CALS Curriculum Committee Meeting
February 15, 2019
2:00 p.m.
1044 McCarty Hall D

Members: J. Brendemuhl, J.C. Bunch, D. Coenen, D. Gabriel, P. Inglett, S. Johnson, B. Kolaczkowski, A. Mathews, G. Nunez, B. Pearson, W. Porter, C. Prince, K. Rose, S. Sager (Chair), M. Sharp, C. Stefanou, L. Warren, J. Weeks, C. Wilson A. Wysocki

Agenda and Index for Materials

Approve Minutes from January 11, 2018 meeting

Dr. Brendemuhl: Update from UCC

Graduate New Course Proposals

1. FOS 6XXX – Food and Environmental Virology (req. #13469)

2. WIS 6XXX – Biodiversity (req. #13539)

3. WIS 6XXX – Data Carpentry for Biologists (req. #13538)

Graduate Course Change Proposal

4. MCB 6781 – Archaea and Biotechnology (req. #13524)

Undergraduate New Course Proposals

5. ALS 3XXX – Home and Community Gardening: Collegiate Master Gardener (req. #13576)

6. FOS 3XXX – Life After Graduation (req. #12308)

7. FOS 4XXX – Food and Environmental Virology (req. #13470)

Undergraduate Course Change Proposals

8. ALS 3203 – PC Use in Agriculture (req. #13492)

9. FAS 2024 – Global and Regional Perspectives in Fisheries (req. #13488)

10. MCB 4782 – Archaea and Biotechnology (req. #13523)

11. PEN 2138 – Advanced SCUBA Diving (req. #13572)

Certificate Proposal

12. Weed Science Graduate Certificate (req. #12696)

Curriculum

13. Proposed Changes to the Agricultural Operations Management Undergraduate Curriculum (req. #13588)

14. Proposed Changes to the Family, Youth, and Community Sciences 8-Semester Plan (req. #13521)

15. Proposed Changes to the Natural Resource Conservation Undergraduate Curriculum (req. #13489)

Recycled Submission

16. SWS 6XXX – Modeling Land Biogeochemistry (req. #13378)

Item previously submitted 12/14/2018. Comments as follows: A motion was made by Dr. Johnson to recycle this item back to the department for required updates and resubmission. The motion was approved. Requested consults that have already been requested by the department must be included. The weekly schedule of topics on the UCC form is difficult to follow and should be simplified. This could be a formatting issue. The course description in the syllabus is too long and should match the UCC form. Additional information can be included under a different heading. The course parts and schedule section in the syllabus is missing weeks 15 and 16.

Discussion

17. Proposed Guidelines for CALS Course Objectives

CALS Curriculum Committee Meeting
January 11, 2019
Submitted by James Fant

Members Present: J. Brendemuhl, J.C. Bunch, D. Coenen, D. Gabriel, P. Inglett, S. Johnson, B. Kolaczkowski, A. Mathews, G. Nunez, B. Pearson, C. Prince, K. Rose, S. Sager, M. Sharp, C. Stefanou, J. Weeks, C. Wilson, A. Wysocki

Substitutes: Amie Imler for L. Warren
Adam Watson for W. Porter

Guests: Rhiannon Pollard

Call to Order: The College of Agricultural and Life Sciences Curriculum Committee met on January 11, 2019 in Rm. 1044 McCarty Hall D. Scott Sager called the meeting to order at 2:00 p.m.

Previous agenda items and supporting material can be found on the CALS Curriculum Committee homepage under document archives: http://cals.ufl.edu/faculty-staff/curriculum-committee.php

Approval of Minutes: A motion was made by Dr. Kolaczkowski to approve the minutes from the December 14, 2018 meeting of the CALS CC. The motion was approved.

All items approved by the committee will be forwarded to either the Graduate Curriculum Committee (GCC), Graduate Council (GC) or the University Curriculum Committee (UCC) once any changes requested are made and the submission is complete.

Websites: Grades – https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx
Syllabus Statements – http://cals.ufl.edu/faculty-staff/docs/policies/CALS%20Syllabus%20Policy%202017-18.pdf
Absences & Make-Ups – https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx

Update from UCC: Dr. Brendemuhl noted the following item was acted upon at the UCC meeting on December 18th: A) Proposed new undergraduate course: 1) HOS 3XXX The Organic Debate: Organic Agriculture Development and Regulations (approved). He further noted that the following item was on the UCC agenda for January 15th: A) Proposed change to undergraduate course: 1) FYC 4941 Practicum in Family, Youth and Community Sciences. The UCC is revising the Repeat Course Policy and addressing how to establish guidelines for participation/engagement assessments with the potential to establish a rubric. Lastly, the call for course proposals for Quest 2 is out and the deadline is February 3rd 2019.

Graduate New Course Proposals

1. AEC 6XXX – Thesis/Dissertation Proposal Development (req. #13427)

A motion was made by Dr. Kolaczkowski to approve this item with changes required. The motion was approved. Consider adding the department name to the proposed title. A complete grading scale needs to be added to the UCC form and the syllabus.

2. WIS 6XXX – US Wildlife Law, Policy, and Ethics (req. #12888)

A motion was made by Dr. Kolaczkowski to recycle this item back to the department for required changes and resubmission. The motion was approved. Provide an external consultation form from the UF College of Law to ensure there is no excessive overlap with any existing courses. Provide a syllabus for the existing wildlife and conservation law course so the committee can see the differences. The committee suggests changing the verbs in the learning objectives section in the syllabus and on the UCC form. The verbs are acceptable but weak. There may be an issue further on in the approval process with their use considering this is a graduate level course. Also, the last objective (#7) should be explained further or removed completely. There needs to be a more substantial reading list included on the UCC form and in the syllabus for a graduate level course submission. The syllabus must contain available office hours. Condense all references to the courses make-up/late assignment policy and be sure not to contradict university policy. Check the submission for typing errors. The syllabus must contain the most recent version of the CALS syllabus statements boilerplate. This can be found at: http://cals.ufl.edu/faculty-staff/docs/policies/CALS%20Syllabus%20Policy%202017-18.pdf.

3. WIS 6XXX – Applied Wildlife Forensic Genetics (req. #12953)

A motion was made by Dr. Wilson to recycle this item back to the department for required changes and resubmission. The motion was approved. The course description on both the UCC form and syllabus must match. Also, Harvey-Weinberg needs to be changed to Hardy-Weinberg. The committee suggests changing the verbs in the learning objectives section in the syllabus and on the UCC form. The verbs are acceptable but weak. There may be an issue further on in the approval process with their use considering this is a graduate level course. Include an explanation of the "Self-evaluation" referenced in week 15 of the topics schedule. In the Point Assignments section of both the UCC form and syllabus the percentages listed total 103. In the syllabus, when referring to the course bulletin board, you must use the university's current learning management system, Canvas. The term Bulletin Board could be confusing to students. The syllabus must contain the most recent version of the CALS syllabus statements boilerplate. This can be found at: http://cals.ufl.edu/faculty-staff/docs/policies/CALS%20Syllabus%20Policy%202017-18.pdf.

Discussion

Rhiannon Pollard provided and update on the progress of the Objective Committee and drafts of potential documents that will potentially be included on the CALS Curriculum Committee website.

The meeting was adjourned at 2:53 p.m.

(1)

Cover Sheet: Request 13469

FOS 6xxx FOOD AND ENVIRONMENTAL VIROLOGY

Info

Process	Course|New|Grad
Status	Pending at CALS - College of Agricultural and Life Sciences
Submitter	Naim Montazeri-Djouybari nmontazeri@ufl.edu
Created	1/3/2019 12:26:08 PM
Updated	1/9/2019 8:25:55 AM
Description of request	I kindly request reviewing the attached syllabus for the newly developed course "Food and Environmental Virology" for the approval through the UF course registration system.

Actions

Step	Status	Group	User	Comment	Updated
Department	Transferred	CALS - Agricultural and Life Sciences - General 514903000	Joel H Brendemuhl	This request must first be approved by the FSHN department and it also needs a syllabus for both the undergraduate and graduate course uploaded.	1/3/2019
No document changes					
Department	Approved	CALS - Food Science and Human Nutrition 514915000	Susan Percival		1/9/2019
2019_FEV_Montazeri_122518_grad_NM.docx 2019_FEV_Montazeri_122518_uniqueness_NM.docx					1/4/2019 1/4/2019
College	Pending	CALS - College of Agricultural and Life Sciences			1/9/2019
No document changes					
Graduate Curriculum Committee					
No document changes					
University Curriculum Committee Notified					
No document changes					
Statewide Course Numbering System					
No document changes					
Graduate School Notified					
No document changes					
Office of the Registrar					
No document changes					
College Notified					
No document changes					

Course|New for request 13469

Info

Request: FOS 6xxx FOOD AND ENVIRONMENTAL VIROLOGY
Description of request: I kindly request reviewing the attached syllabus for the newly developed course "Food and Environmental Virology" for the approval through the UF course registration system.
Submitter: Naim Montazeri-Djouybari nmontazeri@ufl.edu
Created: 1/3/2019 12:40:26 PM
Form version: 2

Responses

Recommended Prefix FOS
Course Level 6
Number XXX
Category of Instruction Intermediate
Lab Code None
Course Title Food and Environmental Virology
Transcript Title Food/Environ Virology
Degree Type Graduate

Delivery Method(s) On-Campus
Co-Listing Yes
Co-Listing Explanation This course is designed for upper-level undergraduate and graduate students. According to the Bloom's taxonomy, the content of this course is intended to help students understand, apply, and analyze (draw connection among ideas) the issues in food and environmental virology as its relevance to food-borne and water-borne illnesses. Both undergraduate and graduate students will receive the same presentation slides every session. Further reading materials (book chapters) will be provided based on the necessity of some sessions for a deeper understanding of the concepts.

There are some specific strategies to differentiate graduate students, in which graduate students
- Will be provided with additional reading materials of mainly peer-reviewed articles relevant to the session subject areas. These extra reading materials will be included in their final exam. Questions will carry different points for graduate vs. undergraduate students to compensate for the extra questions, which will be considered for the graduate students.
- Will discuss a peer-reviewed article or a topic of interest, selected by the help of the instructor, as a 20-30 min oral presentation followed by question and answer. Students will use PowerPoint slide sets for in-class presentations. PowerPoint slide sets must be submitted to the instructor by 11:59 p.m. on the 4rd calendar day before their due dates. Students are expected to communicate with the instructor in advance to ensure the format and accuracy of the content of their presentation. The slide sets will be uploaded to Canvas and used as course material for the exams.

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sets will be uploaded to Canvas and used as course material for the exams.

The following table will be used for grading purposes:

Activity/Graduates/Undergraduates
Mid-term exam 1: 200/200
Mid-term exam 2: 200/200
Assignment 1: 50/100
Assignment 2: 50/100
Presentation: 100/-
Final exam: 400/400
TOTAL:1000/1000
Effective Term Earliest Available
Effective Year 2019
Rotating Topic? Yes
Repeatable Credit? No

Amount of Credit 2
If variable, # min 2
If variable, # max 3
S/U Only? No
Contact Type Regularly Scheduled
Weekly Contact Hours 5
Course Description Food virology is an emerging topic in the field of microbial food safety. This course explores the role of pathogenic viruses in public health; their environmental transmission to human; isolation and detection methods; and prevention and control strategies. Through this course, students can develop a competency framework within their discipline.
Prerequisites MCB2000/L, MCB3020/L, FOS4222, MCB4503/5505, or permission of the instructor
Co-requisites N/A
Rationale and Placement in Curriculum Food virology is an emerging topic in the microbial food safety field. Food-borne and water-borne illnesses pose a huge health-care associated burden worldwide. Viruses' presence in an ecosystem, transmission to food, their interaction with the host, infectious cycles, and decontamination methods could be different from that of the bacteria. This course addresses these issues and covers a broad range of topic from basic virology to applied concepts. In class discussions engage students on some current issues and challenges such as contamination incidences in enclosed settings such as cruise ships, healthcare, catering facilities, as well as the public health consequences of natural disasters such as hurricanes and strategies to decontaminate viruses and prevent further spread of the pathogens. Therefore, this course can be beneficial to educate the student on the risks of food-borne and water-borne pathogenic viruses and help students build competency in their field.
Course Objectives By the end of this course the students will be able to:
1. Recognize important food-borne and water-borne pathogenic viruses and distinguish the occurrence of viral infections from a global perspective while illustrating the incidences of the viral infections in low-income vs. high-income countries, or in confined settings such as health-care facilities, restaurants, food processing plants, farms, and aquaculture facilities
2. Critically relate and illustrate specific molecular mechanisms under which viruses persist in the environment, transfer to food and/or contact surfaces, and the evolutionary pathways contributing to the emergence of new and potentially more virulent strains
3. Explain methods for the isolation, purification, and detection of viruses in environmental samples including their advantages and disadvantages, and rationally determine the appropriate methodologies based on the downstream applications
4. Assess and critically analyze potential routes of contamination of food, water, and contact surfaces with food-borne and water-borne viruses, and logically recommend proper control and prevention strategies in accordance with each specific route such as food handlers, wastewater, severe weather conditions, floods, and runoff waters.
Course Textbook(s) and/or Other Assigned Reading REQUIRED READING MATERIAL
- Further readings materials: mainly book chapters
- Selected peer-reviewed articles, including but not limited to:
• Santiana et al. 2018. Vesicle-cloaked virus clusters are optimal units for inter-organismal viral transmission. Cell Host Microbe, 24(2): 208-220.
• Chmielewski and Swayne. 2011. Avian influenza: public health and food safety concerns. Annu Rev Food Sci Technol. 2:37-57.

- Torres-Barceló et al. 2016. Evolutionary Rationale for Phages as Complements of Antibiotics. Trends Microbiol. 24(4): 249-256.
- Wigginton and Kon. 2012. Virus disinfection mechanisms: the role of virus composition, structure, and function. Curr Opin Virol. 2: 84-89.
- Graaf et al. 2016. Human norovirus transmission and evolution in a changing world. Nat Rev Microbiol. 14: 421-433.

RECOMMENDED READING MATERIALS

- Cook N. 2013. Viruses in Food and Water - Risks, Surveillance and Control. Woodhead Publishing, England
- Koopmans M. et al. 2008. Food-Borne Viruses - Progress and Challenges. American Society for Microbiology Press, Washington, DC, USA
- Knipe D. M. & Howley P. M. 2007. Fields Virology. 5th Edition. Lippincott Williams & Wilkins. Philadelphia, PA, USA
- Carter J. & Saunders V. 2013. Virology: Principles & Applications. 2nd Edition. John Wiley & Sons Ltd. England
- Peer-reviewed articles published in prestigious journals such as the Journal of Virology, Food and Environmental Virology, Food and Environmental Microbiology, and Journal of Food Protection
- University of Florida libraries and online sources such as e-books, ILL, and Knovel App.
- Other reliable online sources such as This Week In Virology, by Dr. V. Racaniello, url: http://www.microbe.tv/

Weekly Schedule of Topics Food and Environmental Virology

Class Schedule (subject to change)

FOS6xxx

Week	Day	Date	Topic area/activity
1	F	Aug 23	Pre-assessment and introduction
	W	Aug 28	Basic virology - I
2	F	Aug 30	Basic virology - II
	W	Sep 4	Food-borne viruses and global health I
3	F	Sep 6	Food-borne viruses and global health II
	W	Sep 11	Hepatitis A & E
4	F	Sep 13	Human norovirus
	W	Sep 18	Enteroviruses
5	F	Sep 20	Review for the exam 1
	W	Sep 25	Exam 1
6	F	Sep 27	Isolation and purification of viruses
	W	Oct 2	Detection and quantification of viruses
7	F	Oct 4	Cell culture systems
	W	Oct 9	Utilization of surrogates Assignment 1 due
8	F	Oct 11	Bacteriophages Course evaluation
	W	Oct 16	Virus-bacteria interaction
9	F	Oct 18	Peer-review article discussion
	W	Oct 23	Review for the exam 2
10	F	Oct 25	Exam 2
	W	Oct 30	Viruses persistence in water and sediment
11	F	Nov 1	Viral presence in sewage (wastewater)
	W	Nov 6	Viral contamination by food handlers
12	F	Nov 8	Food-borne viruses in meat and seafood
	W	Nov 13	Food-borne viruses in fresh produce Assignment 2 due
13	F	Nov 15	Virus inactivation – processing technologies
	W	Nov 20	Virus inactivation - surface decontamination
14	F	Nov 22	No class (Thanksgiving holiday)
	W	Nov 27	Peer-review article discussion
15	F	Nov 29	Prions
	W	Dec 4	Review for the final exam UF course evaluation
16	F	Dec 6	No class (reading days)
	W	Dec 11	Final exam

Links and Policies COURSE STRUCTURE

This is an in-class course and will be delivered through lectures using slides and videos. Further reading materials such as book chapters will be provided for a better understanding of the core concepts. All the further reading materials will be included in the exams. All graduate and undergraduate students will complete and turn in two assignments (each 2-page long) on topics

selected by the instructor. The mid-term exams (50 min) and final exam (90 min) will be closed-book.

Graduate students will discuss a peer-reviewed article of a relevant topic, selected by the help of the instructor, and deliver through a 20-min oral presentation. In-class presentations will be offered using PowerPoint slide sets. The slide sets must be submitted to the instructor by 5 p.m. of the Monday before the date of presentation. Students are expected to communicate with the instructor in advance to ensure the outlines and format of their presentation. The slide sets will be uploaded to Canvas and used as course material for the exams. Additional reading materials including published peer-reviewed articles will be provided by the instructor only for graduate students.

ONLINE COURSE EVALUATION

Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at https://evaluations.ufl.edu. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at https://evaluations.ufl.edu/results/.

COURSE WEBSITE

The course is available via through the UF e-learning website (Canvas); go to http://elearning.ufl.edu/ and click on the Canvas Login button. It requires Gator Link username/password. The course site will be used to course relevant announcements, reading, lecture materials, links, assignments, etc. It is recommended to adjust the setting for announcement alerts. FAQs: http://elearning.ufl.edu/e-learning-basics/uf-e-learning-faqs/; Tutorials: http://elearning.ufl.edu/e-learning-basics/uf-e-learning-tutorials/

ATTENDANCE AND MAKE-UP POLICY

Excused absences must be consistent with university policies in the Graduate Catalog (http://gradcatalog.ufl.edu/content.php?catoid=10&navoid=2020#attendance) and require appropriate documentation. Additional information can be found here: https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx

SOFTWARE USE

All faculty, staff and students of the university are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against university policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.

ACADEMIC HONESTY

As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge: "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity." You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment."

It is assumed that you will complete all work independently in each course unless the instructor provides explicit permission for you to collaborate on course tasks (e.g. assignments, peer reviews, activity log, etc.). Furthermore, as part of your obligation to uphold the Honor Code, you should report any condition that facilitates academic misconduct to appropriate personnel. It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For more information regarding the Student Conduct & Honor Code, please see: https://sccr.dso.ufl.edu/students/student-conduct-code/.

STUDENT PRIVACY

There are federal laws protecting your privacy with regards to grades earned in courses and on individual assignments. For more information, please see: http://registrar.ufl.edu/catalog0910/policies/regulationferpa.html.

