subject: Undergraduate Biosecurity Certificate

Good day Dr. Cuda,

I am Tolulope Agunbiade, a Lecturer in the Entomology and Nematology Department, University of Florida. I am working on an undergraduate Biosecurity certificate and I am pleased to inform you that one of the required courses being considered for the certificate program is a 3 credit course that you teach in Spring (ALS 4162 – Consequences of Biological Invasions). The proposal has been submitted to the curriculum committee, and following that, I would need your acknowledgement of the inclusion of your course in the certificate. Please respond with an email acknowledging your course as one of the required courses for the certificate. Please I hope to read from you soon concerning this. Thank you.

9/6/2019

RE: Undergraduate Biosecurity Certificate - Agunbiade, Tolulope

Best Regards,

Tolulope Agunbiade, Ph.D.

BIOSECURITY AND BIOLOGICAL INVASIONS

certificate

Approved Electives

Code	Title	Credits
ENY 4202	Ecology of Vector-Borne Diseases	2
IPM 3022	Fundamentals of Plant-Pest Management	3
IPM 4114	Insect Pest and Vector Management	3
ENY 3225C	Principles of Urban Pest Management	3
ENY 3510C	Turf and Ornamental Entomology	3
FOS 4202	Food Safety and Sanitation	2
FAS 4932	Invasion Ecology of Aquatic Animals	3
PLP 4101	Applied Plant Disease Management	3
SWS 4307	Ecology of Waterborne Pathogens	3

BIOSECURITY AND BIOLOGICAL INVASIONS

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[Agricultural and Life Sciences, College of](#)

Biosecurity and Biological Invasions Certificate

This certificate program is designed to equip students with the skill set necessary for the detection, surveillance, and management of agricultural and medical threats. Students will acquire critical thinking skills for the assessment, management, and communication of the biosecurity risks and challenges facing the 21st century.

College: [Agricultural and Life Sciences](#)

Credits: 10 | Completed with minimum grades of C

Contact: agunbiade@ufl.edu | (352) 294-6792

Certificates must contain at least nine credits of coursework that are unique to that program out of all other certificates and minors.

Department Information

Required Courses

Code	Title	Credits
ALS 4161	Exotic Species and Biosecurity Issues	3
ALS 4162	Consequences of Biological Invasions	3
ENY 4905	Internship	1
Approved electives		3
Total Credits		10

Approved Electives

Code	Title	Credits
ENY 4202	Ecology of Vector-Borne Diseases	2
IPM 3022	Fundamentals of Plant-Pest Management	3
IPM 4114	Insect Pest and Vector Management	3
ENY 3225C	Principles of Urban Pest Management	3
ENY 3510C	Turf and Ornamental Entomology	3
FOS 4202	Food Safety and Sanitation	2
FAS 4932	Invasion Ecology of Aquatic Animals	3
PLP 4101	Applied Plant Disease Management	3
SWS 4307	Ecology of Waterborne Pathogens	3

Student Learning Outcomes

Student Learning Outcome Type	Student Learning Outcome	Associated Courses	Assessment Type	Assessment Method
Content knowledge	<ol style="list-style-type: none"> 1. Assess the biosecurity challenges facing the 21st century 2. Evaluate the attributes and characteristics that make particular animals, plants, and micro-organisms biosecurity threats 3. Describe the principles of pest exclusion, eradication, and management as it relates to biosecurity 4. Assess risk assessment, risk management, and risk communication in biosecurity measures 5. Evaluate the structure and roles of federal, state, and local governments, and international organizations in biosecurity issues 	ALS 4161, ALS 4162	Course-related exams, assignments and term paper	Single faculty member
Critical thinking	<ol style="list-style-type: none"> 6. Develop critical thinking skills for the detection, surveillance, and assessment of biosecurity risks 7. Conduct risk assessment and develop risk management strategies 	ALS 4161, ALS 4162	Course-related exams, assignments and term paper	Single faculty member
Communication	<ol style="list-style-type: none"> 8. Relate knowledge gained in the classroom to real world biosecurity issues 9. Develop hands-on communication and professional skills through interactions with researchers working in the field of biosecurity 	ENY 4905	Student evaluation by on-site supervisor or mentor	Rubric

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Animal Science.pdf**
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**Couldn't create PDF for Consult with
Vet Medicine.pdf**
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RE: Undergraduate Biosecurity Certificate

Koehler, Philip G

Thu 9/5/2019 1:21 PM

To: Agunbiade, Tolulope <agunbiade@ufl.edu>;

Hi Tolulope,

Yes. It would be good to have the course listed as an elective for the Biosecurity certificate program.