STUDENTS WITH DISABILITIES

Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, www.dso.ufl.edu/drc/) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

CAMPUS HELPING RESOURCES

Students experiencing crises or personal problems that interfere with their general wellbeing are encouraged to utilize the university's counseling resources. The Counseling & Wellness Center provides confidential counseling services at no cost for currently enrolled students. Resources are available on campus for students having personal problems or lacking clear career or academic goals, which interfere with their academic performance:

- U Matter, We Care: If you or a friend is in distress, please contact umatter@ufl.edu or 352-392-1575 so that a team member can reach out to the student.
- Counseling and Wellness Center: http://www.counseling.ufl.edu/cwc, and 352-392-1575.
- University Police Department: 352-392-1111 or 9-1-1 for emergencies. http://www.police.ufl.edu/.
- Sexual Assault Recovery Services (SARS): Student Health Care Center, 352-392-1161.
- E-learning technical support, 352-392-4357 (select option 2) or e-mail to Learning-support@ufl.edu. https://lss.at.ufl.edu/help.shtml.
- Career Resource Center, Reitz Union, 392-1601. Career assistance and counseling. https://www.crc.ufl.edu/.
- Library Support, http://cms.uflib.ufl.edu/ask. Various ways to receive assistance with respect to using the libraries or finding resources.
- Teaching Center, Broward Hall, 392-2010 or 392-6420. General study skills and tutoring. https://teachingcenter.ufl.edu/.
- Writing Studio, 302 Tigert Hall, 846-1138. Help brainstorming, formatting, and writing papers. https://writing.ufl.edu/writing-studio/.
- Student Complaints Campus: https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf.
- On-Line Students Complaints: http://www.distance.ufl.edu/student-complaint-process.

COMPLAINTS AND CONFLICT RESOLUTION
Policies and services at the University of Florida can be found at https://dso.ufl.edu/areas_services/ for residential and at http://distance.ufl.edu/student-complaint-process/ for online courses.
OTHER INFORMATION
Lecture material and information are the property of the University of Florida and the course instructor and may not be used for any commercial purpose. Students found in violation may be subject to disciplinary action under the University's Student Conduct Code. Only students formally registered for the course are permitted to attend lectures and take quizzes/tests.
Grading Scheme GRADING
There is a total of 1,000 points available throughout the semester (table below). Grades are not curved and not negotiable.

Mid-term exam 1	200
Mid-term exam 2	200
Assignment 1	50
Assignment 2	50
Presentation	100
Final exam	400
TOTAL 1,000	

FINAL GRADE SCALE
Based on the total of 1,000 points.
A = 934-1,000; A- = 900-933; B+ = 867-899; B = 834-866; B- = 800-833; C+ = 767-799; C = 734-766; C- = 700-733; D+ =667-699; D = 634-666; D- = 600-633; E = =599

For further information on UF's Grading Policy, consult:
https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx

Instructor(s) Naim Montazeri

Naim Montazeri, Ph.D.
FSHN, room 341A

Dec 25, 2018

Course Syllabus

Uniqueness across the UF courses

FOOD AND ENVIRONMENTAL VIROLOGY

Fall semester 2019

The proposed **Food and Environmental Virology (FEV)** is a unique course not only at the UF but across many universities throughout the United States. Current virology courses at the UF are tailored to basic and medical sciences; however, the proposed course focuses on environmental aspects of food-borne and water-borne viruses and offers practical applications to food safety. The first two introductory sessions of the Food and Environmental Virology partially overlap with other courses but are essential for the basic understanding of the core concepts. A few following sessions for introducing specific virus categories (enteroviruses, noroviruses, hepatitis viruses) may be represented in other courses; however, the contents is intentionally designed to address the specific roles of viruses pertaining to food science such as mechanisms under which viruses bind to food and persist in environment, virus transmission from water, role of food workers, isolation of viruses from complex environmental matrices, downstream detection and quantification methods, resistance of viruses to chemical disinfectants, and prevention strategies. Below, some UF courses with the concepts of virology have been discussed and are compared with the proposed course.

The **Virology** (MCB 4503/5505) is an introductory course to general virology that focuses on topics such as molecular virology, virus replication, vaccines, and gene therapy. The **Advanced Molecular Virology** (GMS 7133) addresses the "molecular analysis of human pathogenic viruses" with more in-depth knowledge of virus replication strategies. Courses such as **Advanced Virology I, II, and III** (GMS 6034/6035/6036) focuses on molecular aspects of specific groups of viruses. **Viral Pathogens of Plants** (PLP 6223C) addresses plant pathology with minimal or no overlap with the **FEV**. The **Biology and Molecular Biology of Avian Viruses** (VME 6421) focuses specifically on influenza viruses, a majority of which are not relevant to food-borne viruses. In the **FEV** course, only a brief two introductory sessions on basic virology will be offered as a refreshment or introduction of the topic for those who do not have a sufficient background in virology. Throughout the semester, the above mentioned will be introduced to the students for those who may be interested in delving deeper in basic concepts of virology, or topics are not covered in the proposed **FEV** course, such as cancer-causing viruses, gene therapy, and vaccines.

UF IFAS
UNIVERSITY of FLORIDA

Course Syllabus

FOOD AND ENVIRONMENTAL VIROLOGY

FOS6xxx

Fall semester 2019

Instructor	Naim Montazeri, Ph.D. Assistant Professor
Department	Food Science and Human Nutrition (FSHN)
Institution	University of Florida
Office Phone	(352) 294-3756
Email	nmontazeri@ufl.edu
Office location	572 Newell Drive, FSHN Bldg, Room 341A
Office hours	MW, 3-4 p.m. (by appointment only)
Announcements	Through Canvas
Eligibility	Graduate students
Prerequisite (either)	MCB2000/L, MCB3020/L, FOS4222, MCB4503/5505, or permission of the instructor
Class location	TBA
Class hours	MW, 1:55-2:45 p.m. (period 7)
Credits	2

COURSE DESCRIPTION

Food virology is an emerging topic in the field of microbial food safety. This course explores the role of pathogenic viruses in public health; their environmental transmission to human; isolation and detection methods; and prevention and control strategies. Through this course, students can develop a competency framework within their discipline.

COURSE GOALS

By the end of this course the students will be able to:

1. Recognize important food-borne and water-borne pathogenic viruses and distinguish the occurrence of viral infections from a global perspective while illustrating the incidences of the viral infections in low-income vs. high-income countries, or in confined settings such as health-care facilities, restaurants, food processing plants, farms, and aquaculture facilities
2. Critically relate and illustrate specific molecular mechanisms under which viruses persist in the environment, transfer to food and/or contact surfaces, and the evolutionary pathways contributing to the emergence of new and potentially more virulent strains
3. Explain methods for the isolation, purification, and detection of viruses in environmental

samples including their advantages and disadvantages, and rationally determine the appropriate methodologies based on the downstream applications

4. Assess and critically analyze potential routes of contamination of food, water, and contact surfaces with food-borne and water-borne viruses, and logically recommend proper control and prevention strategies in accordance with each specific route such as food handlers, wastewater, severe weather conditions, floods, and runoff waters.

COURSE STRUCTURE

This is an in-class course and will be delivered through lectures using slides and videos. Further reading materials such as book chapters will be provided for a better understanding of the core concepts. All the further reading materials will be included in the exams. All graduate and undergraduate students will complete and turn in two assignments (each 2-page long) on topics selected by the instructor. The mid-term exams (50 min) and final exam (90 min) will be closed-book.

Graduate students will discuss a peer-reviewed article of a relevant topic, selected by the help of the instructor, and deliver through a 20-min oral presentation. In-class presentations will be offered using PowerPoint slide sets. The slide sets must be submitted to the instructor by 5 p.m. of the Monday before the date of presentation. Students are expected to communicate with the instructor in advance to ensure the outlines and format of their presentation. The slide sets will be uploaded to Canvas and used as course material for the exams. Additional reading materials including published peer-reviewed articles will be provided by the instructor only for graduate students.

ONLINE COURSE EVALUATION

Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at https://evaluations.ufl.edu. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at https://evaluations.ufl.edu/results/.

REQUIRED READING MATERIAL

- Further readings materials: mainly book chapters
- Selected peer-reviewed articles, including but not limited to:

- Santiana et al. 2018. Vesicle-cloaked virus clusters are optimal units for inter-organismal viral transmission. *Cell Host Microbe,* 24(2): 208-220.
- Chmielewski and Swayne. 2011. Avian influenza: public health and food safety concerns. *Annu Rev Food Sci Technol.* 2:37-57.
- Torres-Barceló et al. 2016. Evolutionary Rationale for Phages as Complements of Antibiotics. *Trends Microbiol.* 24(4): 249-256.

- Wigginton and Kon. 2012. Virus disinfection mechanisms: the role of virus composition, structure, and function. *Curr Opin Virol.* 2: 84-89.
- Graaf et al. 2016. Human norovirus transmission and evolution in a changing world. *Nat Rev Microbiol.* 14: 421-433.

RECOMMENDED READING MATERIALS

- Cook N. 2013. *Viruses in Food and Water - Risks, Surveillance and Control.* Woodhead Publishing, England
- Koopmans M. et al. 2008. *Food-Borne Viruses - Progress and Challenges.* American Society for Microbiology Press, Washington, DC, USA
- Knipe D. M. & Howley P. M. 2007. *Fields Virology.* 5th Edition. Lippincott Williams & Wilkins. Philadelphia, PA, USA
- Carter J. & Saunders V. 2013. *Virology: Principles & Applications.* 2nd Edition. John Wiley & Sons Ltd. England
- Peer-reviewed articles published in prestigious journals such as the *Journal of Virology, Food and Environmental Virology, Food and Environmental Microbiology,* and *Journal of Food Protection*
- University of Florida libraries and online sources such as e-books, ILL, and Knovel App.
- Other reliable online sources such as *This Week In Virology,* by Dr. V. Racaniello, url: http://www.microbe.tv/

COURSE WEBSITE

The course is available via through the UF e - learning website (Canvas); go to http://elearning.ufl.edu/ and click on the Canvas Login button. It requires Gator Link username/password. The course site will be used to course relevant announcements, reading, lecture materials, links, assignments, etc. It is recommended to adjust the setting for announcement alerts. FAQs: http://elearning.ufl.edu/e-learning-basics/uf-e-learning-faqs/; Tutorials: http://elearning.ufl.edu/e-learning-basics/uf-e-learning-tutorials/

ATTENDANCE AND MAKE-UP POLICY

Excused absences must be consistent with university policies in the Graduate Catalog (http://gradcatalog.ufl.edu/content.php?catoid=10&navoid=2020#attendance) and require appropriate documentation. Additional information can be found here: https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx

GRADING

There is a total of 1,000 points available throughout the semester (table below). Grades are not curved and not negotiable.

Mid-term exam 1	200
Mid-term exam 2	200
Assignment 1	50
Assignment 2	50
Presentation	100
Final exam	400
TOTAL	**1,000**

FINAL GRADE SCALE

Based on the total of 1,000 points.

A = 934-1,000	A- = 900-933	B+ = 867-899	B = 834-866	B- = 800-833
C+ = 767-799	C = 734-766	C- = 700-733	D+ =667-699	D = 634-666
D- = 600-633	E = ≤599			

For further information on UF's Grading Policy, consult:
https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx

SOFTWARE USE

All faculty, staff and students of the university are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against university policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.

ACADEMIC HONESTY

As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge: "*We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.*" You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida, the following pledge is either required or implied: *"On my honor, I have neither given nor received unauthorized aid in doing this assignment."*

It is assumed that you will complete all work independently in each course unless the instructor provides explicit permission for you to collaborate on course tasks (e.g. assignments, peer reviews, activity log, etc.). Furthermore, as part of your obligation to uphold the Honor Code, you should report any condition that facilitates academic misconduct to appropriate personnel. It is your individual responsibility to know and comply with all university policies and procedures regarding academic

integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For more information regarding the Student Conduct & Honor Code, please see: https://sccr.dso.ufl.edu/students/student-conduct-code/.

STUDENT PRIVACY

There are federal laws protecting your privacy with regards to grades earned in courses and on individual assignments. For more information, please see: http://registrar.ufl.edu/catalog0910/policies/regulationferpa.html.

STUDENTS WITH DISABILITIES

Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, www.dso.ufl.edu/drc/) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

CAMPUS HELPING RESOURCES

Students experiencing crises or personal problems that interfere with their general wellbeing are encouraged to utilize the university's counseling resources. The Counseling & Wellness Center provides confidential counseling services at no cost for currently enrolled students. Resources are available on campus for students having personal problems or lacking clear career or academic goals, which interfere with their academic performance:

- U Matter, We Care: If you or a friend is in distress, please contact umatter@ufl.edu or 352-392-1575 so that a team member can reach out to the student.
- Counseling and Wellness Center: http://www.counseling.ufl.edu/cwc, and 352-392-1575.
- University Police Department: 352-392-1111 or 9-1-1 for emergencies. http://www.police.ufl.edu/.
- Sexual Assault Recovery Services (SARS): Student Health Care Center, 352-392-1161.
- E-learning technical support, 352-392-4357 (select option 2) or e-mail to Learning-support@ufl.edu. https://lss.at.ufl.edu/help.shtml.
- Career Resource Center, Reitz Union, 392-1601. Career assistance and counseling. https://www.crc.ufl.edu/.
- Library Support, http://cms.uflib.ufl.edu/ask. Various ways to receive assistance with respect to using the libraries or finding resources.
- Teaching Center, Broward Hall, 392-2010 or 392-6420. General study skills and tutoring. https://teachingcenter.ufl.edu/.

- Writing Studio, 302 Tigert Hall, 846-1138. Help brainstorming, formatting, and writing papers. https://writing.ufl.edu/writing-studio/.
- Student Complaints Campus: https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf.
- On-Line Students Complaints: http://www.distance.ufl.edu/student-complaint-process.

COMPLAINTS AND CONFLICT RESOLUTION

Policies and services at the University of Florida can be found at https://dso.ufl.edu/areas_services/ for residential and at http://distance.ufl.edu/student-complaint-process/ for online courses.

OTHER INFORMATION

Lecture material and information are the property of the University of Florida and the course instructor and may not be used for any commercial purpose. Students found in violation may be subject to disciplinary action under the University's Student Conduct Code. Only students formally registered for the course are permitted to attend lectures and take quizzes/tests.

Food and Environmental Virology

Class Schedule (subject to change)

FOS6xxx

Week	Da	Date	Topic area/activity	
1	F	Aug 23	Pre-assessment and introduction	
	W	Aug 28	Basic virology - I	
2	F	Aug 30	Basic virology - II	
	W	Sep 4	Food-borne viruses and global health I	
3	F	Sep 6	Food-borne viruses and global health II	
	W	Sep 11	Hepatitis A & E	
4	F	Sep 13	Human norovirus	
	W	Sep 18	Enteroviruses	
5	F	Sep 20	Review for the exam 1	
	W	Sep 25	**Exam 1**	
6	F	Sep 27	Isolation and purification of viruses	
	W	Oct 2	Detection and quantification of viruses	
7	F	Oct 4	Cell culture systems	
	W	Oct 9	Utilization of surrogates	Assignment 1 due
8	F	Oct 11	Bacteriophages	Course evaluation
	W	Oct 16	Virus-bacteria interaction	
9	F	Oct 18	**Peer-review article discussion**	
	W	Oct 23	Review for the exam 2	
10	F	Oct 25	**Exam 2**	
	W	Oct 30	Viruses persistence in water and sediment	
11	F	Nov 1	Viral presence in sewage (wastewater)	
	W	Nov 6	Viral contamination by food handlers	
12	F	Nov 8	Food-borne viruses in meat and seafood	
	W	Nov 13	Food-borne viruses in fresh produce	Assignment 2 due
13	F	Nov 15	Virus inactivation – processing technologies	
	W	Nov 20	Virus inactivation - surface decontamination	
14	F	Nov 22	**No class (Thanksgiving holiday)**	
	W	Nov 27	**Peer-review article discussion**	
15	F	Nov 29	Prions	
	W	Dec 4	Review for the final exam	UF course evaluation
16	F	Dec 6	**No class (reading days)**	
	W	Dec 11	**Final exam**	

(2)

Cover Sheet: Request 13539

WIS6XXX Biodiversity

Info

Process	Course|New|Grad
Status	Pending at CALS - College of Agricultural and Life Sciences
Submitter	Sarah Ernest skmorgane@ufl.edu
Created	1/25/2019 12:07:30 PM
Updated	1/31/2019 11:00:24 AM
Description of request	Add course on Biodiversity that I have been teaching for the past 3 years to the course catalog

Actions

Step	Status	Group	User	Comment	Updated
Department	Approved	CALS - Wildlife Ecology and Conservation 514947000	Eric Hellgren	Comprehensive course on cross-cutting topic; has been taught 3 times previously. ECH	1/31/2019
Syllabus_Biodiversity.docx uccconsult_Biology_for WEC 6XXX courses_Biodiversity and Data Carpentry_January 2019.pdf					1/25/2019 1/28/2019
College	Pending	CALS - College of Agricultural and Life Sciences			1/31/2019
No document changes					
Graduate Curriculum Committee					
No document changes					
University Curriculum Committee Notified					
No document changes					
Statewide Course Numbering System					
No document changes					
Graduate School Notified					
No document changes					
Office of the Registrar					
No document changes					
College Notified					
No document changes					

Course|New for request 13539

Info

Request: WIS6XXX Biodiversity
Description of request: Add course on Biodiversity that I have been teaching for the past 3 years to the course catalog
Submitter: Sarah Ernest skmorgane@ufl.edu
Created: 1/25/2019 11:02:34 AM
Form version: 1

Responses

Recommended Prefix WIS
Course Level 6
Number XXX
Category of Instruction Joint (Ugrad/Grad)
Lab Code None
Course Title Biodiversity
Transcript Title Biodiversity
Degree Type Graduate

Delivery Method(s) On-Campus
Co-Listing Yes
Co-Listing Explanation This is a graduate course that I allow advanced undergraduates to take with instructor approval. This is designed to give undergraduates who are interested in pursuing advanced degrees some experience with the expectations and material of a graduate course.
Effective Term Fall
Effective Year 2020
Rotating Topic? No
Repeatable Credit? No

Amount of Credit 3
If variable, # min 0

S/U Only? No
Contact Type Regularly Scheduled
Weekly Contact Hours 3
Course Description Patterns of biodiversity emerge from a combination of ecological and evolutionary processes operating across many scales of space and time. This course examines the concept of biodiversity and the processes that generate important patterns of biodiversity in ecology.

Prerequisites None
Co-requisites None
Rationale and Placement in Curriculum The study of biodiversity is emerging as a pervasive topic of research for many graduate students studying ecology and evolution, yet discussion of the important processes and patterns related to biodiversity are scattered across a number of different courses in a variety of different academic departments and colleges. The goal of this course is to create a course that lets students get a more synthetic perspective of the current state of biodiversity research. This course also serves to help students better understand what other courses they need for their research to gain deeper understanding in a particular set of patterns or processes.
Course Objectives • Define the dimensions of biodiversity through discussion and reading the primary literature
- Discuss patterns of biodiversity from the literature and how they relate to ecological processes
- Use current literature to assess current gaps in our scientific understanding of biodiversity
- Design research questions to gain experience with addressing and communicating gaps in scientific knowledge
- Design a presentation to communicate to an audience of broad backgrounds

Course Textbook(s) and/or Other Assigned Reading All readings are from the primary scientific literature and students will read over 30 papers over the semester. Specific examples of papers students will read and discuss in this class include:
* Disentangling the Drivers of Beta Diversity Along Latitudinal and Elevational Gradients (http://science.sciencemag.org/content/333/6050/1755)
* Rethinking Community Assembly through the Lens of Coexistence Theory (https://www.annualreviews.org/doi/10.1146/annurev-ecolsys-110411-160411)
* Stability of Ecological Communities and the Architecture of Mutualistic and Trophic Networks (http://science.sciencemag.org/content/329/5993/853)
* The metacommunity concept: a framework for multi-scale community ecology (https://onlinelibrary.wiley.com/doi/full/10.1111/j.1461-0248.2004.00608.x)
* Opposing mechanisms drive richness patterns of core and transient bird species (https://www.jstor.org/stable/10.1086/669903?seq=1#page_scan_tab_contents)
* Biogeographic regions and events of isolation and diversification of the endemic biota of the tropical Andes (https://www.pnas.org/content/115/31/7985)
Weekly Schedule of Topics Class 1: What does the word biodiversity mean to you?
Class 2: Taxonomic Alpha, Beta, Gamma Diversity - Concepts
Class 3: Taxonomic Alpha, Beta, Gamma Diversity - Practice
Class 4: Phylogenetic and functional diversity - Concepts
Class 5: Phylogenetic and functional diversity - Practice
Class 6: Assembly Mechanisms - Niches and Biotic and Environmental Filters
Class 7: Assembly Mechanisms - The role of Stochasticity and History
Class 8: Patterns in Taxonomic, Phylogenetic, and Functional Diversity
Class 9: Biodiversity through time
Class 10: Species Networks
Class 11: Biodiversity Ecosystem Function
Class 12: Patterns of Abundance
Class 13: Regional Assembly - Dispersal
Class 14: Regional Assembly - Environmental Heterogeneity
Class 15: Habitat Fragmentation patterns
Class 16: Local-Regional Diversity Relationships
Class 17: Species-Area Relationships
Class 18: Core-Transient Framework
Class 19: Group Project Day
Class 20: Biogeographic Processes: Biogeographic Regions
Class 21: Biogeographic Processes: Evolution
Class 22: Hotspots and Endemism
Class 23: Latitidinal Gradient
Class 24: Large-scale Patterns of Phylogenetic, Functional, and Species Diversity
Class 25: Extinctions
Class 26: Group Project Day
Class 27: Group Project Day
Class 28: Group Presentations
Class 29: What have we learned? Wrapping up the Semester
Links and Policies Attendance Policy: Life is complicated and sometimes unpredictable. Grading (see below) is structured so that students may have up to 2 excused absences without impacts on grades. Excused absences must be consistent with university policies in the Graduate Catalog (http://gradcatalog.ufl.edu/content.php?catoid=10&navoid=2020#attendance) and require appropriate documentation. Additional information can be found here: https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx .
Additional missed discussions can be made up by providing written answers to the questions assigned for the readings for the day(s) missed.

Class Conduct: Because this course is discussion-based, an effective learning environment is critically dependent on all students feeling safe and supported in the classroom so that everyone feels comfortable engaging in discussion. I will do my best to foster an open and positive environment for all students but to achieve this I need students to engage in discussions in a constructive and positive manner and listen to other points of view with an open-mind. It is okay to disagree with me or your classmates, and discussions on differing points of view are enthusiastically encouraged, but must be done with empathy for the other people in the classroom. Sometimes we make mistakes during discussion because we did not think sufficiently about our word choice and that is okay. When this happens, students are expected to apologize sincerely to the affected person.

University Policy on Accommodating Students with Disabilities
Students requesting accommodation for disabilities must first register with the Dean of Students Office (http://www.dso.ufl.edu/drc/). The Dean of Students Office will provide documentation to the student who must then provide this documentation to the instructor when requesting accommodation. You must submit this documentation prior to submitting assignments or taking the quizzes or exams. Accommodations are not retroactive, therefore, students should contact the office as soon as possible in the term for which they are seeking accommodations.

Course Evaluation
Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at https://evaluations.ufl.edu/evals. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at https://evaluations.ufl.edu/results/.

University Policy on Academic Misconduct
Academic honesty and integrity are fundamental values of the University community. Students should be sure that they understand the UF Student Honor Code at http://www.dso.ufl.edu/students.php.

Netiquette and Communication Courtesy
All members of the class are expected to follow rules of common courtesy in all email messages, threaded discussions and chats.

CAMPUS RESOURCES:
Health and Wellness
U Matter, We Care:
If you or a friend is in distress, please contact umatter@ufl.edu or 352 392-1575 so that a team member can reach out to the student.

Counseling and Wellness Center: http://www.counseling.ufl.edu/cwc, and 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.

Sexual Assault Recovery Services (SARS)
Student Health Care Center, 392-1161.

University Police Department at 392-1111 (or 9-1-1 for emergencies), or http://www.police.ufl.edu/.
Academic Resources
E-learning technical support, 352-392-4357 (select option 2) or e-mail to Learning-support@ufl.edu. https://lss.at.ufl.edu/help.shtml.

Career Resource Center, Reitz Union, 392-1601. Career assistance and counseling. https://www.crc.ufl.edu/.

Library Support, http://cms.uflib.ufl.edu/ask. Various ways to receive assistance with respect to using the libraries or finding resources.

Teaching Center, Broward Hall, 392-2010 or 392-6420. General study skills and tutoring. https://teachingcenter.ufl.edu/.

Writing Studio, 302 Tigert Hall, 846-1138. Help brainstorming, formatting, and writing papers. https://writing.ufl.edu/writing-studio/.

Student Complaints Campus: https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf.

On-Line Students Complaints: http://www.distance.ufl.edu/student-complaint-process.

Grading Scheme Course Grading
60% of grade will be based on a class project and presentation (330 points), 40% will be based on class participation in discussion* (220 points, 10 points/class day).

Percent	Grade
90.0 - 100.0	A
87.0 - 89.9	A-
84.0 - 86.9	B+
81.0 - 83.9	B
78.0 - 80.9	B-
75.0 - 79.9	C+
72.0 – 74.9	C
69.0 - 71.9	C-
66.0 - 68.9	D+
63.0 - 65.9	D
60.0 - 62.9	D-
0 - 59.9	E

Instructor(s) Sarah Kelson Morgan Ernest

UF UNIVERSITY of FLORIDA

UCC: External Consultations

External Consultation Results (departments with potential overlap or interest in proposed course, if any)

Department	Name and Title
Biology	Marta L. Wayne, Professor & Chair
Phone Number	**E-mail**
352-392-9925	mlwayne@ufl.edu

Comments

These are great courses taught by outstanding faculty. Although there is some overlap between material of these courses and some that we teach, there is not sufficient overlap to cause any concern.

Department	Name and Title
Phone Number	**E-mail**

Comments

Department	Name and Title
Phone Number	**E-mail**

Comments

WIS 4934/6934 - Biodiversity

Linking biodiversity patterns and processes across scales of space and time
T 1:55-2:45 & Th 1:55-3:50, MCCB G108
Fall 2018, 3 credits

Instructor: Dr. Morgan Ernest
Office Location: Building 150, Room 2
Phone: 352-294-2082
Email (preferred mode of contact): skmorgane@ufl.edu
Website: skmorgane.github.io/biodiversity-course
Office Hour: Tuesday 3-4 or by appointment
Prerequisites: None for graduate students; Undergraduates must obtain instructor approval to register

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Description/Organization

Biodiversity emerges from a combination of ecological and evolutionary processes operating across many scales of space and time. This course examines the concept of biodiversity and the processes that generate important patterns of biodiversity in ecology.

Course Objectives

- Define the dimensions of biodiversity through discussion and reading the primary literature
- Discuss patterns of biodiversity from the literature and how they relate to ecological processes
- Use current literature to assess current gaps in our scientific understanding of biodiversity
- Design research questions to gain experience with addressing and communicating gaps in scientific knowledge
- Design a presentation to communicate to an audience of broad backgrounds

Text and Required Supplies

- There is not a required or recommended text book for this class
- Readings for this class come from journal articles available electronically through UF journal subscriptions. Links to papers are made available through the course website (skmorgane.github.io/biodiversity-course).
- Laptops: On specific days (noted on the course schedule) laptops or tablets will be required to participate in literature search and basic computational activities. If you do

not have a laptop or tablet, please let the instructor know and access to one can be arranged.

- Software: We will be using R (a freely available statistical programming environment) to learn about quantitative approaches to studying biodiversity patterns. R is required. It is also recommending that student load RStudio – a freely available integrated programming environment – which makes working with R more user friendly.

COURSE POLICIES

Attendance Policy: Life is complicated and sometimes unpredictable. Grading (see below) is structured so that students may have up to 2 excused absences without impacts on grades. Excused absences must be consistent with university policies in the Graduate Catalog (http://gradcatalog.ufl.edu/content.php?catoid=10&navoid=2020#attendance) and require appropriate documentation. Additional information can be found here: https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx .

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GENERAL COURSE STRUCTURE AND EXPECTATIONS

This course is designed to provide advanced training for graduate students in a specialized area of ecology. This course is a mixture of lecture, class discussion of primary literature, hands-on experience through class activities, and a major project. While there is some lecturing, class participation, intellectual engagement with topics, and discussion participation are the main ways students will learn in this class. The first hour of Tuesdays and Thursdays are devoted to lecture and class discussions. You are expected to come prepared to discuss the assigned papers. The second hour on Thursdays are devoted to either class activities or working on group projects.

Course Grading

60% of grade will be based on a class project and presentation (330 points), 40% will be based on class participation in discussion* (220 points, 10 points/class day).

*Students uncomfortable with the expectation of participating in a graduate discussion should talk to me about a written alternative.

Percent	Grade
90.0 - 100.0	A
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84.0 - 86.9	B+
81.0 - 83.9	B
78.0 - 80.9	B-
75.0 - 79.9	C+
72.0 – 74.9	C
69.0 - 71.9	C-
66.0 - 68.9	D+
63.0 - 65.9	D
60.0 - 62.9	D-
0 - 59.9	E

UF Policies

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Teaching Center, Broward Hall, 392-2010 or 392-6420. General study skills and tutoring. https://teachingcenter.ufl.edu/.

Writing Studio, 302 Tigert Hall, 846-1138. Help brainstorming, formatting, and writing papers. https://writing.ufl.edu/writing-studio/.

Student Complaints Campus: https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf.

On-Line Students Complaints: http://www.distance.ufl.edu/student-complaint-process.

CLASS SCHEDULE

Weeks 1-3: Thinking about what biodiversity means/is

1. *August 23 Introductions. What does the word biodiversity mean to you?*
2. *August 28 Taxonomic Alpha, Beta, Gamma Diversity - Concepts*
   - Reading: Disentangling the Drivers of Beta Diversity Along Latitudinal and Elevational Gradients
     - Questions
3. *August 30 Taxonomic Alpha, Beta, Gamma Diversity - Practice*
   - Class Activity: Exploring taxonomic diversity. Bring computers.
4. *September 4 Phylogenetic and functional diversity - Concepts*
   - Reading: Functional diversity (FD), species richness and community composition
   - Questions
5. *September 6 Phylogenetic and functional diversity - Practice*
   - Class Activity: Exploring phylogenetic and functional diversity. Bring computers.

Weeks 4-7: Local-scale Biodiversity Patterns & Processes

6. *September 11 Assembly Mechanisms - Niches and Biotic and Environmental Filters*
   - Reading: Rethinking Community Assembly through the Lens of Coexistence Theory
   - Questions
7. *September 13 Assembly Mechanisms - The role of Stochasticity and History*
   - Reading: Drought mediates the importance of stochastic community assembly
   - Questions
   - Class Activity: Create your elevator pitch
8. *September 18 Patterns in Taxonomic, Phylogenetic, and Functional Diversity*
   - Reading: Phylogenetic Overdispersion in Floridian Oak Communities
   - Reading: Spatial mismatch and congruence between taxonomic,phylogenetic and functional diversity
   - Questions
9. *September 20 Biodiversity through time*

Debate-style discussion: There will be two groups and the papers you read for this class differ depending on what group you were assigned to. Everyone needs to read: Assemblage Time Series Reveal Biodiversity Change but Not Systematic Loss

- ** Group 1 **
  - Reading: Species-level and community-level responses to disturbance: a cross-community analysis
  - Reading: Recent Trends in Local-Scale Marine Biodiversity Reflect Community Structure and Human Impacts
- ** Group 2 **
  - Reading: Estimating local biodiversity change: a critique of papers claiming no net loss of local diversity
  - Reading: Biodiversity change is uncoupled from species richness trends: consequences for conservation and monitoring
- Group Projects: Sharing Interests

10. September 25 Species Networks

- Readings: Stability of Ecological Communities and the Architecture of Mutualistic and Trophic Networks
- Questions

11. September 27 Biodiversity Ecosystem Function

- Readings: Effects of biodiversity on the functioning of trophic groups and ecosystems
- Readings: Emerging horizons in biodiversity and ecosystem functioning research
- Readings: Plant Species Richness and Ecosystem Multifunctionality in Global Drylands
- Questions

12. October 2 Patterns of Abundance

- Readings: EXCERPTS from Niche Apportionment and Species Coexistence Chapter will be emailed to group.
- Readings: Hyperdominance in the Amazonian Tree Flora
- Questions

Weeks 7-10 Regional-Scale Diversity Patterns & Processes

13. October 4 Regional Assembly - Dispersal

- Reading: The metacommunity concept: a framework for multi-scale community ecology
- Questions
- Group Project Day. Start talking with each other about big challenges or important unanswered question that you all are interested in.

14. October 9 Regional Assembly - Environmental Heterogeneity

- Reading: The "Frankenpaper" - emailed to the class listserv
- Questions
- Class Activity: Group Projects

15. October 11 Habitat Fragmentation patterns

- Reading: How fragmentation and corridors affect wind dynamics and seed dispersal in open habitats
- Reading: Habitat fragmentation and genetic variability of tetrapod populations
- Questions
- Class Activity: Group Projects

16. October 16 Local-Regional Diversity Relationships

- Reading: Community diversity: relative roles of local and regional processes

- Reading: The Combined Influence of the Local Environment and Regional Enrichment on Bird Species Richness.
- Questions

17. October 18 Species Area Relationships

- Reading: species-area relationship frankenpaper (emailed to group)
- Reading: Analysis of an evolutionary species–area relationship
- Questions
- Class Activity: Group Projects

18. October 23 Core-Transient Framework

- Reading: Explaining the excess of rare species in natural species abundance distributions
- Reading: Opposing mechanisms drive richness patterns of core and transient bird species
- Questions

19. October 25 Group Project Day

Weeks 11-13 Global Biodiversity Patterns and Processes

21. October 30: Biogeographic Processes: Biogeographic Regions

-
  - Readings: An update on Wallace's zoogeographic regions of the World
- Questions

22. November 1. Biogeographic Processes: Evolution

Readings: Biogeographic regions and events of isolation and diversification of the endemic biota of the tropical Andes

- Questions

23. November 6 Hotspots and Endemism

- Readings: Global hotspots of species richness are not congruent with endemism or threat
- Readings: The Influence of Late Quaternary Climate-Change Velocity on Species Endemism
- Questions

24. November 8 Latitudinal Gradient.

Read the paper you were assigned in class - read the abstracts of the other 3. For this assignment, be able to explain the processes generating the latudinal gradient of diversity that your assigned paper examined. You will break into small groups first to make sure everyone understands their mechanisms, and then each group will explain their mechanisms to the rest of the group.

- Readings: Faster Speciation and Reduced Extinction in the Tropics Contribute to the Mammalian Latitudinal Diversity Gradient
- Readings: Plant diversity increases with the strength of negative density dependence at the global scale
- Readings: Global Biodiversity, Biochemical Kinetics, and the Energetic Equivalence Rule
- Readings: A latitudinal gradient in planktonic marine bacteria
- Group Projects

25. November 13 Large-scale Patterns of Phylogenetic, Functional, and Species Diversity

- Reading: Understanding global patterns of mammalian functional and phylogenetic diversity
- Questions

26. November 15 Extinctions

- Reading: Pleistocene megafaunal collapse, novel plant communities, and enhanced fire regimes in North America
- Reading–you only need to read the abstract! Extinctions and the loss of ecological function in island bird communities
- Questions
- Group Project time

Weeks 14-15: Group Presentations and Wrap-Up

27. November 20

- No readings: Group Projects

28. November 22

- No readings Group Projects

29. November 29 Group Presentations!

30. December 4 What have we learned? Wrapping up the Semester

- Readings: Look over the questions and topics on the schedule and reflect on what we have covered over the past semester
    - What themes or processes came up multiple times this semester?
    - What role does spatial scale play in our understanding of biodiversity?
    - When you entered the class, what dimension of biodiversity did you focus on? How did you assume it was related to other aspects of biodiversity? Did the class strengthen or change they way you think about that?

(3)

Cover Sheet: Request 13538

WIS6XXX Data Carpentry for Biologists

Info

Process	Course|New|Grad
Status	Pending at CALS - College of Agricultural and Life Sciences
Submitter	Ethan White ethanwhite@ufl.edu
Created	1/25/2019 12:02:27 PM
Updated	1/31/2019 10:59:06 AM
Description of request	Add the course on data management, manipulation, and analysis in R that I have been teaching for the last 4 years to the catalog.

Actions

Step	Status	Group	User	Comment	Updated
Department	Approved	CALS - Wildlife Ecology and Conservation 514947000	Eric Hellgren	Has been taught 3 times previously. Large (30-35 students) graduate course with important interdisciplinary value. ECH	1/31/2019
dcsem_syllabus.pdf uccconsult_Biology_for WEC 6XXX courses_Biodiversity and Data Carpentry_January 2019.pdf					1/25/2019 1/28/2019
College	Pending	CALS - College of Agricultural and Life Sciences			1/31/2019
No document changes					
Graduate Curriculum Committee					
No document changes					
University Curriculum Committee Notified					
No document changes					
Statewide Course Numbering System					
No document changes					
Graduate School Notified					
No document changes					
Office of the Registrar					
No document changes					
College Notified					
No document changes					

Course|New for request 13538

Info

Request: WIS6XXX Data Carpentry for Biologists
Description of request: Add the course on data management, manipulation, and analysis in R that I have been teaching for the last 4 years to the catalog.
Submitter: Ethan White ethanwhite@ufl.edu
Created: 1/25/2019 10:53:09 AM
Form version: 1

Responses

Recommended Prefix WIS
Course Level 6
Number XXX
Category of Instruction Intermediate
Lab Code None
Course Title Data Carpentry for Biologists
Transcript Title Data Carpentry
Degree Type Graduate

Delivery Method(s) On-Campus
Co-Listing No
Co-Listing Explanation This course is not co-listed.
Effective Term Fall
Effective Year 2019
Rotating Topic? No
Repeatable Credit? No

Amount of Credit 3

S/U Only? No
Contact Type Regularly Scheduled
Weekly Contact Hours 3
Course Description An introduction to data management, manipulation, and analysis, with an emphasis on biological problems. Class consists of short introductions to new concepts followed by hands on computing exercises using R and SQLite, but the concepts apply to programming languages and databases more generally. No background in computing is required.
Prerequisites None.
Co-requisites None.
Rationale and Placement in Curriculum Computers are increasingly essential to the study of all aspects of biology. Data management skills are needed for entering data without errors, storing it in a usable way, and extracting key aspects of the data for analysis. Basic programming is required for everything from accessing and managing data, to statistical analysis, to modeling. Dr. White was hired as part of the preeminence initiative in part to teach this material to biologists in CALS and across campus.
Course Objectives * Create well structured databases
* Extract information from databases
* Write simple computer programs in R
* Automate data analysis
* Apply these tools to address biological questions
* Apply general data management and analysis concepts to other programming languages and database management systems

Course Textbook(s) and/or Other Assigned Reading No text books is required. A list of readings is provided on the course website:
http://datacarpentry.org/semester-biology/schedule/
Weekly Schedule of Topics Week Language Lesson
1 SQL Data Entry and Storage

2	R	Introduction to R and RStudio
3	R	Working with Data
4	R	Data Visualization
5	R	Working with Spatial Data
6	R	Computational Projects
7	R	Programming Fundamentals 1
8	R	Programming Fundamentals 2
9	R	Putting It All Together
10	R	Version Control
11	R	Getting Data
12	R	Knitr
13	SQL	Working with Databases
14	R	tidyr
15	R	Image Processing and Analysis
16	R	Web Applications Using Shiny

Links and Policies The full syllabus for the course is available at: http://datacarpentry.org/semester-biology/syllabus/

Policies and links sections are pasted below:

Course Policies
Attendance Policy

Attendance will not be taken or factor into the grades for this class. However, experience suggests that students who regularly miss class struggle to learn the material.
Quiz/Exam Policy

There are no quizzes or exams in this course.
Attendance policy

Attendance is not required but it is recommended that you attend class as often as possible to get the most out of the course.
Make-up policy

Life happens and therefore there is an automatic grace period of 48 hours for the submission of late assignments with no need to request an extension. However, it is highly recommended that you submit assignments on time when possible because assignments build on one another and it can be hard to catch up if you fall behind. Reasonable requests for longer extensions will also be granted. Assignments turned in after the 48 hour grace period without an extension will be be graded with a 20% penalty.
Assignment policy

Assignments are due Monday night by 11:59 pm Eastern Time. Assignments should be submitted via Canvas. This allows you to be finished with one week's material before starting the next week's material.
Course Technology

Students are required to provide their own laptops and to install free and open source software on those laptops (see Setup for installation instructions). Support will be provided by the instructor in the installation of required software. If you don't have access to a laptop please contact the instructor and they will do their best to provide you with one.
Materials and Supplies Fees

There are no materials and supplies fees for this course.
UF Policies
University Policy on Accommodating Students with Disabilities

Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565; http://www.dso.ufl.edu/drc/) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

My policy: If you are in my class I want to help learn and will happily work with you to make the learning environment equitable for you and others.
University on Course Evaluations

Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at https://evaluations.ufl.edu. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at https://evaluations.ufl.edu/results/.
University Policy on Academic Misconduct

Academic honesty and integrity are fundamental values of the University community. Students should be sure that they understand the UF Student Honor Code at http://www.dso.ufl.edu/students.php.
Netiquette and Communication Courtesy

All members of the class are expected to follow rules of common courtesy in all email messages, threaded discussions and chats.
University Honesty Policy

UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Honor Code (https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.
Software Use

All faculty, staff, and students of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.
Student Privacy

There are federal laws protecting your privacy with regards to grades earned in courses and on individual assignments. For more information, please see:
http://registrar.ufl.edu/catalog0910/policies/regulationferpa.html
Grading Scheme Grading Policies

Grading for this course is based on 13 equally weighted assignments.