Phil Koehler

From: Agunbiade, Tolulope <agunbiade@ufl.edu>

Sent: Thursday, September 5, 2019 1:08 PM

To: Koehler, Philip G <pgk@ufl.edu>

Subject: Undergraduate Biosecurity Certificate

Good day Dr. Koehler,

I am Tolulope Agunbiade, a Lecturer in the Entomology and Nematology Department, University of Florida. I am working on an undergraduate Biosecurity certificate and I am pleased to inform you that one of the elective courses being considered for the certificate program is a 3 credit course that you teach in Spring (ENY 3225C – Principles of Urban Pest Management). Please I would need your acknowledgement of the inclusion of your course in the certificate. Please respond with an email acknowledging your course as one of the elective courses for the certificate. I hope to read from you soon concerning this. Thank you.

Best Regards,

Tolulope Agunbiade, Ph.D.

Re: Biosecurity Undergraduate Certificate

Dale, Adam G

Thu 4/4/2019 10:46 AM

To: Agunbiade, Tolulope <agunbiade@ufl.edu>;

Hi Tolu,

That's great. Glad to hear that my class will be included as an elective for this certificate program. Please let me know if you have any questions for me or need any additional information.

Thanks,
Adam

Adam Dale, Ph.D.
Assistant Professor
Entomology & Nematology
University of Florida, Gainesville
352-273-3976
agdale@ufl.edu
Website: <https://dalelab.org>
Twitter: @adamGdale

From: Agunbiade, Tolulope
Sent: Tuesday, April 2, 2019 4:44 PM
To: Dale, Adam G
Subject: Biosecurity Undergraduate Certificate

Hi Dr. Dale,

I am Tolulope Agunbiade, a Lecturer in the Entomology and Nematology Department, University of Florida. I am working on an undergraduate certificate course in Biosecurity. I would like to inform you that one of the elective courses being considered for the certificate course is a 3 credit course that you teach in Fall – Turf and Ornamental Entomology (ENY 3510C). Please I hope to read from you soon concerning this. Thank you.

Best Regards,

Tolulope A. Agunbiade, Ph.D.
Lecturer
Department of Entomology and Nematology
University of Florida
Gainesville, FL 32608
agunbiade@ufl.edu

Re: Undergraduate Biosecurity Certificate

Burkett-Cadena, Nathan Daniel

Thu 9/5/2019 12:51 PM

To: Agunbiade, Tolulope <agunbiade@ufl.edu>;

Hi Tolulope Agunbiade,

I acknowledge inclusion of my course (ENY 4202 – Ecology of Vector-Borne Diseases) as one of the elective courses for the undergraduate Biosecurity certificate.

Thank you

Nathan Burkett-Cadena, PhD

Assistant Professor

University of Florida | IFAS

Florida Medical Entomology Laboratory

200 9th St. SE

Vero Beach, FL 32962

(772) 226-6617 *note new phone number*

From: Agunbiade, Tolulope

Sent: Thursday, September 5, 2019 12:43 PM

To: Burkett-Cadena, Nathan Daniel

Subject: Undergraduate Biosecurity Certificate

Good day Dr. Burkett-Cadena,

I am Tolulope Agunbiade, a Lecturer in the Entomology and Nematology Department, University of Florida. I am working on an undergraduate Biosecurity certificate and I am pleased to inform you that one of the elective courses being considered for the certificate program is a 2 credit course that you teach in Fall (ENY 4202 – Ecology of Vector-Borne Diseases). Please I would need your acknowledgement of the inclusion of your course in the certificate. Please respond with an email acknowledging your course as one of the elective courses for the certificate. I hope to read from you soon concerning this. Thank you.

Best Regards,

Tolulope Agunbiade, Ph.D.

RE: Undergraduate Biosecurity Certificate

Hill, Jeffrey Eugene

Thu 9/5/2019 4:28 PM

To: Agunbiade, Tolulope <agunbiade@ufl.edu>;

Hi Tolulope.

I am happy to have my course as an elective for the Biosecurity certificate. Invasion Ecology of Aquatic Animals is offered during spring semesters on even-numbered years. It will be taught this spring (2020) with a face-to-face option and an online, distance option.

Please let me know if you need any additional information.

Best regards

Jeff

Jeffrey E. Hill, Ph.D.