Exercises in assignments will be graded as follows:

Produces the correct answer using the requested approach: 100%
Generally uses the right approach, but a minor mistake results in an incorrect answer: 90%
Attempts to solve the problem and makes some progress using the core concept: 50%
Answer demonstrates a lack of understanding of the core concept: 0%

Grading scale

A 93-100
A- 90-92
B+ 87-89
B 83-86
B- 80-82
C+ 77-79
C 73-76
C- 70-72

D+ 67-69
D 60-66
E <60

UF grading policies for assigning grade points

https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/
Instructor(s) Ethan White

UF UNIVERSITY of FLORIDA

UCC: External Consultations

External Consultation Results (departments with potential overlap or interest in proposed course, if any)

Department	Name and Title
Biology	Marta L. Wayne, Professor & Chair
Phone Number	**E-mail**
352-392-9925	mlwayne@ufl.edu

Comments

These are great courses taught by outstanding faculty. Although there is some overlap between material of these courses and some that we teach, there is not sufficient overlap to cause any concern.

Department	Name and Title
Phone Number	**E-mail**

Comments

Department	Name and Title
Phone Number	**E-mail**

Comments

Syllabus

Course

Data Carpentry for Biologists

WIS 6934, 3 Credits, Fall 2018

Instructor

Dr. Ethan White

Office: Room 1 in Building 150 (just north of Newins-Zeigler)

Email (best way to contact us): ethanwhite@ufl.edu

Phone: 352-294-2081

Location

Times

Tuesdays, 12:50-1:40

Fridays, 11:45-1:40

Office Hours

Times: Monday 2-3:15

Location: Newins-Zeigler 203

Or by appointment. *Note: my schedule gets very busy during the semester so please try to schedule appointments as far in advance as possible. In general it will be very difficult to set up appointments less than 24 hours in advance.*

Teaching Assistant

Andrew Marx

Email: andrewjmarx@ufl.edu

Website

The syllabus and other relevant class information and resources will be posted at http://localhost:4000. Changes to the schedule will be posted to this site so please try to check it periodically for updates.

Course Communications

Email: ethanwhite@ufl.edu

Required Texts

There is no required text book for this class.

All needed material is openly available on the course website. If you are interested in additional reading on the topics we are covering I highly recommend R for Data Science, which is freely available on the web.

Course Description

Computers are increasingly essential to the study of all aspects of biology. Data management skills are needed for entering data without errors, storing it in a usable way, and extracting key aspects of the data for analysis. Basic programming is required for everything from accessing and managing data, to statistical analysis, to modeling. This course will provide an introduction to data management, manipulation, and analysis, with an emphasis on biological problems. Class will typically consist of short introductions or question & answer sessions, followed by hands on computing exercises. The course will be

taught using R and SQLite, but the concepts learned will easily apply to all programming languages and database management systems. No background in programming or databases is required.

Prerequisite Knowledge and Skills

Knowledge of basic biology.

Purpose of Course

In this course you will learn all of the fundamental aspects of computer programming that are necessary for conducting biological research. By the end of the course you will be able to use these tools to import data into R, perform analysis on that data, and export the results to graphs, text files, and databases. By learning how to get the computer to do your work for you, you will be able to do more science faster.

Course Objectives and Goals

Students completing this course will be able to:

- Create well structured databases
- Extract information from databases
- Write simple computer programs in R
- Automate data analysis
- Apply these tools to address biological questions
- Apply general data management and analysis concepts to other programming languages and database management systems

How this course relates to the Student Learning Outcomes in Wildlife Ecology and Conservation

This course contributes to the 'Quantitative Skills' and 'Conducting and Analyzing Independent/Original Research' Student Learning Outcomes specified in the Ph.D. and MS in Wildlife Ecology and Conservation Academic Assessment Plans, by providing students the skills and knowledge they need to manage and analyze the data used in research.

Teaching Philosophy

This class is taught using a flipped, learner-centered, approach, because learning to program and work with data requires actively working on computers. Flipped classes work well for all kinds of content, but I think they work particularly well

for computer oriented classes. If you're interested in knowing more take a look at this great info-graphic.

Instructional Methods

As a flipped classroom, students are provided with either reading or video material that they are expected to view/read prior to class. Classes will involve brief refreshers on new concepts followed by working on exercises in class that cover that concept. While students are working on exercises the instructor will actively engage with students to help them understand material they find confusing, explain misunderstandings and help identify mistakes that are preventing students from completing the exercises, and discuss novel applications and alternative approaches to the data analysis challenges students are attempting to solve. For more challenging topics class may start with 20-30 minute demonstrations on the concepts followed by time to work on exercises.

Course Policies

Attendance Policy

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Quiz/Exam Policy

There are no quizzes or exams in this course.

Attendance policy

Attendance is not required but it is recommended that you attend class as often as possible to get the most out of the course.

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Student Privacy

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Grading Policies

Grading for this course is based on 13 equally weighted assignments.

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- Generally uses the right approach, but a minor mistake results in an incorrect answer: 90%
- Attempts to solve the problem and makes some progress using the core concept: 50%
- Answer demonstrates a lack of understanding of the core concept: 0%

Grading scale

- **A 93-100**
- **A- 90-92**
- **B+ 87-89**
- **B 83-86**
- **B- 80-82**
- **C+ 77-79**
- **C 73-76**
- **C- 70-72**
- **D+ 67-69**
- **D 60-66**
- **E <60**

UF grading policies for assigning grade points

https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/

Campus Resources

Health and Wellness

U Matter, We Care: If you or a friend is in distress, please contact umatter@ufl.edu or 352 392-1575 so that a team member can reach out to the student.

Counseling and Wellness Center: http://www.counseling.ufl.edu/cwc, and 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.

Sexual Assault Recovery Services (SARS): Student Health Care Center, 392-1161.

University Police Department: 392-1111 (or 9-1-1 for emergencies), or http://www.police.ufl.edu/.

Academic Resources

E-learning technical support: 352-392-4357 (select option 2) or e-mail to Learning-support@ufl.edu. https://lss.at.ufl.edu/help.shtml.

Career Resource Center: Reitz Union, 392-1601. Career assistance and counseling. https://www.crc.ufl.edu/.

Library Support: http://cms.uflib.ufl.edu/ask. Various ways to receive assistance with respect to using the libraries or finding resources.

Teaching Center: Broward Hall, 392-2010 or 392-6420. General study skills and tutoring. https://teachingcenter.ufl.edu/.

Writing Studio: 302 Tigert Hall, 846-1138. Help brainstorming, formatting, and writing papers. https://writing.ufl.edu/writing-studio/.

Student Complaints Campus: https://www.dso.ufl.edu/documents/UF Complaints policy.pdf.

On-Line Students Complaints: http://www.distance.ufl.edu/student-complaint-process.

Course Schedule

Week	Language	Lesson
1	SQL	Data Entry and Storage
2	R	Introduction to R and RStudio
3	R	Working with Data
4	R	Data Visualization
5	R	Working with Spatial Data
6	R	Computational Projects
7	R	Programming Fundamentals 1
8	R	Programming Fundamentals 2
9	R	Putting It All Together
10	R	Version Control
11	R	Getting Data
12	R	Knitr
13	SQL	Working with Databases
14	R	tidyr
15	R	Image Processing and Analysis
16	R	Web Applications Using Shiny

The detailed course schedule with links to materials is available on the course website at: http://localhost:4000/schedule.

(4)

Cover Sheet: Request 13524

Name change of MCB 6781

Info

Process	Course|Modify|Grad
Status	Pending at CALS - College of Agricultural and Life Sciences
Submitter	Monika Oli moli@ufl.edu
Created	1/15/2019 1:01:29 PM
Updated	1/23/2019 12:22:46 PM
Description of request	Name change of MCB 6781 from Archaea and Biotechnology to Extremophiles

Actions

Step	Status	Group	User	Comment	Updated
Department	Approved	CALS - Microbiology and Cell Science 514910000	Eric Triplett		1/23/2019
No document changes					
College	Pending	CALS - College of Agricultural and Life Sciences			1/23/2019
No document changes					
Graduate Curriculum Committee					
No document changes					
University Curriculum Committee Notified					
No document changes					
Statewide Course Numbering System					
No document changes					
Graduate School Notified					
No document changes					
Office of the Registrar					
No document changes					
College Notified					
No document changes					

Course|Modify for request 13524

Info

Request: Name change of MCB 6781
Description of request: Name change of MCB 6781 from Archaea and Biotechnology to Extremophiles
Submitter: Monika Oli moli@ufl.edu
Created: 1/15/2019 12:56:30 PM
Form version: 1

Responses

Current Prefix MCB
Course Level 6
Number 781
Lab Code None
Course Title Archaea and Biotechnology
Effective Term Fall
Effective Year 2019
Requested Action Other (selecting this option opens additional form fields below)
Change Course Prefix? No

Change Course Level? No

Change Course Number? No

Change Lab Code? No

Change Course Title? Yes
Current Course Title Archaea and Biotechnology
Proposed Course Title Extremophiles
Change Transcript Title? Yes
Current Transcript Title ARCHAEABIOTECHNOLOGY
Proposed Transcript Title (21 char. max) Extremophiles
Change Credit Hours? No

Change Variable Credit? No

Change S/U Only? No

Change Contact Type? No

Change Rotating Topic Designation? No

Change Repeatable Credit? No

Maximum Repeatable Credits 0
Change Course Description? Yes
Current Course Description Learn about the evolution, physiology, and molecular biology of Archaea, including extremophiles. Examine principles of energy production and biosynthesis in aerobic and anaerobic habitats and

explore research that incorporates cutting-edge techniques and biotechnology applications for using archaea to solve real world problems.
Proposed Course Description (50 words max) Students will learn about the evolution, physiology, biochemistry and molecular biology of
extremophiles with emphasis on archaea and their viruses. Principles of energy metabolism at the limits of life will be discussed. Research that incorporates cutting-edge techniques and biotechnology applications for using extremophiles to solve real world problems is highlighted.
Change Prerequisites? No

Change Co-requisites? No

Rationale The course has low enrollment and students are not interested in the topic as conveyed by the title of the class (as per personal communication with students). Changing the name of the course will attract more students to take it.

(5)

Cover Sheet: Request 13576

ALS 3XXX

Info

Process	Course|New|Ugrad/Pro
Status	Pending at CALS - Agricultural and Life Sciences - General 514903000
Submitter	Anna Prizzia aprizzia@ufl.edu
Created	2/4/2019 11:10:12 AM
Updated	2/4/2019 11:10:12 AM
Description of request	I am submitting this course for consideration as a new course.

Actions

Step	Status	Group	User	Comment	Updated
Department	Pending	CALS - Agricultural and Life Sciences - General 514903000			2/4/2019
No document changes					
College					
No document changes					
University Curriculum Committee					
No document changes					
Statewide Course Numbering System					
No document changes					
Office of the Registrar					
No document changes					
Student Academic Support System					
No document changes					
Catalog					
No document changes					
College Notified					
No document changes					

Course|New for request 13576

Info

Request: ALS 3XXX
Description of request: I am submitting this course for consideration as a new course.
Submitter: Anna Prizzia aprizzia@ufl.edu
Created: 2/4/2019 10:42:48 AM
Form version: 1

Responses

Recommended Prefix ALS
Course Level 3
Number XXX
Category of Instruction Intermediate
Lab Code None
Course Title Home and Community Gardening: Collegiate Master Gardener
Transcript Title Home&Comm Gardening
Degree Type Baccalaureate

Delivery Method(s) Online
Co-Listing No
Co-Listing Explanation NA
Effective Term Fall
Effective Year 2019
Rotating Topic? No
Repeatable Credit? No

Amount of Credit 3

S/U Only? No
Contact Type Regularly Scheduled
Weekly Contact Hours 3
Course Description The Florida Master Gardener Program trains UF/IFAS Extension volunteers to provide horticultural education to residents and communities. Students will receive training to become a Master Gardener, and learn, horticulture, Integrated Pest Management, plant pathology, and garden planning. This online class is composed of digital lectures, discussions, and hands-on activities.
Prerequisites BSC 2005 or BSC 2010 OR Permission of Instructor
Co-requisites NA
Rationale and Placement in Curriculum This course is ideal for students interested in home gardening, community gardening, community development, public health, public education, Extension, urban sociology, urban landscape design, and sustainability. After completing this course, students will be qualified to become a Florida Master Gardener. If they wish to pursue this, they must work through the State Master Gardener Office and their County Extension Office within two years, identifying any formal steps to take for certification and contributing 75 volunteer hours and 10 learning hours within the first year of training. Certified Master Gardeners serve their communities by answering gardening questions from local residents, participating in community and school garden projects, supporting youth activities, and more.
Course Objectives • Explain the basic principles of horticulture in Florida, including native species and ecosystem considerations, soil health and management, plant biology and selection, and garden planning and maintenance.
• Critique the possibilities and limitations of Extension and its role in communicating science to the community.
• Discuss agro-ecological principles related to food production, and their role in home and community gardens.
• Apply the principles of integrated pest management and plant pathology in order to make recommendations for pests and disease management in home and community gardens.
• Identify the elements necessary to develop successful home landscapes and community

gardens.

Course Textbook(s) and/or Other Assigned Reading Florida Master Gardener Student Manual. University of Florida Institute of Food and Agricultural Sciences, 2018. ISBN: 978-0-578-21363

Additional readings will include selected scientific papers, such as Extension Community Development: Building Strong, Vibrant Communities, Journal of Extension, October 2014, Volume 52:5
https://www.joe.org/joe/2014october/comm1.php

These additional readings will be used as part of reflection assignments.

Weekly Schedule of Topics Week 1: Welcome, Master Gardener Overview and Orientation
- Readings - Text Chapter 1
- Beaulieu, Lionel and Sam Cordes (2014), Extension Community Development: Building Strong, Vibrant Communities, Journal of Extension, October 2014, Volume 52:5 https://www.joe.org/joe/2014october/comm1.php
- Assignment - Reflection 1 (2 parts) For full credit, be sure to respond to all the questions. Part 1: Discuss your relationship with gardening and plants, and share why you took this class. Some questions to get you started: What interests you about plants and gardening? What are your core/central values and ideas around food production, landscaping, and gardening? What is your experience and history with plants, agriculture, gardening, food preparation, landscaping? What interested you about this class and what do you hope to get out of it?

Part 2: Based on the module, readings in the text, and the article Extension Community Development: Building Strong, Vibrant Communities, do things like community and school gardens play a role in Community Development? As one of the most well-known programs and "faces" of Extension, what role do you feel Master Gardeners play in supporting Extension and Community Development?

Week 2: Florida Friendly Landscaping and Agroecology
- Reading - Text Chapter 2
- Assignment - Experiential Learning Activity 1 – Right Plant, Right Place (see instructions in Announcements)
- Quiz 1

Week 3: Botany
- Reading – Text Chapter 3
- Assignment - Experiential Learning Activity 2 – Plant Parts, Life Cycle, and Processes (see instructions in Announcements)
- Quiz 2

Week 4 – Soils and Nutrients
- Readings – Text Chapter 4
- Evans, Erv & Deanna Osmond (2000) A Gardener's Guide to Protecting Water Quality. NC State PDF. https://content.ces.ncsu.edu/a-gardeners-guide-to-protecting-water-quality
- Assignment – Reflection 2
Think about the publication you just read, and reflect on what you learned. What was new information for you? Do you think protecting water quality is important? Why or why not? Share relevant examples from your experience. How would you apply the ideas in this reading in your current living situation if you had control – eg. apartment complex landscape, home landscape, campus landscape? What advice might you give friends or family about adjustments they could make to help protect water quality?

Week 5 – Entomology
- Reading – Text Chapter 5
- Assignment - Experiential Learning Activity 3 – Bug ID (see instructions in Announcements)
- Quiz 3

Week 6 – Nematology and Integrated Pest Management
- Readings –Text Chapter 6 and 7
- Assignment - Experiential Learning Activity 4 – IPM Remedy (see instructions in Announcements)

- Quiz 4

Week 7 Plant Pathology
- Reading – Text Chapter 8
- Assignment - Experiential Learning Activity 5 – Disease Diagnosis (see instructions in Announcements)
- Quiz 5

Week 8 - Pesticides
- Readings – Text Chapter 9
- Assignment – Reflection 3

Visit the pest control section of you r local hardware store. Identify two products that would be recommended for use in the home landscape to control pests or disease. Read the labels carefully. What did you learn about each of these two chemicals. Are they safe for food products? Can children and pets be exposed to them? What are your thoughts on the research regarding the effectiveness and impacts of these sorts of chemicals? Think back over the past several weeks. What are your thoughts about weed, pest, and disease management in landscapes and gardens and how do these labels change or reaffirm your ideas and attitudes? How do IPM and the use of chemical controls interact? What is the role of Extension in providing recommendations regarding pest, weed and disease management?
- Quiz 6

Week 9 – SPRING BREAK
NO Assignments

Week 10 –Turf, Plant Propagation
- Reading – Text Chapter 10
- Assignment - Experiential Learning Activity 6 – Seeds and Cuttings (see instructions in Announcements)
- Quiz 7

Week 11 – Weeds, Invasive Plants
- Readings – Text Chapter 11
- Raphael K. Didham, Jason M. Tylianakis, Melissa A. Hutchison, Robert M. Ewers and Neil J. Gemmell. Are invasive species the drivers of ecological change? TRENDS in Ecology and Evolution. Vol.20 No.9 September 2005, https://repository.si.edu/bitstream/handle/10088/6904/Didham_Tylianakis_Hutchinson_Ewers_and_Gemmell_2005.pdf

- Assignment – Reflection 4

Discuss your understanding of invasive species, and what you learned from the article. What surprised you? How do you think other ecological impacts relate to their dominance? Have you had any experiences with invasive species? What did you observe? How did it impact you or those who were dealing with it? How can extension help reduce the spread of invasive species?
- Quiz 8

Week 12 – Vegetables, Fruits, and Agroecology Part 2
- Readings – Text Chapter 12&15
- Assignment - Experiential Learning Activity 7 – Seasonality (see instructions in Announcements)
- Quiz 9

Week 13 – Planting and Maintenance
- Reading – Text Chapter 13
- Assignment - Experiential Learning Activity 8 – Garden Plan (see instructions in Announcements)
- Quiz 10

Week 14 – Wildlife
- Reading – Text Chapter 14
- Assignment - Final Reflection (2 parts) For full credit, be sure to respond to all of the questions.

PART 1: Think back to what you wrote in your first reflection. How has your individual understanding

of gardening and your relationship to plants changed over the course of the class? Did you have any key realizations? Has your relationship to food and agriculture changed? What are your feelings about Extension, the Master Gardener Program, and the role of education in community development and civic life?
PART 2: Please reflect on your learning process. What activities did you find most educational? Which readings or concepts, were the most thought-provoking or transformative personally? What other feedback do you have about the class or your personal experience?
- Quiz 11

Week 15 – Review; Reading Days

Week 16 – Final Exam

Links and Policies Class Evaluation
Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at https://evaluations.ufl.edu. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at https://evaluations.ufl.edu/results/.

Special Accommodations
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Honor Code
UF students are bound by The Honor Pledge which states:
"We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment."
The Honor Code can be found here: http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/ Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor in this class.

Class Demeanor, Attendance and Make-up Policy
Students are expected to review each module and all materials and readings associated with each module. All assignments are due by 10pm on the date posted on Canvas. Late assignments will not be accepted unless there are extenuated circumstances or other reasons outlined in University policies. Excused absences that result in the inability to complete an assignment are consistent with university policies: (https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx) and require appropriate documentation.

Students are expected to behave in a manner that is respectful to the instructor and to fellow students. Our goal in this class is to create a culture of acceptance, engagement and respectful discourse. We encourage differences of opinion and sharing ideas constructively. Opinions held by other students should be respected in discussion posts, and any rude or intolerant behavior will not be tolerated. Conversations that do not contribute to the discussion of course material should be held to a minimum. Cell phone use is not permitted in class, unless otherwise specified.

Software Use:
All faculty, staff and students of the university are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against university policies and rules, disciplinary action will be taken as appropriate.

Student Assistance
At UF, we care for every single student. You are important to us, and if you are in need of assistance,

we are here to help. UF has a number of resources, facilities, and success plans to allow every person to feel a part of this University of Florida community and to succeed in their academic career. One example is the Dean of Students CARE Team which provide ongoing support for students in distress dealing with a variety of issues. They also students complete the necessary medical petition paperwork for all courses or medical drops before or after the drop deadline for a medical withdrawal. Another important resource is the Alan and Cathy Hitchcock Field and Fork Pantry. It offers food assistance to anyone with a valid UF ID. If you would like to discuss your needs or need find another type of assistance, please see me, reach out to the CARE team member, or ask your academic advisor.

Campus Helping Resources
Students experiencing crises or personal problems that interfere with their general well-being are encouraged to utilize the university's counseling resources. The Counseling & Wellness Center provides confidential counseling services at no cost for currently enrolled students. Resources are available on campus for students having personal problems or lacking clear career or academic goals, which interfere with their academic performance.

- University Counseling & Wellness Center, 3190 Radio Road, 352-392-1575, www.counseling.ufl.edu
Counseling Services
Groups and Workshops
Outreach and Consultation
Self-Help Library
Wellness Coaching

- U Matter We Care, www.umatter.ufl.edu/

- Career Connections Center, First Floor JWRU, 392-1601, https://career.ufl.edu/.

Student Complaints

Online Course: http://www.distance.ufl.edu/student-complaint-process

Materials and Supplies Fees
There are no additional fees for this course.

Grading Scheme Grading and Assignments:
Quizzes: 100 points (10 x 10 points each); 27% of total
Students should review the lectures and any assigned readings, complete the assigned Quiz sheets, and post your work on Canvas by 10pm on the due date posted each week. Late assignments will not be accepted unless there are extenuating circumstances or other reasons outlined in University policies.

Reflection and Participation: 75 points (10 points for each reflection and 5 points for each response); 20% of total
Five reflection topics will be posted in the discussion section of Canvas on the dates noted on the schedule. Students must post an initial reflection to the questions by 10pm on the due date posted. Students must then read classmates reflections and offer a thoughtful response to at least one of the reflections by 10pm Friday. Reflections are not a book report and should not simply reiterate what you have learned. You are expected to discuss your thoughts on the topic: Do you agree with the central idea, and why or why not? Is there research or information supporting the main points you are making? Did you learn something new or reinforce what you already knew? What did you take-away from the lectures and/or readings related to the topic, and what questions do you have after reviewing them? All reflections should be at least 300 words. Please check your writing before posting it – spelling, punctuation, and grammar count! All assignments should be posted on Canvas by 10pm on the due date. Late assignments will not be accepted unless there are extenuating circumstances or other reasons outlined in University policies.
Experiential Learning Activities: 100 points (20pts/activity); 27% of total
Students must complete five experiential learning activities throughout the term, chosen from the eight options listed in the schedule. If students cannot accomplish the activities due to location or medical accommodation constraints, a substitute project that covers the relevant material for that module may be chosen with prior approval by the instructor, and it is due the same time as the regular activity.

Assignment deliverables must be submitted on Canvas by 10pm on the due dates posted.
Extra Credit may be given for completing all experiential learning activities and for attendance at specified events throughout the term. All students will have equal opportunity for extra credit.
Final Exam: 100 points; 26% of total
Final exam will cover all modules and readings.

Assigned Readings
Florida Master Gardener Student Manual. University of Florida Institute of Food and Agricultural Sciences, 2018. ISBN: 978-0-578-21363
Additional readings are listed below in the schedule and will be posted on Canvas for the relevant modules.

UF Grading Policies and Student Accommodations
This course will use the following grading for the course:

- A 94 – 100%
- A- 90 – 93.9%
- B+ 87 – 89.9%
- B 83 – 86.9%
- B- 80 – 8.92%
- C+ 77 – 79.9%
- C 73 – 76.9%
- C- 70 – 72.9%
- D+ 67 – 69.9%
- D 63 – 66.9%
- D- 60 – 62.9%
- E < 60%

More info on grades and policies can be found here:
https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx

Instructor(s) Anna Prizzia
Wendy Wilber

ALS ____ - Home and Community Gardening: Collegiate Master Gardener

Instructors: Anna Prizzia, aprizzia@ufl.edu; Wendy Wilber, wilbewl@ufl.edu

Classes: TBD; Office Hours: Monday 1-3

Course Description:

The Florida Master Gardener Program trains UF/IFAS Extension volunteers to provide horticultural education to residents and communities. Students will receive training to become a Master Gardener, and learn, horticulture, Integrated Pest Management, plant pathology, and garden planning. This online class is composed of digital lectures, discussion, and hands-on activities

Course Overview:

This course is ideal for students interested in home gardening, community gardening, community development, public health, public education, Extension, urban sociology, urban landscape design, and sustainability. After completing this course, students will be qualified to become a Florida Master Gardener. If they wish to pursue this, they must work through the State Master Gardener Office and their County Extension Office within two years, identifying any formal steps to take for certification and contributing 75 volunteer hours and 10 learning hours within the first year of training. Certified Master Gardeners serve their communities by answering gardening questions from local residents, participating in community and school garden projects, supporting youth activities, and more.

Student Learning Outcomes:

By the end of this course, you will be able to:

- Explain the basic principles of horticulture in Florida, including native species and ecosystem considerations, soil health and management, plant biology and selection, and garden planning and maintenance.
- Critique the possibilities and limitations of Extension and its role in communicating science to the community.
- Discuss agro-ecological principles related to food production, and their role in home and community gardens.
- Apply the principles of integrated pest management and plant pathology in order to make recommendations for pests and disease management in home and community gardens.
- Identify the elements necessary to develop successful home landscapes and community gardens.

Grading and Assignments:
Quizzes: 100 points (10 x 10 points each); 27% of total

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The Honor Code can be found here: http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/ Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor in this class.

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  Groups and Workshops
  Outreach and Consultation
  Self-Help Library
  Wellness Coaching

- U Matter We Care, **www.umatter.ufl.edu/**

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Student Complaints

Online Course: http://www.distance.ufl.edu/student-complaint-process

Materials and Supplies Fees
There are no additional fees for this course.

Schedule of Topics and Readings

Week 1: Welcome, Master Gardener Overview and Orientation
- *Readings* - Text Chapter 1
- Beaulieu, Lionel and Sam Cordes (2014), *Extension Community Development: Building Strong, Vibrant Communities*, Journal of Extension, October 2014, Volume 52:5 https://www.joe.org/joe/2014october/comm1.php
- Assignment - *Reflection 1 (2 parts) For full credit, be sure to respond to all the questions.*

Part 1: Discuss your relationship with gardening and plants, and share why you took this class. Some questions to get you started: What interests you about plants and gardening? What are your core/central values and ideas around food production, landscaping, and gardening? What is your experience and history with plants, agriculture, gardening, food preparation, landscaping? What interested you about this class and what do you hope to get out of it?

Part 2: Based on the module, readings in the text, and the article *Extension Community Development: Building Strong, Vibrant Communities,* do things like community and school gardens play a role in Community Development? As one of the most well-known programs and "faces" of Extension, what role do you feel Master Gardeners play in supporting Extension and Community Development?

Week 2: *Florida Friendly Landscaping and Agroecology*

- *Reading* - Text Chapter 2
- *Assignment* - Experiential Learning Activity 1 – Right Plant, Right Place (see instructions in Announcements)
- *Quiz 1*

Week 3: Botany

- *Reading* – Text Chapter 3
- *Assignment* - Experiential Learning Activity 2 – Plant Parts, Life Cycle, and Processes (see instructions in Announcements)
- *Quiz 2*

Week 4 – Soils and Nutrients

- *Readings* – Text Chapter 4
- Evans, Erv & Deanna Osmond (2000) A Gardener's Guide to Protecting Water Quality. NC State PDF. https://content.ces.ncsu.edu/a-gardeners-guide-to-protecting-water-quality
- *Assignment* – Reflection 2

Think about the publication you just read, and reflect on what you learned. What was new information for you? Do you think protecting water quality is important? Why or why not? Share relevant examples from your experience. How would you apply the ideas in this reading in your current living situation if you had control – eg. apartment complex landscape, home landscape, campus landscape? What advice might you give friends or family about adjustments they could make to help protect water quality?

Week 5 – Entomology

- *Reading* – Text Chapter 5
- *Assignment* - Experiential Learning Activity 3 – Bug ID (see instructions in Announcements)
- *Quiz 3*

Week 6 – Nematology and Integrated Pest Management

- *Readings* –Text Chapter 6 and 7
- *Assignment* - Experiential Learning Activity 4 – IPM Remedy (see instructions in Announcements)
- *Quiz 4*

Week 7 Plant Pathology

- *Reading* – Text Chapter 8
- *Assignment* - Experiential Learning Activity 5 – Disease Diagnosis (see instructions in Announcements)
- *Quiz 5*

Week 8 - Pesticides

- *Readings* – Text Chapter 9
- *Assignment* – Reflection 3

Visit the pest control section of you r local hardware store. Identify two products that would be recommended for use in the home landscape to control pests or disease. Read the labels carefully. What did you learn about each of these two chemicals. Are they safe for food products? Can children and pets be exposed to them? What are your thoughts on the research regarding the effectiveness and impacts of these sorts of chemicals? Think back over the past several weeks. What are your thoughts about weed, pest, and disease management in landscapes and gardens and how do these labels change or reaffirm your ideas and attitudes? How do IPM and the use of chemical controls interact? What is the role of Extension in providing recommendations regarding pest, weed and disease management?

- *Quiz 6*

Week 9 – SPRING BREAK

NO Assignments

Week 10 –Turf, Plant Propagation

- *Reading – Text Chapter 10*
- *Assignment* - Experiential Learning Activity 6 – Seeds and Cuttings (see instructions in Announcements)
- *Quiz 7*

Week 11 – Weeds, Invasive Plants

- *Readings* – Text Chapter 11
- *Raphael K. Didham, Jason M. Tylianakis, Melissa A. Hutchison, Robert M. Ewers and Neil J. Gemmell. Are invasive species the drivers of ecological change?* TRENDS in Ecology and Evolution. Vol.20 No.9 September 2005, https://repository.si.edu/bitstream/handle/10088/6904/Didham_Tylianakis_Hutchinson_Ewers_and_Gemmell_2005.pdf?sequence=1&isAllowed=y
- *Assignment* – Reflection 4

Discuss your understanding of invasive species, and what you learned from the article. What surprised you? How do you think other ecological impacts relate to their dominance? Have you had any experiences with invasive species? What did you observe? How did it impact you or those who were dealing with it? How can extension help reduce the spread of invasive species?

- *Quiz 8*

Week 12 – Vegetables, Fruits, and Agroecology Part 2

- *Readings* – Text Chapter 12&15
- *Assignment* - Experiential Learning Activity 7 – Seasonality (see instructions in Announcements)
- *Quiz 9*

Week 13 – Planting and Maintenance

- *Reading* – Text Chapter 13
- *Assignment* - Experiential Learning Activity 8 – Garden Plan (see instructions in Announcements)
- *Quiz 10*

Week 14 – Wildlife

- *Reading* – Text Chapter 14
- *Assignment* - Final Reflection (2 parts) For full credit, be sure to respond to all of the questions.

  PART 1: Think back to what you wrote in your first reflection. How has your individual understanding of gardening and your relationship to plants changed over the course of the class? Did you have any key realizations? Has your relationship to food and agriculture changed? What are your feelings about Extension, the Master Gardener Program, and the role of education in community development and civic life?

  PART 2: Please reflect on your learning process. What activities did you find most educational? Which readings or concepts, were the most thought-provoking or transformative personally? What other feedback do you have about the class or your personal experience?
- *Quiz 11*

Week 15 – Review; Reading Days

Week 16 – Final Exam

Cover Sheet: Request 12308

FOS3xxx Life After Graduation

Info

Process	Course|New|Ugrad/Pro
Status	Pending at CALS - College of Agricultural and Life Sciences
Submitter	Charles Sims csims@ufl.edu
Created	2/15/2018 12:26:49 PM
Updated	1/9/2019 8:00:37 AM
Description of request	New undergraduate course intended for all food science majors, especially those preparing to graduate within the academic year.

Actions

Step	Status	Group	User	Comment	Updated
Department	Approved	CALS - Food Science and Human Nutrition 514915000	Susan Percival	This has been a course well-received! We are asking for a permanent number.	2/15/2018
No document changes					
College	Approved	CALS - College of Agricultural and Life Sciences	Joel H Brendemuhl	Edits requested by the CALS CC have been addressed.	5/7/2018
No document changes					
University Curriculum Committee	Commented	PV - University Curriculum Committee (UCC)	Andrew Figueroa	Added to September agenda.	8/29/2018
No document changes					

Step	Status	Group	User	Comment	Updated
University Curriculum Committee	Recycled	PV - University Curriculum Committee (UCC)	Tobin Shorey	Recycled based upon committee feedback: • Is this going to be a required course? Is a request for curriculum change following this at a future meeting? • Course description. The opening needs to be rephrased. Suggestion (in line with UCC recommendation): 'Provides an overview of what opportunities are available for food science students after graduation, and tips and advice on how to be successful after graduation. Intended for all food science majors, especially those preparing to graduate within the academic year.' • For course outcomes, it is preferable to start bullet points with verbs that are measurable. • Grading Scheme: Students may pass the class by simply attending. Attendance is 80%. The two parts (resume and interview projects) constitute 20% only. To pass, a student needs to earn 70%. In other words, if a student attends all classes and does no work, s/he can pass the class.	9/19/2018
No document changes					
College	Recycled	CALS - College of Agricultural and Life Sciences	Joel H Brendemuhl	Based on UCC requests course will need major revisions which will need to be reevaluated by the CALS CC.	9/21/2018
No document changes					
Department	Approved	CALS - Food Science and Human Nutrition 514915000	Susan Percival	NA	9/21/2018
No document changes					
College	Recycled	CALS - College of Agricultural and Life Sciences	Joel H Brendemuhl	Department approved before corrections were made and therefore it is recycled again.	9/21/2018
No document changes					
Department	Approved	CALS - Food Science and Human Nutrition 514915000	Susan Percival	NA	9/21/2018
No document changes					

Step	Status	Group	User	Comment	Updated
College	Recycled	CALS - College of Agricultural and Life Sciences	Joel H Brendemuhl	Department approved before corrections were made.	9/21/2018
No document changes					
Department	Approved	CALS - Food Science and Human Nutrition 514915000	Susan Percival		1/9/2019
Life After Graduation syllabus revised 12052018.doc					12/11/2018
College	Pending	CALS - College of Agricultural and Life Sciences			1/9/2019
No document changes					
University Curriculum Committee					
No document changes					
Statewide Course Numbering System					
No document changes					
Office of the Registrar					
No document changes					
Student Academic Support System					
No document changes					
Catalog					
No document changes					
College Notified					
No document changes					

Course|New for request 12308

Info

Request: FOS3xxx Life After Graduation
Description of request: New undergraduate course intended for all food science majors, especially those preparing to graduate within the academic year.
Submitter: Charles Sims csims@ufl.edu
Created: 12/11/2018 11:32:26 AM
Form version: 5

Responses

Recommended Prefix FOS
Course Level 3
Number xxx
Category of Instruction Intermediate
Lab Code None
Course Title Life After Graduation
Transcript Title Life After Graduation
Degree Type Baccalaureate

Delivery Method(s) On-Campus
Co-Listing No
Co-Listing Explanation None
Effective Term Earliest Available
Effective Year Earliest Available
Rotating Topic? No
Repeatable Credit? No

Amount of Credit 1

S/U Only? Yes
Contact Type Regularly Scheduled
Weekly Contact Hours 1
Course Description Provides an overview of what opportunities are available for food science students after graduation, and tips and advice on how to be successful after graduation. Intended for all food science majors, especially those preparing to graduate within the academic year..
Prerequisites junior or senior standing
Co-requisites None
Rationale and Placement in Curriculum The food science faculty identified a real need to better prepare our students for the opportunities and challenges after they graduate, and this course was developed to do so. This course was taught twice as a special topics and was very well received by the students. The course was slightly revised each year based on feedback from the students. We are now requesting formal approval of this course as a new course that will become mandatory in the future for the food science major.
Course Objectives --Complete a professional resume.

--Demonstrate preparation for a job interview

--Recognize the search and application process for jobs in the food and related industries.

--Identify the opportunities and application for graduate educationl

--Understand the importance of professional organizations related to career development.

--Identify opportunities for internships and international experiences.

--Discuss the importance of professional conduct in the workplace.

Course Textbook(s) and/or Other Assigned Reading None
Weekly Schedule of Topics Week 1 Course overview
Week 2 Life after graduation/Who are you, and what are your options?
Week 3 Labor Day, no class
Week 4 Graduate school opportunities
Week 5 Graduate school application process
Week 6 Jobs/careers (academia and government)
Week 7 Jobs/careers (alumni from food industry)
Week 8 Jobs/careers (alumni from food industry)
Week 9 Resumes and cover letters
Week 10 Interview skills and complete a mock interview
Week 11 Careers in food science, the big picture
Week 12 Internships, undergraduate research opportunities
Week 13 International opportunities and study abroad
Week 14 Grad Student Roundtable – Current Graduate Student Representatives
Week 15 Professional practices and Professional organizations
Week 16 Course Round-Up, resume and mock interview due

Links and Policies Grades and Grade Points
For information on current UF policies for assigning grade points, see
https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx

Attendance and Make-Up Work
Requirements for class attendance and make-up exams, assignments and other work are consistent with university policies that can be found at:
https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx.

Online Course Evaluation Process
Student assessment of instruction is an important part of efforts to improve teaching and learning. At the end of the semester, students are expected to provide feedback on the quality of instruction in this course using a standard set of university and college criteria. These evaluations are conducted online at https://evaluations.ufl.edu. Evaluations are typically open for students to complete during the last two or three weeks of the semester; students will be notified of the specific times when they are open. Summary results of these assessments are available to students at https://evaluations.ufl.edu/results.

Academic Honesty
As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge: "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity." You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment."

It is assumed that you will complete all work independently in each course unless the instructor provides explicit permission for you to collaborate on course tasks (e.g. assignments, papers, quizzes, exams). Furthermore, as part of your obligation to uphold the Honor Code, you should report any condition that facilitates academic misconduct to appropriate personnel. It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For more information regarding the Student Honor Code, please see:
http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code.