Associate Professor and Extension Specialist

Tropical Aquaculture Laboratory

Program of Fisheries and Aquatic Sciences

School of Forest Resources and Conservation

Institute of Food and Agricultural Sciences/University of Florida

1408 24th St. SE

Ruskin, FL 33570

phone: 813-671-5230 ext 118

fax: 813-671-5234

email: jeffhill@ufl.edu

Tropical Aquaculture Laboratory website:

<http://tal.ifas.ufl.edu/>

Program website:

<http://fishweb.ifas.ufl.edu>

School of Forest Resources and Conservation

<http://www.sfrc.ufl.edu/>

From: Agunbiade, Tolulope

Sent: Thursday, September 05, 2019 12:58 PM

To: Hill, Jeffrey Eugene

Subject: Undergraduate Biosecurity Certificate

Good day Dr. Hill,

I am Tolulope Agunbiade, a Lecturer in the Entomology and Nematology Department, University of Florida. I am working on an undergraduate Biosecurity certificate and I am pleased to inform you that one of the elective courses being considered for the certificate program is a 3 credit course that you teach in

9/5/2019

RE: Undergraduate Biosecurity Certificate - Agunbiade, Tolulope

Spring (FAS 4932 – Invasion Ecology of Aquatic Animals). Please I would need your acknowledgement of the inclusion of your course in the certificate. Please respond with an email acknowledging your course as one of the elective courses for the certificate. I hope to read from you soon concerning this. Thank you.

Best Regards,
Tolulope Agunbiade, Ph.D.

Re: Undergraduate Biosecurity Certificate

Schneider, Keith R

Thu 9/5/2019 3:00 PM

To: Agunbiade, Tolulope <agunbiade@ufl.edu>;

Don't think there will be a problem. FOS4202 is a 2-credit course, FOS5205 is a 3-credit course. It's a piggyback course with grad students doing a back to back lecture on Tuesdays. Involves more writing. They need a micro 2000 level prereq. Only taught live, each fall.

Keith

--

Keith R. Schneider, Ph.D.
Professor, FSHN
University of Florida
359 FSHN Bldg., Newell Dr.
Gainesville, FL 32611
Tel: 352-294-3910
E-mail: keiths29@ufl.edu

From: "Agunbiade, Tolulope" <agunbiade@ufl.edu>
Date: Thu, September 5, 2019 at 1:08 PM
To: Keith Schneider <keiths29@ufl.edu>
Subject: Undergraduate Biosecurity Certificate

Good day Dr. Schneider,

I am Tolulope Agunbiade, a Lecturer in the Entomology and Nematology Department, University of Florida. I am working on an undergraduate Biosecurity certificate and I am pleased to inform you that one of the elective courses being considered for the certificate program is a 2 credit course that you teach in Fall (FOS 4202 – Food Safety and Sanitation). Please I would need your acknowledgement of the inclusion of your course in the certificate. Please respond with an email acknowledging your course as one of the elective courses for the certificate. I hope to read from you soon concerning this. Thank you.

Best Regards,

Tolulope Agunbiade, Ph.D.

RE: Undergraduate Biosecurity Certificate

Paula-Moraes, Silvana

Thu 9/5/2019 12:56 PM

To: Agunbiade, Tolulope <agunbiade@ufl.edu>;

Hi Tolu,

Nice to meet you and yes, I am delighted to have participated in the certificate major for undergrad.

I am just about to review my IPM course for next semester and hope we have a chance to talk and see how I can improve my course to attend your expectations for this certification.

Best

Silvana

Silvana Paula-Moraes | Entomology, PhD
UF/IFAS West Florida Research and Education Center
4253 Experiment Drive, Hwy 182
Jay, FL 32565
Email: paula.moraes@ufl.edu
Phone: 850-983-7101



From: Agunbiade, Tolulope <agunbiade@ufl.edu>
Sent: Thursday, September 05, 2019 11:47 AM
To: Paula-Moraes, Silvana <paula.moraes@ufl.edu>
Subject: Undergraduate Biosecurity Certificate

Good day Dr. Paula-Moraes,

I am Tolulope Agunbiade, a Lecturer in the Entomology and Nematology Department, University of Florida. I am working on an undergraduate Biosecurity certificate and I am pleased to inform you that one of the elective courses being considered for the certificate program is a 3 credit course that you teach in Spring (IPM 3022 – Fundamentals of Plant-Pest Management). Please I would need your acknowledgement of the inclusion of your course in the certificate. Please respond with an email acknowledging your course as one of the elective courses for the certificate. I hope to read from you soon concerning this. Thank you.

Best Regards,

Tolulope Agunbiade, Ph.D.

BIOSECURITY AND BIOLOGICAL INVASIONS

certificate

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