Software Use:
All faculty, staff and students of the university are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against university policies and rules, disciplinary action will be taken as appropriate.

Services for Students with Disabilities

The Disability Resource Center coordinates the needed accommodations of students with disabilities. This includes registering disabilities, recommending academic accommodations within the classroom, accessing special adaptive computer equipment, providing interpretation services and mediating faculty-student disability related issues. Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation

0001 Reid Hall, 352-392-8565, www.dso.ufl.edu/drc/

Campus Helping Resources
Students experiencing crises or personal problems that interfere with their general well-being are encouraged to utilize the university's counseling resources. The Counseling & Wellness Center provides confidential counseling services at no cost for currently enrolled students. Resources are available on campus for students having personal problems or lacking clear career or academic goals, which interfere with their academic performance.

- University Counseling & Wellness Center, 3190 Radio Road, 352-392-1575, www.counseling.ufl.edu/cwc/
Counseling Services
Groups and Workshops
Outreach and Consultation
Self-Help Library
Wellness Coaching

- U Matter We Care, www.umatter.ufl.edu/

- Career Resource Center, First Floor JWRU, 392-1601, www.crc.ufl.edu/

Grading Scheme This course will be graded on an Satisfactory (>80%)/Unsatisfactory (<80%) basis out of a total of 100 points. Points will be awarded from assignments and attendance as follows:

Attendance = 70 points (-10 points per missed class)
Resume project (due by the last day of class) = 15 points
Interview project (due by the last day of class) = 15 points
Total points = 100

Instructor(s) Charles Sims
Renee Goodrich-Schneider
Keith Schneider
Guest Lecturers

FOS 4936
Life after Graduation
1 Credit, Fall 2018

Course Instructors

Charles Sims, Ph.D.
Food Science and Human Nutrition Department
Building 120, room 130
Email: csims@ufl.edu
Office phone: 352-294-3592
Office Hours: Wednesday and Thursday 1:00-3:00 pm or by appointment

Renee Goodrich-Schneider, Ph.D.
Food Science and Human Nutrition Department
FSHN Building, room 329a
Email: Goodrich@ufl.edu
Office phone: 352-294-3726
Office Hours: Wednesday and Thursday 1:00-3:00 pm

Keith Schneider, Ph.D.
Food Science and Human Nutrition Department
Aquatic Food Products Lab, room 216
Email: keiths29@ufl.edu
Office phone: 352-294-3910
Office Hours: Tuesday and Thursday 9:00-11:00 am

Course Hours

Monday, period 5 (11:45am)

Course Description

Provides an overview of what opportunities are available for food science students after graduation, and tips and advice on how to be successful after graduation. Intended for all food science majors, especially those preparing to graduate within the academic year.

Textbooks

No textbook is required. You may be given handouts in class by various lecturers.

Class Rules

Attendance, attention and full participation are expected. Other rules for the class are simple and essentially involve common sense and courtesy towards your colleagues and the instructor: no eating or drinking in the classroom; no side conversations; keep cell phones and other communication devices muted and stored away; if you are late, take your seat quietly and unobtrusively. You are welcome to bring laptops to class for note taking.

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This course will be graded on an Satisfactory (>80%)/Unsatisfactory (<80%) basis out of a total of 100 points. Points will be awarded from assignments and attendance as follows:

Attendance = 70 points (-10 points per missed class)
Resume project (due by the last day of class) = 15 points
Interview project (due by the last day of class) = 15 points
Total points = 100

General Policy on Writing

All writing for this course should be clear and concise (including emails to instructors and particularly, any sort of summary assessment we ask you to write). Employers and graduate/professional programs seek graduates who can communicate effectively through standard scientific and business writing. Please familiarize yourself with a major journal in your discipline and follow its citation style throughout the course.

Learning Outcomes

--Complete a professional resume.

--Demonstrate preparation for a job interview.

--Recognize the search and application process for jobs in the food and related industries.

--Identify the opportunities and applications for graduate education.

--Understand the importance of professional organizations related to career development.

--Identify opportunities for internships and international experiences.

--Discuss the importance of professional conduct in the workplace.

Course Outline

August 27	Course overview
September 3	Labor Day, no class
September 10	Life after graduation/Who are you, and what are your options?
September 17	Graduate school opportunities
September 24	Graduate school application process
October 1	Graduate Student Roundtable
October 8	Jobs/careers (academia and government)
October 15	Jobs/careers (alumni from food industry)
October 22	Interviewing strategies and complete a mock interview
October 29	Careers in food science – the big picture
November 5	Resumes and cover letters
November 12	Veteran's Day, no class
November 19	Internships, undergraduate research opportunities
November 26	International opportunities and study abroad
December 3	Professional practices and professional organizations

Information for All Students

Grades and Grade Points

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0001 Reid Hall, 352-392-8565, **www.dso.ufl.edu/drc/**

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- *University Counseling & Wellness Center, 3190 Radio Road, 352-392-1575,* **www.counseling.ufl.edu/cwc/**
  Counseling Services
  Groups and Workshops
  Outreach and Consultation
  Self-Help Library
  Wellness Coaching

- U Matter We Care, **www.umatter.ufl.edu/**

- *Career Resource Center,* First Floor JWRU, 392-1601, **www.crc.ufl.edu/**

Cover Sheet: Request 13470

FOS 4xxx FOOD AND ENVIRONMENTAL VIROLOGY

Info

Process	Course|New|Ugrad/Pro
Status	Pending at CALS - College of Agricultural and Life Sciences
Submitter	Naim Montazeri-Djouybari nmontazeri@ufl.edu
Created	1/3/2019 12:36:52 PM
Updated	1/9/2019 8:25:25 AM
Description of request	I request reviewing the syllabus developed for the Food and Environmental Virology course for the approval process as an individual course.

Actions

Step	Status	Group	User	Comment	Updated
Department	Transferred	CALS - Agricultural and Life Sciences - General 514903000	Jodi H Brendemuhl	This request must first be approved by the FSHN department. In addition the request needs a complete syllabus uplaoded.	1/3/2019
No document changes					
Department	Approved	CALS - Food Science and Human Nutrition 514915000	Susan Percival		1/9/2019
2019_FEV_Montazeri_122518_undergrad_NM.docx 2019_FEV_Montazeri_122518_uniqueness_NM.docx					1/4/2019 1/4/2019
College	Pending	CALS - College of Agricultural and Life Sciences			1/9/2019
No document changes					
University Curriculum Committee					
No document changes					
Statewide Course Numbering System					
No document changes					
Office of the Registrar					
No document changes					
Student Academic Support System					
No document changes					
Catalog					
No document changes					
College Notified					
No document changes					

Course|New for request 13470

Info

Request: FOS 4xxx FOOD AND ENVIRONMENTAL VIROLOGY
Description of request: I request reviewing the syllabus developed for the Food and Environmental Virology course for the approval process as an individual course.
Submitter: Naim Montazeri-Djouybari nmontazeri@ufl.edu
Created: 1/3/2019 12:27:14 PM
Form version: 1

Responses

Recommended Prefix FOS
Course Level 4
Number XXX
Category of Instruction Advanced
Lab Code None
Course Title Food and Environmental Virology
Transcript Title Food/Environ Virology
Degree Type Baccalaureate

Delivery Method(s) On-Campus
Co-Listing Yes
Co-Listing Explanation This course is designed for upper-level undergraduate and graduate students. According to the Bloom's taxonomy, the content of this course is intended to help students understand, apply, and analyze (draw connection among ideas) the issues in food and environmental virology as its relevance to food-borne and water-borne illnesses. Both undergraduate and graduate students will receive the same presentation slides every session. Further reading materials (book chapters) will be provided based on the necessity of some sessions for a deeper understanding of the concepts.

There are some specific strategies to differentiate graduate students, in which graduate students

- Will be provided with additional reading materials of mainly peer-reviewed articles relevant to the session subject areas. These extra reading materials will be included in their final exam. Questions will carry different points for graduate vs. undergraduate students to compensate for the extra questions, which will be considered for the graduate students.
- Will discuss a peer-reviewed article or a topic of interest, selected by the help of the instructor, as a 20-30 min oral presentation followed by question and answer. Students will use PowerPoint slide sets for in-class presentations. PowerPoint slide sets must be submitted to the instructor by 11:59 p.m. on the 4rd calendar day before their due dates. Students are expected to communicate with the instructor in advance to ensure the format and accuracy of the content of their presentation. The slide sets will be uploaded to Canvas and used as course material for the exams.

The following table will be used for grading purposes:

Activity/Graduates/Undergraduates
Mid-term exam 1: 200/200
Mid-term exam 2: 200/200
Assignment 1: 50/100
Assignment 2: 50/100
Presentation: 100/-
Final exam: 400/400
TOTAL:1000/1000
Effective Term Earliest Available
Effective Year 2019
Rotating Topic? Yes
Repeatable Credit? No

Amount of Credit 2

If variable, # min 2
If variable, # max 3
S/U Only? No
Contact Type Regularly Scheduled
Weekly Contact Hours 5
Course Description Food virology is an emerging topic in the field of microbial food safety. This course explores the role of pathogenic viruses in public health; their environmental transmission to human; isolation and detection methods; and prevention and control strategies. Through this course, students can develop a competency framework within their discipline.
Prerequisites MCB2000/L, MCB3020/L, FOS4222, MCB4503/5505, or permission of the instructor
Co-requisites N/A
Rationale and Placement in Curriculum Food virology is an emerging topic in the microbial food safety field. Food-borne and water-borne illnesses pose a huge health-care associated burden worldwide. Viruses' presence in an ecosystem, transmission to food, their interaction with the host, infectious cycles, and decontamination methods could be different from that of the bacteria. This course addresses these issues and covers a broad range of topic from basic virology to applied concepts. In class discussions engage students on some current issues and challenges such as contamination incidences in enclosed settings such as cruise ships, healthcare, catering facilities, as well as the public health consequences of natural disasters such as hurricanes and strategies to decontaminate viruses and prevent further spread of the pathogens. Therefore, this course can be beneficial to educate the student on the risks of food-borne and water-borne pathogenic viruses and help students build competency in their field.
Course Objectives By the end of this course the students will be able to:
1. Recognize important food-borne and water-borne pathogenic viruses and distinguish the occurrence of viral infections from a global perspective while illustrating the incidences of the viral infections in low-income vs. high-income countries, or in confined settings such as health-care facilities, restaurants, food processing plants, farms, and aquaculture facilities
2. Critically relate and illustrate specific molecular mechanisms under which viruses persist in the environment, transfer to food and/or contact surfaces, and the evolutionary pathways contributing to the emergence of new and potentially more virulent strains
3. Explain methods for the isolation, purification, and detection of viruses in environmental samples including their advantages and disadvantages, and rationally determine the appropriate methodologies based on the downstream applications
4. Assess and critically analyze potential routes of contamination of food, water, and contact surfaces with food-borne and water-borne viruses, and logically recommend proper control and prevention strategies in accordance with each specific route such as food handlers, wastewater, severe weather conditions, floods, and runoff waters.
Course Textbook(s) and/or Other Assigned Reading REQUIRED READING MATERIAL
- Further readings materials: mainly book chapters
RECOMMENDED READING MATERIALS
- Cook N. 2013. Viruses in Food and Water - Risks, Surveillance and Control. Woodhead Publishing, England
- Koopmans M. et al. 2008. Food-Borne Viruses - Progress and Challenges. American Society for Microbiology Press, Washington, DC, USA
- Knipe D. M. & Howley P. M. 2007. Fields Virology. 5th Edition. Lippincott Williams & Wilkins. Philadelphia, PA, USA
- Carter J. & Saunders V. 2013. Virology: Principles & Applications. 2nd Edition. John Wiley & Sons Ltd. England
- Peer-reviewed articles published in prestigious journals such as the Journal of Virology, Food and Environmental Virology, Food and Environmental Microbiology, and Journal of Food Protection
- University of Florida libraries and online sources such as e-books, ILL, and Knovel App.
- Other reliable online sources such as This Week In Virology, by Dr. V. Racaniello, url: http://www.microbe.tv/

Weekly Schedule of Topics

Week	Day	Date	Topic area/activity
1	F	Aug 23	Pre-assessment and introduction
	W	Aug 28	Basic virology - I
2	F	Aug 30	Basic virology - II
	W	Sep 4	Food-borne viruses and global health I
3	F	Sep 6	Food-borne viruses and global health II
	W	Sep 11	Hepatitis A & E
4	F	Sep 13	Human norovirus
	W	Sep 18	Enteroviruses

5	F	Sep 20	Review for the exam 1
	W	Sep 25	Exam 1
6	F	Sep 27	Isolation and purification of viruses
	W	Oct 2	Detection and quantification of viruses
7	F	Oct 4	Cell culture systems
	W	Oct 9	Utilization of surrogates
8	F	Oct 11	Bacteriophages
	W	Oct 16	Virus-bacteria interaction
9	F	Oct 18	Peer-review article discussion
	W	Oct 23	Review for the exam 2
10	F	Oct 25	Exam 2
	W	Oct 30	Viruses persistence in water and sediment
11	F	Nov 1	Viral presence in sewage (wastewater)
	W	Nov 6	Viral contamination by food handlers
12	F	Nov 8	Food-borne viruses in meat and seafood
	W	Nov 13	Food-borne viruses in fresh produce
13	F	Nov 15	Virus inactivation – processing technologies
	W	Nov 20	Virus inactivation - surface decontamination
14	F	Nov 22	No class (Thanksgiving holiday)
	W	Nov 27	Peer-review article discussion
15	F	Nov 29	Prions
	W	Dec 4	Review for the final exam
16	F	Dec 6	No class (reading days)
	W	Dec 11	Final exam

Links and Policies COURSE STRUCTURE
This is an in-class course and will be delivered through lectures using slides and videos. Further reading materials such as book chapters will be provided for a better understanding of the core concepts. All the further reading materials will be included in the exams. All graduate and undergraduate students will complete and turn in two assignments (each 2-page long) on topics selected by the instructor. The mid-term exam (50 min) and final exams (90 min) will be closed-book.
ONLINE COURSE EVALUATION
Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at https://evaluations.ufl.edu. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at https://evaluations.ufl.edu/results/.

COURSE WEBSITE
The course is available via through the UF e-learning website (Canvas); go to http://elearning.ufl.edu/ and click on the Canvas Login button. It requires Gator Link username/password. The course site will be used to course relevant announcements, reading, lecture materials, links, assignments, etc. It is recommended to adjust the setting for announcement alerts. FAQs: http://elearning.ufl.edu/e-learning-basics/uf-e-learning-faqs/; Tutorials: http://elearning.ufl.edu/e-learning-basics/uf-e-learning-tutorials/
ATTENDANCE AND MAKE-UP POLICY
Excused absences must be consistent with university policies in the Graduate Catalog (http://gradcatalog.ufl.edu/content.php?catoid=10&navoid=2020#attendance) and require appropriate documentation. Additional information can be found here:
https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx

SOFTWARE USE
All faculty, staff and students of the university are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against university policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.
ACADEMIC HONESTY
As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge: "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity." You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida, the following pledge is either required or implied: "On

my honor, I have neither given nor received unauthorized aid in doing this assignment."

It is assumed that you will complete all work independently in each course unless the instructor provides explicit permission for you to collaborate on course tasks (e.g. assignments, peer reviews, activity log, etc.). Furthermore, as part of your obligation to uphold the Honor Code, you should report any condition that facilitates academic misconduct to appropriate personnel. It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For more information regarding the Student Conduct & Honor Code, please see: https://sccr.dso.ufl.edu/students/student-conduct-code/.

STUDENT PRIVACY

There are federal laws protecting your privacy with regards to grades earned in courses and on individual assignments. For more information, please see: http://registrar.ufl.edu/catalog0910/policies/regulationferpa.html.

STUDENTS WITH DISABILITIES

Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, www.dso.ufl.edu/drc/) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

CAMPUS HELPING RESOURCES

Students experiencing crises or personal problems that interfere with their general wellbeing are encouraged to utilize the university's counseling resources. The Counseling & Wellness Center provides confidential counseling services at no cost for currently enrolled students. Resources are available on campus for students having personal problems or lacking clear career or academic goals, which interfere with their academic performance:

- U Matter, We Care: If you or a friend is in distress, please contact umatter@ufl.edu or 352-392-1575 so that a team member can reach out to the student.
- Counseling and Wellness Center: http://www.counseling.ufl.edu/cwc, and 352-392-1575.
- University Police Department: 352-392-1111 or 9-1-1 for emergencies. http://www.police.ufl.edu/.
- Sexual Assault Recovery Services (SARS): Student Health Care Center, 352-392-1161.
- E-learning technical support, 352-392-4357 (select option 2) or e-mail to Learning-support@ufl.edu. https://lss.at.ufl.edu/help.shtml.
- Career Resource Center, Reitz Union, 392-1601. Career assistance and counseling. https://www.crc.ufl.edu/.
- Library Support, http://cms.uflib.ufl.edu/ask. Various ways to receive assistance with respect to using the libraries or finding resources.
- Teaching Center, Broward Hall, 392-2010 or 392-6420. General study skills and tutoring. https://teachingcenter.ufl.edu/.
- Writing Studio, 302 Tigert Hall, 846-1138. Help brainstorming, formatting, and writing papers. https://writing.ufl.edu/writing-studio/.
- Student Complaints Campus: https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf.
- On-Line Students Complaints: http://www.distance.ufl.edu/student-complaint-process.

COMPLAINTS AND CONFLICT RESOLUTION

Policies and services at the University of Florida can be found at https://dso.ufl.edu/areas_services/ for residential and at http://distance.ufl.edu/student-complaint-process/ for online courses.

OTHER INFORMATION

Lecture material and information are the property of the University of Florida and the course instructor and may not be used for any commercial purpose. Students found in violation may be subject to disciplinary action under the University's Student Conduct Code. Only students formally registered for the course are permitted to attend lectures and take quizzes/tests.

Grading Scheme GRADING

There is a total of 1,000 points available throughout the semester (table below). Grades are not curved and not negotiable.

Mid-term exam 1	200
Mid-term exam 2	200

Assignment 1	100
Assignment 2	100
Presentation	-
Final exam	400
TOTAL	1,000

FINAL GRADE SCALE

Based on the total of 1,000 points.

A = 934-1,000; A- = 900-933; B+ = 867-899 B = 834-866; B- = 800-833
C+ = 767-799; C = 734-766; C- = 700-733 D+ =667-699; D = 634-666

D- = 600-633; E = =599

For further information on UF's Grading Policy, consult:
https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx

Instructor(s) Naim Montazeri

UF IFAS
UNIVERSITY of FLORIDA

Course Syllabus

FOOD AND ENVIRONMENTAL VIROLOGY

FOS4xxx

Fall semester 2019

Instructor	Naim Montazeri, Ph.D. Assistant Professor
Department	Food Science and Human Nutrition (FSHN)
Institution	University of Florida
Office Phone	(352) 294-3756
Email	nmontazeri@ufl.edu
Office location	572 Newell Drive, FSHN Bldg, Room 341A
Office hours	MW, 3-4 p.m. (by appointment only)
Announcements	Through Canvas
Eligibility	Upper-division undergraduate students
Prerequisite (either)	MCB2000/L, MCB3020/L, FOS4222, MCB4503/5505, or permission of the instructor
Class location	TBA
Class hours	MW, 1:55-2:45 p.m. (period 7)
Credits	2

COURSE DESCRIPTION

Food virology is an emerging topic in the field of microbial food safety. This course explores the role of pathogenic viruses in public health; their environmental transmission to human; isolation and detection methods; and prevention and control strategies. Through this course, students can develop a competency framework within their discipline.

COURSE GOALS

By the end of this course the students will be able to:

1. Recognize important food-borne and water-borne pathogenic viruses and distinguish the occurrence of viral infections from a global perspective while illustrating the incidences of the viral infections in low-income vs. high-income countries, or in confined settings such as health-care facilities, restaurants, food processing plants, farms, and aquaculture facilities
2. Critically relate and illustrate specific molecular mechanisms under which viruses persist in the environment, transfer to food and/or contact surfaces, and the evolutionary pathways contributing to the emergence of new and potentially more virulent strains
3. Explain methods for the isolation, purification, and detection of viruses in environmental

samples including their advantages and disadvantages, and rationally determine the appropriate methodologies based on the downstream applications

4. Assess and critically analyze potential routes of contamination of food, water, and contact surfaces with food-borne and water-borne viruses, and logically recommend proper control and prevention strategies in accordance with each specific route such as food handlers, wastewater, severe weather conditions, floods, and runoff waters.

COURSE STRUCTURE

This is an in-class course and will be delivered through lectures using slides and videos. Further reading materials such as book chapters will be provided for a better understanding of the core concepts. All the further reading materials will be included in the exams. All graduate and undergraduate students will complete and turn in two assignments (each 2-page long) on topics selected by the instructor. The mid-term exam (50 min) and final exams (90 min) will be closed-book.

ONLINE COURSE EVALUATION

Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at https://evaluations.ufl.edu. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at https://evaluations.ufl.edu/results/.

REQUIRED READING MATERIAL

- Further readings materials: mainly book chapters

RECOMMENDED READING MATERIALS

- Cook N. 2013. *Viruses in Food and Water - Risks, Surveillance and Control.* Woodhead Publishing, England
- Koopmans M. et al. 2008. *Food-Borne Viruses - Progress and Challenges.* American Society for Microbiology Press, Washington, DC, USA
- Knipe D. M. & Howley P. M. 2007. *Fields Virology.* 5th Edition. Lippincott Williams & Wilkins. Philadelphia, PA, USA
- Carter J. & Saunders V. 2013. *Virology: Principles & Applications.* 2nd Edition. John Wiley & Sons Ltd. England
- Peer-reviewed articles published in prestigious journals such as the *Journal of Virology, Food and Environmental Virology*, *Food and Environmental Microbiology*, and *Journal of Food Protection*
- University of Florida libraries and online sources such as e-books, ILL, and Knovel App.
- Other reliable online sources such as *This Week In Virology,* by Dr. V. Racaniello, url: http://www.microbe.tv/

COURSE WEBSITE

The course is available via through the UF e - learning website (Canvas); go to http://elearning.ufl.edu/ and click on the Canvas Login button. It requires Gator Link username/password. The course site will be used to course relevant announcements, reading, lecture materials, links, assignments, etc. It is recommended to adjust the setting for announcement alerts. FAQs: http://elearning.ufl.edu/e-learning-basics/uf-e-learning-faqs/; Tutorials: http://elearning.ufl.edu/e-learning-basics/uf-e-learning-tutorials/

ATTENDANCE AND MAKE-UP POLICY

Excused absences must be consistent with university policies in the Graduate Catalog (http://gradcatalog.ufl.edu/content.php?catoid=10&navoid=2020#attendance) and require appropriate documentation. Additional information can be found here: https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx

GRADING

There is a total of 1,000 points available throughout the semester (table below). Grades are not curved and not negotiable.

Mid-term exam 1	200
Mid-term exam 2	200
Assignment 1	100
Assignment 2	100
Presentation	-
Final exam	400
TOTAL	**1,000**

FINAL GRADE SCALE

Based on the total of 1,000 points.

A = 934-1,000	A- = 900-933	B+ = 867-899	B = 834-866	B- = 800-833
C+ = 767-799	C = 734-766	C- = 700-733	D+ =667-699	D = 634-666
D- = 600-633	E = ≤599			

For further information on UF's Grading Policy, consult: https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx

SOFTWARE USE

All faculty, staff and students of the university are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against university policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.

ACADEMIC HONESTY

As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge: "*We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.*" You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida, the following pledge is either required or implied: *"On my honor, I have neither given nor received unauthorized aid in doing this assignment.*"

It is assumed that you will complete all work independently in each course unless the instructor provides explicit permission for you to collaborate on course tasks (e.g. assignments, peer reviews, activity log, etc.). Furthermore, as part of your obligation to uphold the Honor Code, you should report any condition that facilitates academic misconduct to appropriate personnel. It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For more information regarding the Student Conduct & Honor Code, please see: https://sccr.dso.ufl.edu/students/student-conduct-code/.

STUDENT PRIVACY

There are federal laws protecting your privacy with regards to grades earned in courses and on individual assignments. For more information, please see: http://registrar.ufl.edu/catalog0910/policies/regulationferpa.html.

STUDENTS WITH DISABILITIES

Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, www.dso.ufl.edu/drc/) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

CAMPUS HELPING RESOURCES

Students experiencing crises or personal problems that interfere with their general wellbeing are

encouraged to utilize the university's counseling resources. The Counseling & Wellness Center provides confidential counseling services at no cost for currently enrolled students. Resources are available on campus for students having personal problems or lacking clear career or academic goals, which interfere with their academic performance:

- U Matter, We Care: If you or a friend is in distress, please contact umatter@ufl.edu or 352-392-1575 so that a team member can reach out to the student.
- Counseling and Wellness Center: http://www.counseling.ufl.edu/cwc, and 352-392-1575.
- University Police Department: 352-392-1111 or 9-1-1 for emergencies. http://www.police.ufl.edu/.
- Sexual Assault Recovery Services (SARS): Student Health Care Center, 352-392-1161.
- E-learning technical support, 352-392-4357 (select option 2) or e-mail to Learning-support@ufl.edu. https://lss.at.ufl.edu/help.shtml.
- Career Resource Center, Reitz Union, 392-1601. Career assistance and counseling. https://www.crc.ufl.edu/.
- Library Support, http://cms.uflib.ufl.edu/ask. Various ways to receive assistance with respect to using the libraries or finding resources.
- Teaching Center, Broward Hall, 392-2010 or 392-6420. General study skills and tutoring. https://teachingcenter.ufl.edu/.
- Writing Studio, 302 Tigert Hall, 846-1138. Help brainstorming, formatting, and writing papers. https://writing.ufl.edu/writing-studio/.
- Student Complaints Campus: https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf.
- On-Line Students Complaints: http://www.distance.ufl.edu/student-complaint-process.

COMPLAINTS AND CONFLICT RESOLUTION

Policies and services at the University of Florida can be found at https://dso.ufl.edu/areas_services/ for residential and at http://distance.ufl.edu/student-complaint-process/ for online courses.

OTHER INFORMATION

Lecture material and information are the property of the University of Florida and the course instructor and may not be used for any commercial purpose. Students found in violation may be subject to disciplinary action under the University's Student Conduct Code. Only students formally registered for the course are permitted to attend lectures and take quizzes/tests.

Food and Environmental Virology

Class Schedule (subject to change)

FOS4xxxx

Week	Da	Date	Topic area/activity	
1	F	Aug 23	Pre-assessment and introduction	
	W	Aug 28	Basic virology - I	
2	F	Aug 30	Basic virology - II	
	W	Sep 4	Food-borne viruses and global health I	
3	F	Sep 6	Food-borne viruses and global health II	
	W	Sep 11	Hepatitis A & E	
4	F	Sep 13	Human norovirus	
	W	Sep 18	Enteroviruses	
5	F	Sep 20	Review for the exam 1	
	W	Sep 25	**Exam 1**	
6	F	Sep 27	Isolation and purification of viruses	
	W	Oct 2	Detection and quantification of viruses	
7	F	Oct 4	Cell culture systems	
	W	Oct 9	Utilization of surrogates	Assignment 1 due
8	F	Oct 11	Bacteriophages	Course evaluation
	W	Oct 16	Virus-bacteria interaction	
9	F	Oct 18	**Peer-review article discussion**	For graduate students
	W	Oct 23	Review for the exam 2	
10	F	Oct 25	**Exam 2**	
	W	Oct 30	Viruses persistence in water and sediment	
11	F	Nov 1	Viral presence in sewage (wastewater)	
	W	Nov 6	Viral contamination by food handlers	
12	F	Nov 8	Food-borne viruses in meat and seafood	
	W	Nov 13	Food-borne viruses in fresh produce	Assignment 2 due
13	F	Nov 15	Virus inactivation – processing technologies	
	W	Nov 20	Virus inactivation - surface decontamination	
14	F	Nov 22	**No class (Thanksgiving holiday)**	
	W	Nov 27	**Peer-review article discussion**	For graduate students
15	F	Nov 29	Prions	
	W	Dec 4	Review for the final exam	UF course evaluation
16	F	Dec 6	**No class (reading days)**	
	W	Dec 11	**Final exam**	

Cover Sheet: Request 13492

ALS 3203 PC Use In Agriculture

Info

Process	Course|Modify|Ugrad/Pro
Status	Pending at CALS - College of Agricultural and Life Sciences
Submitter	Jennifer Weeks jenweeks1@ufl.edu
Created	1/9/2019 10:54:50 AM
Updated	1/9/2019 11:01:56 AM
Description of request	The Department of Entomology and Nematology is requesting to terminate this course.

Actions

Step	Status	Group	User	Comment	Updated
Department	Approved	CALS - Entomology and Nematology 514914000	Heather Mcauslane		1/9/2019
No document changes					
College	Pending	CALS - College of Agricultural and Life Sciences			1/9/2019
No document changes					
University Curriculum Committee					
No document changes					
Statewide Course Numbering System					
No document changes					
Office of the Registrar					
No document changes					
Student Academic Support System					
No document changes					
Catalog					
No document changes					
College Notified					
No document changes					

Course|Modify for request 13492

Info

Request: ALS 3203 PC Use In Agriculture
Description of request: The Department of Entomology and Nematology is requesting to terminate this course.
Submitter: Jennifer Weeks jenweeks1@ufl.edu
Created: 1/9/2019 10:18:20 AM
Form version: 1

Responses

Current Prefix ALS
Course Level 3
Number 203
Lab Code None
Course Title PC Use in Agriculture
Effective Term Earliest Available
Effective Year Earliest Available
Requested Action Terminate Course
Change Course Prefix? No

Change Course Level? No

Change Course Number? No

Change Lab Code? No

Change Course Title? No

Change Transcript Title? No

Change Credit Hours? No

Change Variable Credit? No

Change S/U Only? No

Change Rotating Topic Designation? No

Change Repeatable Credit? No

Maximum Repeatable Credits 0
Change Course Description? No

Change Prerequisites? No

Change Co-requisites? No

Rationale The main audience for this course is students from the College of Communications fulfilling an elective from the quantitative track (to replace the foreign language requirement). Given the advancement of technology within the discipline, the content of the course is no longer providing educational value to that audience. The course material is redundant to the knowledge and skills learned within the coursework of the majors for that college.

Cover Sheet: Request 13488

FAS2024 Global and Regional Perspectives in Fisheries

Info

Process	Course|Modify|Ugrad/Pro
Status	Pending at CALS - College of Agricultural and Life Sciences
Submitter	Scott Sager sasager@ufl.edu
Created	1/8/2019 8:38:03 AM
Updated	2/4/2019 11:39:05 AM
Description of request	Change of title to "Sustainable Fisheries".

Actions

Step	Status	Group	User	Comment	Updated
Department	Approved	CALS - Forest Resources and Conservation 514946000	Terrell Baker III		2/4/2019
FAS 2024 Syllabus.pdf					1/8/2019
College	Pending	CALS - College of Agricultural and Life Sciences			2/4/2019
No document changes					
University Curriculum Committee					
No document changes					
Statewide Course Numbering System					
No document changes					
Office of the Registrar					
No document changes					
Student Academic Support System					
No document changes					
Catalog					
No document changes					
College Notified					
No document changes					

Course|Modify for request 13488

Info

Request: FAS2024 Global and Regional Perspectives in Fisheries
Description of request: Change of title to "Sustainable Fisheries".
Submitter: Scott Sager sasager@ufl.edu
Created: 1/8/2019 8:28:17 AM
Form version: 1

Responses

Current Prefix FAS
Course Level 2
Number 024
Lab Code None
Course Title Global and Regional Perspectives in Fisheries
Effective Term Earliest Available
Effective Year Earliest Available
Requested Action Other (selecting this option opens additional form fields below)
Change Course Prefix? No

Change Course Level? No

Change Course Number? No

Change Lab Code? No

Change Course Title? Yes
Current Course Title Global and Regional Perspectives in Fisheries
Proposed Course Title Sustainable Fisheries
Change Transcript Title? Yes
Current Transcript Title GLOBAL REGION PERSPEC
Proposed Transcript Title (21 char. max) SUSTAINABLE FISHERIES
Change Credit Hours? No

Change Variable Credit? No

Change S/U Only? No

Change Contact Type? No

Change Rotating Topic Designation? No

Change Repeatable Credit? No

Maximum Repeatable Credits 3
Change Course Description? Yes
Current Course Description Fish biology, ecology and habitats relevant to fisheries on both a global and regional (Florida) scale. Follows the fisheries occurring from cold mountain rivers to the depths of the oceans, with special topics (e.g., artificial reefs, fisheries bycatch and aquaculture). Intended for non-science and science majors.
Proposed Course Description (50 words max) Fish biology, ecology, and habitats relevant to sustainable fisheries on a global and regional (Florida) scale. Discusses fisheries occurring from

mountain rivers to ocean depths, with emphasis on resource use. Topics include invasives, aquaculture, dams, artificial reefs, bycatch, climate change, and marine protected areas. Intended for non-science and science majors.
Change Prerequisites? No

Change Co-requisites? No

Rationale New title better reflects the subject matter of the course.

FAS 2024: Sustainable Fisheries

Coordinator and Instructor: Dr. Debra J. Murie

Main Office: Program of Fisheries and Aquatic Sciences, School of Forest Resources and Conservation, 7922 NW 71st Street, Gainesville

Office Hours: Monday and Wednesday from 10:15-11:00 a.m. in McCarty B Room G109 (on campus), or by arrangement (call or email to set up a time).

Telephone: (352) 273-3601 (main office out at Fisheries)

E-mail: dmurie@ufl.edu

Course Description:

Fish biology, ecology, and habitats relevant to sustainable fisheries on both a global and regional (Florida) scale. Follows the fisheries occurring from cold, mountain rivers to the depths of the ocean, with a focus on resource use. Special topics are covered along this aquatic highway, including invasive species, aquaculture, dams and reservoirs, artificial reefs, fisheries bycatch, climate change, and marine protected areas. Intended for non-science and science majors.

This is a General Education course (3 credits of Biological Sciences).

Prerequisites: none.

Course Outcomes:

On completion of this course, students should be able to:

- Discuss and explain general fish biology and basic fisheries concepts with both non-scientists and fisheries professionals alike
- Compare and contrast fish biology, fish habitats, and fisheries that occur in freshwater, estuarine, and marine waters on a regional, national, and global scale
- Understand the processes of large-scale weather patterns, such as El Nino, in relation to fisheries and food webs
- Discuss the basic principles of fisheries sustainability and management options used in regulating fisheries

Course Communication:

Course information will be posted on Canvas (http://elearning.ufl.edu) and will allow you day-to-day access to lecture outlines and your grades.

FAS 2024: Sustainable Fisheries

Course Format:

This course is offered for three (3) credits every Spring semester. It consists of three hours of lecture each week and the course meets the requirements for Biology (B) under the general education guidelines.

Lectures are based on PowerPoint presentations to facilitate the use of visual representation of fishes, habitats, and fisheries. PowerPoint outlines of lecture topics will be posted to Canvas and should be printed out prior to class. It will be your responsibility to take notes to accompany these outlines and to get lecture notes from a classmate if you miss any lectures.

Overall, please conduct yourself in a professional manner and give consideration to your fellow classmates. Please do not use electronic devices (e.g., cell phones, computers, iPads) to perform activities (e.g., texting, Facebook, web surfacing) that can distract your neighbors or interrupt the class. The instructor reserves the right to request that you leave if you engage in distractive behavior.

Course Assessments:

Exams: Lecture exams will be based on material given during class lectures. Supplemental readings from the recommended textbook (Fish: An enthusiast's guide by Peter Moyle) will aid in understanding this material. Exam questions may include multiple-choice, matching, true/false, brief explanations, short answers, and paragraphs.

Exams will be given on a quarterly basis. Quarterly exam material is not generally cumulative unless specifically indicated in later lectures. The final grade will be calculated in part based on the final quarterly exam (Quarterly Exam D), which everyone must take (25% of final grade), and the best two out of three of Quarterly Exams A, B, or C (25 % x 2 = 50% of final grade).

Project: For the project, you will choose a fish species that is harvested (either freshwater or marine) and combine sources of information about this fish into your project. You will need to provide information on: 1) the biology of the harvested fish species; 2) the distribution and habitat of the fish; and 3) its fishery and management. Your project can be put together as a narrated PowerPoint, a poster, a poem, a music video, a children's book, a cooking show, or whatever drives you creatively while pushing your critical thinking! Projects must be done in groups of 2 or 3 students; I will facilitate you finding project members with an interest in the same species. The project will be graded based on both required content and effective presentation. Projects will be uploaded and available for viewing online and you will provide anonymous, peer evaluations of at least three of the

projects. Further information and a grading rubric will be provided during the course. (15% of final grade).

In-class Quizzes: To grasp the comparative aspect of the course, which is based on visiting different habitats and fisheries along an aquatic highway, it is important that you consistently attend lectures. To facilitate this, you will be given in-class quizzes on a random basis throughout the course. These quizzes will consist of 2-4 questions (multiple choice, fill in the blank, short answer) that will be handed out at the beginning of the lecture, answered during the lecture, and handed in at the end of the lecture. The best 10 of 15 quizzes given during the course will count towards 10% of your final grade.

Grade assignments are based on the following: A (93-100%), A- (90-92.9), B^+ (86-89.9%), B (82-85.9%), B- (78-81.9%), C^+ (74-77.9%), C (67-73.9%), C- (63-66.9%),D^+ (59-62.9%), D (55-58.9%), D- (51-54.9%), and E (<50.9%), and will be comprised of:

Activity	Percent of Final Grade	Notes
Quarterly Exam A	25	Lowest of Exam A, B, or C will be dropped
Quarterly Exam B	25	
Quarterly Exam C	25	
Quarterly Exam D	25	
Project	15	
In-class quizzes	10	
Total	**100**	

Recommended Text (Not required):

Moyle, Peter B. 1995 (paperback). Fish: An enthusiast's guide. University of California Press, Berkeley, CA. 272 pp.

Academic Honesty:

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You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida,

the following pledge is either required or implied: *"On my honor, I have neither given nor received unauthorized aid in doing this assignment."* It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For more information regarding the Student Honor Code, please see: http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code.

Accommodating Students with Disabilities:

Students requesting accommodation for disabilities must first register with the Dean of Students Office (http://www.dso.ufl.edu/drc/). The Dean of Students Office will provide documentation to the student who must then provide this documentation to the instructor when requesting accommodation. You must submit this documentation prior to submitting assignments. Accommodations are not retroactive, therefore, students should contact the office as soon as possible in the term for which they are seeking accommodations.

UF Student Life, Wellness, and Counseling Help

Resources are available on-campus for students having personal problems or lacking clear career and academic goals which interfere with their academic performance. These resources include:

- Counseling and Wellness resources http://www.counseling.ufl.edu/cwc/
- U Matter, We Care http://www.umatter.ufl.edu/
- Career Resource Center http://www.crc.ufl.edu/

Software Use:

All faculty, staff and students of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate.

FAS 2024 Sustainable Fisheries: Spring 2019

DATE	DAY	Lecture #	LECTURE TOPIC	INSTRUCTOR	PAGES IN TEXT
7-Jan	M	1	Introduction to course/schedule/grading	Dr. Debra Murie	
Part I. Tools of the Trade					
9-Jan	W	2	What is a fishery? What is a fish stock? Range and diversity of fishes; Basic external features of fishes	Dr. Debra Murie	1-34, 65-98
11-Jan	F	3	Basic external features of fishes; Feeding	Dr. Debra Murie	13-34
14-Jan	M	4	Feeding lifestyles	Dr. Debra Murie	5, 35-46, 61-62
16-Jan	W	5	Fish and their senses	Dr. Debra Murie	1-3, 25-26, 63-64
18-Jan	F	6	Breathing in water and air; internal water balance	Dr. Debra Murie	5, 35-46
21-Jan	**M**		**Martin Luther King Jr. Day: No class**		
23-Jan	W	7	Muscles; swimming and buoyancy; catch and release mortality	Dr. Debra Murie	42-44
25-Jan	F	8	Reproduction and reproductive lifestyles	Dr. Debra Murie	35-46, 54-61
28-Jan	M	9	Reproduction and reproductive lifestyles/Age and growth	Dr. Debra Murie	33, 35-46, 54-61
30-Jan	W	10	Age and growth	Dr. Debra Murie	33
1-Feb	F	11	Migration and stocks without borders	Dr. Debra Murie	49-52, 206-209
4-Feb	**M**		**QUARTERLY EXAM A**	Dr. Debra Murie	
6-Feb	W	12	Catching fish: gear and fish behavior	Dr. Debra Murie	
8-Feb	F	13	What happens to a fish stock when you fish it?	Dr. Debra Murie	
Part II. The Aquatic Highway: Fish, Habitats, and Fisheries					
11-Feb	M	14	Environmental factors and fish distribution and abundance	Dr. Debra Murie	99-115
13-Feb	W	15	Coldwater fisheries in streams and rivers	Dr. Debra Murie	116-129
15-Feb	F	16	Warmwater fisheries in streams, rivers, lakes and ponds	Dr. Chuck Cichra	116-162
18-Feb	M	17	Warmwater fisheries in ponds and lakes	Dr. Chuck Cichra	116-162
20-Feb	W	18	Eutrophication or "What's that green stuff in the water?"	Dr. Chuck Cichra	116-162
22-Feb	F	19	Florida Bass Fisheries	Drew Dutterer (FWC)	
25-Feb	M	20	Invasive Aquatics	Dr. Jeff Hill	
27-Feb	**W**		**QUARTERLY EXAM B**	**Dr. Debra Murie**	
1-Mar	F	21	Fisheries Projects (No formal lecture, but Dr. Murie will be there if you need help with any aspect of your project)	Dr. Debra Murie	
4-8 March			**Spring Break: No classes**		
11-Mar	M	22	The good and the bad about dams and fisheries (***online lecture***)	Dr. Debra Murie	
13-Mar	W	23	Aquaculture: The big picture	Dr. Frank Chapman	
15-Mar	F	24	Importance of aquaculture	Dr. Frank Chapman	
18-Mar	M	25	Aquaculture practices	Dr. Frank Chapman	
20-Mar	W	26	Coastal habitats important to fisheries: Estuaries as nurseries	Dr. Debra Murie	163-171, 179-183
22-Mar	F	27	Coastal habitats and fisheries: Salt Marshes and Mangroves	Dr. Debra Murie	182-183, 191-192
25-Mar	M	28	Coastal habitats and fisheries: Seagrasses	Dr. Debra Murie	182-183, 191-192
27-Mar	W	29	Coastal habitats and fisheries: Rocky Intertidal and Kelp Forests	Dr. Debra Murie	173-179, 184-189
29-Mar	F	30	Artificial reefs	Dr. Bill Lindberg	
1-Apr	M	31	Coastal habitats:Coral reef fisheries	Dr. Debra Murie	186-188, 197-210
3-Apr	**W**		**QUARTERLY EXAM C**	**Dr. Debra Murie**	
5-Apr	F	32	Coastal habitats: Coastal temperate reef fisheries	Dr. Debra Murie	186-188, 197-210
8-Apr	M	33	Fisheries production and large-scale climate events: EL Niño	Dr. Debra Murie	192-195
10-Apr	W	34	Fisheries of the continental shelf and slope (Pelagic)	Dr. Debra Murie	192-195
10-Apr	**W**		**Fisheries Project due no later than 5 pm (uploaded to project site)**		
12-Apr	F	35	Fisheries of the continental shelf and slope (Pelagic/Demersal)	Dr. Debra Murie	
15-Apr	M	36	Fisheries of the continental shelf and slope (Demersal) and bycatch	Dr. Debra Murie	192-195
17-Apr	W	37	Fisheries bycatch; Marine Protected Areas (MPAs) as a fisheries tool	Dr. Debra Murie	
19-Apr	F	38	Climate Change/Global Warming and Fisheries	Dr. Debra Murie	
22-Apr	M	39	Sustainable Fisheries Wrap-up Discussion and Review	Dr. Debra Murie	
24-Apr	**W**		**QUARTERLY EXAM D*** **	**Dr. Debra Murie**	
Lecture schedule subject to change; *** Alternatively, Quarterly Exam D can be taken during finals week on 30 April (10-11 am)					

(10)

Cover Sheet: Request 13523

Name change of MCB 4782

Info

Process	Course|Modify|Ugrad/Pro
Status	Pending at CALS - College of Agricultural and Life Sciences
Submitter	Monika Oli moli@ufl.edu
Created	1/15/2019 12:55:43 PM
Updated	1/23/2019 12:21:58 PM
Description of request	Name change of MCB 4782 from Archaea and Biotechnology to Extremophiles

Actions

Step	Status	Group	User	Comment	Updated
Department	Approved	CALS - Microbiology and Cell Science 514910000	Eric Triplett		1/23/2019
No document changes					
College	Pending	CALS - College of Agricultural and Life Sciences			1/23/2019
No document changes					
University Curriculum Committee					
No document changes					
Statewide Course Numbering System					
No document changes					
Office of the Registrar					
No document changes					
Student Academic Support System					
No document changes					
Catalog					
No document changes					
College Notified					
No document changes					

Course|Modify for request 13523

Info

Request: Name change of MCB 4782
Description of request: Name change of MCB 4782 from Archaea and Biotechnology to Extremophiles
Submitter: Monika Oli moli@ufl.edu
Created: 1/15/2019 12:28:12 PM
Form version: 1

Responses

Current Prefix MCB
Course Level 4
Number 782
Lab Code None
Course Title Archaea and Biotechnology
Effective Term Fall
Effective Year 2019
Requested Action Other (selecting this option opens additional form fields below)
Change Course Prefix? No

Change Course Level? No

Change Course Number? No

Change Lab Code? No

Change Course Title? Yes
Current Course Title Archaea and Biotechnology
Proposed Course Title Extremophiles
Change Transcript Title? Yes
Current Transcript Title ARCHAEABIOTECHNOLOGY
Proposed Transcript Title (21 char. max) Extremophiles
Change Credit Hours? No

Change Variable Credit? No

Change S/U Only? No

Change Contact Type? No

Change Rotating Topic Designation? No

Change Repeatable Credit? No

Maximum Repeatable Credits 0
Change Course Description? Yes
Current Course Description Learn about the evolution, physiology, and molecular biology of Archaea, including extremophiles. Examine principles of energy production and biosynthesis in aerobic and anaerobic habitats and explore research that incorporates cutting-edge techniques and biotechnology applications for using archaea to solve real world problems.

Proposed Course Description (50 words max) Students will learn about the evolution, physiology, biochemistry and molecular biology of extremophiles with emphasis on archaea and their viruses. Principles of energy metabolism at the limits of life will be discussed. Research that incorporates cutting-edge techniques and biotechnology applications for using extremophiles to solve real world problems is highlighted.
Change Prerequisites? No

Change Co-requisites? No

Rationale The course has very low enrollment and students are not interested in the topic as conveyed by the title of the class (as per personal communication with students). Changing the name of the course will attract more students to take it.

Cover Sheet: Request 13572

PEN2138 Advanced SCUBA Diving

Info

Process	Course|Modify|Ugrad/Pro
Status	Pending at CALS - College of Agricultural and Life Sciences
Submitter	Scott Sager sasager@ufl.edu
Created	2/3/2019 1:03:39 PM
Updated	2/4/2019 11:30:58 AM
Description of request	Update course two three credits, change course description, etc.

Actions

Step	Status	Group	User	Comment	Updated
Department	Approved	CALS - Forest Resources and Conservation 514946000	Terrell Baker III		2/4/2019
syllabus_PEN2138 Advanced SCUBA Diving.docx					2/3/2019
College	Pending	CALS - College of Agricultural and Life Sciences			2/4/2019
No document changes					
University Curriculum Committee					
No document changes					
Statewide Course Numbering System					
No document changes					
Office of the Registrar					
No document changes					
Student Academic Support System					
No document changes					
Catalog					
No document changes					
College Notified					
No document changes					

Course|Modify for request 13572

Info

Request: PEN2138 Advanced SCUBA Diving
Description of request: Update course two three credits, change course description, etc.
Submitter: Scott Sager sasager@ufl.edu
Created: 2/3/2019 12:52:33 PM
Form version: 1

Responses

Current Prefix PEN
Course Level 2
Number 138
Lab Code None
Course Title Advanced SCUBA Diving
Effective Term Earliest Available
Effective Year Earliest Available
Requested Action Other (selecting this option opens additional form fields below)
Change Course Prefix? No

Change Course Level? No

Change Course Number? No

Change Lab Code? Yes
Current Lab Code None
Proposed Lab Code C
Change Course Title? No

Change Transcript Title? No

Change Credit Hours? Yes
Current Credit Hours 2
Proposed Credit Hours 3
Change Variable Credit? No

Change S/U Only? No

Change Contact Type? No

Change Rotating Topic Designation? No

Change Repeatable Credit? No

Maximum Repeatable Credits 3
Change Course Description? Yes
Current Course Description Underwater navigation for night, low visibility, current, river and deep diving. Includes site evaluation, dive planning, equipment, medical aspects and search and recovery. Payment of required additional course fees and successful completion results in certification as advanced scuba diver. Six open water field trip dives are required.
Proposed Course Description (50 words max) Course provides advanced SCUBA training. Topics include physics, physiology, decompression, and oceanography/ecology. Pool sessions cover rescue,

double cylinders, full facemasks, night/limited visibility techniques, search, recovery, salvage techniques, and underwater task loading. Completion results in NAUI certification in Advanced SCUBA, Enriched Air Nitrox, SCUBA Rescue, First Aid, CPR, and Oxygen Provider.
Change Prerequisites? No

Change Co-requisites? No

Rationale Course was historically "owned" by the College of Health and Human Performance, but not offered... the course material was offered as an FAS4932 for three credits. In 2015 the course was transferred from CHHP to CALS-SFRC, but was a two-credit version. This request increases the number of credits, updates the course description, etc. The course material has been offered through SFRC-FAS for over two decades.

PEN2138C *Advanced SCUBA Diving*

3 Credits

Spring 2018

Course Description

Course provides advanced SCUBA training. Topics include physics, physiology, decompression, and oceanography/ecology. Pool sessions cover rescue, double cylinders, full facemasks, night/limited visibility techniques, search, recovery, salvage techniques, and underwater task loading. Completion results in NAUI certification in Advanced SCUBA, Enriched Air Nitrox, SCUBA Rescue, First Aid, CPR, and Oxygen Provider.

Instructors and Qualifications

Doug Marcinek, *Instructor, UF Science Diver Development Program Coordinator*

marcinek@ufl.edu - 352.273.3626 - Available by appointment

NAUI Course Director & Technical Instructor - IANTD Technical Instructor

Larry Meyer, *Instructor*

lawrence.meyer@ufl.edu - 904.646.7951 - Available through Canvas

NAUI Instructor

Cheryl Thacker, *UF Dive Safety Officer & Instructor*

cthacker@ehs.ufl.edu - 352.392.1661 – Available by appointment

NAUI Course Director, UF Dive Safety Officer

Objectives

Upon successful completion of this course, each student will:

- Apply the science and technology applicable to SCUBA to diving.
- Develop and safely execute complex SCUBA dives.
- Describe advanced SCUBA techniques such as open water diving, night diving,

limited visibility diving, and deep dives.

Course Meeting Times and Locations

Lecture Location: Online or on Wednesdays, periods 11-E1 (6:15-8:10 p.m.) Room TBD. Weeks 2, 3 and 4 will meet at the Environmental Health & Safety Office, 3051 Longleaf Road for 1st aid, CPR and 02 Administration instructional and practice rotations.

Lab Location: Every week at the Florida Pool on Thursdays, periods E1-E2 (7:20-9:10 p.m.)

Open water training dives will be held over three weekends during the semester. Two weekends will involve dives in local area springs. The third weekend will involve travel to Pompano Beach for ocean/boat dives.

Required Texts / Readings / Equipment

(Package options are available for purchase)

1. NOAA Diving Manual, 5th edition (available through UF Scientific Diving Program)

https://www.bestpub.com/books/product/noaa-diving-manual-5th-edition-softcover-textbook.html

2. NAUI Air Table

3. Mask, Snorkel, Fins and neoprene dive booties, and Weight Belt (by 1st week of pool)

4. Watch – Water resistant to 50 meters (required by 2nd week of pool)

Suggested: http://www.freestyleusa.com/shark.html

5. Dive Slate w/Pencil (required by 2nd week of pool)

Suggested: https://www.divegearexpress.com/slates

6. Line Cutting Device (required by pool session 4)

Suggested: https://www.divegearexpress.com/cutting-tools

10. Dive light (required by pool session 4)

Suggested: https://www.divegearexpress.com/dgx-600-handheld-light

11. Surface Marker Buoy (required by pool session 4)

Suggested: https://www.divegearexpress.com/dive-rite-5-ft-15-m-surface-marking-tube-w-built-in-sleeve

12. Reel/Spool (required by pool session 4)

Suggested: https://www.divegearexpress.com/dgx-deco-reel-x-large-s-s-snap

https://www.divegearexpress.com/dr-plastic-finger-spool-small-50-ft-15-m-white-line-s-s-snap-2986

12. Gear bag

Class Format and Policies Attendance Policy

Requirements for class attendance and make-up exams, assignments and other work are consistent with university policies that can be found at: https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx.

Prerequisites to Participation in Advanced Open Water SCUBA

Students must already hold a Basic Open Water SCUBA certification from a recognized certification agency. **Students must bring a copy of their certification card(s) (both front and back) to the first class for inclusion in their student records folder.** Students must bring their SCUBA logbooks for review of recent diving activity.

Skills Evaluation

The first lab session will consist of a swim and skills evaluation and completion of a medical history questionnaire. Students must successfully complete the swim evaluation and not have any medical contraindications to participation in SCUBA activities in order to continue in the course.

The swim evaluation consists of the following and must be successfully completed:

- Swim 400 yards using 4 different strokes- crawl, side, back, and breast.
- 25 yard underwater swim in one breath.
- Tow another swimmer 25 yards without swim aids.
- Tread water for 10 minutes with the last two minutes keeping hands out of water.

- The diving medical history questionnaire and information on contraindications to participation in SCUBA diving activities can be found at: http://www.naui.org/PDFfiles/Commonly%20Used%20Forms/NAUI%20Medical%20Evaluation%2 0and%20Physician%20Approval%20Form.pdf

The basic SCUBA skills evaluation consists of the following and is used to gauge the student's basic SCUBA competency:

- Correctly assemble SCUBA equipment.
- Giant stride entry into the water and establishment of neutral buoyancy.
- Removal, replacement and clearing of mask.
- Removal, recovery, and clearing of the primary second stage regulator.
- Removal and replacement of the SCUBA unit while underwater (doff-n-don).
- Alternate Air Share with ascent.
- Obtain and maintain neutral buoyancy.
- Buddy breathing (Instruction is provide followed by student practice).
- Proper exit from the water and break-down of SCUBA equipment.

On the first open water checkout dive a SCUBA competency evaluation will take place. The competency evaluation consists of the following and must be completed successfully prior to additional open water training dives:

- Proper gear assembly and entry.
- Mask removal/replace and clearing.
- Regulator, recovery, and clearing of the primary second stage regulator.
- Controlled Emergency Swimming Ascent (ESA)
- Neutral buoyancy
- Alternate Air Share with ascent as both a donor and receiver
- Doff-n-Don of SCUBA rig on surface

- Buddy Breathing (stationary)

SCUBA Knowledge Evaluation

Students will be assigned the standard NAUI Open Water Diver Examination through eLearning in order to assess their level of basic SCUBA knowledge. As different training agencies have different standards, the sole purpose of the assignment is to gauge the depth of student knowledge. Lecture material presented throughout the course may be modified to remediate topic areas as determined based on the results of the exam.

Course Fee

Advanced Course Fee: $750, includes Advanced, Rescue, Nitrox and DEMP certifications. Due dates will be announced in class. An additional **$50 per week late fee** will be assessed for any fees paid after that date. **Failure to pay ALL course fees will result in non- certification and student records being flagged.** Payment Information including links will be provided in class. Make sure that you pay for the proper course number. VISA, Mastercard, and American Express are accepted. **Bright Futures will not cover this fee.** Included in the fee:

- NAUI certified instructors for all water activity
- If earned, NAUI certification fees and certification cards
- Open Water site entrance fees and boat fees
- Use of UF SCUBA Equipment (tank, regulator, BCD) for all water activity.

Certification

In order to be eligible for certification students must:

- Attend all lecture and pool sessions unless excused.
- Score >80% on all examinations and be coached up to 100% to the satisfaction of your instructor.
- Be coached up to 100% on the decompression portions of all quizzes and exams to the satisfaction of your instructor.
- Complete the class with a minimum overall grade of 80%.

- Score >80% on all skill evaluations.
- Pay all fees.
- Successfully complete all open water proficiency dives.
- Be recommended by your instructor as a safe and competent diver. "Training is purchased, certification is earned." Payment of all course fees does not guarantee that you will earn certification in this course. Students who do not achieve the requisite level of competency or who exhibit unsafe behaviors and attitudes that could put themselves or others at risk of injury will not be certified.

SCUBA Equipment provided for the lab and open water dives

- Regulator with Safe Second, Pressure Gauge, and LP Inflator Hose
- Buoyancy Control Device
- Underwater Compass
- SCUBA cylinders and safe breathing air or nitrox

Equipment Notes:

You will be provided an Equipment Standards of Care form which you will be required to sign. This form outlines the care we expect you to take when using the University of Florida SCUBA equipment, as well as fees assessed for required repair or replacement of equipment resulting from misuse or neglect.

If you own your own regulator, BCD, and/or wet suit, you are more than welcome to use it for the class after it has been examined and deemed appropriate for use by a staff instructor.

Students will need to provide the appropriate thermal protection (wetsuit) for the open water dives. Additionally, the air temperature may be cool during pool sessions and open water dives so, bring appropriate protection from the elements.

Lecture

Lecture will be conducted online or in-person on Wednesdays from 6:15p.m. to 8:10p.m. Lecture material will follow the schedule posted in the online course. Quizzes will cover lecture and reading material. Homework turned in late will receive a points-deduction at the discretion of the instructor and must be turned in

or will result in loss of points toward final grade and may result in non-certification. Additionally, guest experts will present lectures during some classroom sessions.

Lab

Pool sessions will be held on Thursdays at the Florida Pool from 7:20p.m. until 9:10p.m. Pool sessions will follow the schedule posted below in the "Schedule of Class Topics", but are subject to change due to weather and course modifications. Attendance is mandatory.

Cell Phones

Cell phones are to be turned off during all class periods. Cell phone use, including texting, will not be tolerated. Students using cell phones during class may be asked to leave and they will be marked as having an unexcused absence.

Grading

This is an academic course. You will earn 3 credit hours by completing this course. Your academic grade will be based on a point system with a perfect score requiring 1000 points. The number of points you may earn:

Participation –200 points (successful completion of the pre-assessment exam, active involvement in all activities, positive attitude during dive activities, and related)

Examinations –250 points (pre-exam, DEMP Course, Rescue Diver exam, Nitrox exam, Advanced Course exam)

Quizzes/Discussions/Article Reviews – 250 points

Skill Evaluations –300 points

Grading Scale:

1000-900 points	A
899-870 points	B+
869-800 points	B
799-770 points	C+
769-700 points	C
699-670 points	D+
669-600 points	D
599-0 points	E

Examinations: The pre-assessment exam is worth 50 points and is marked as either complete or incomplete. The DEMP, rescue diver, nitrox diver, and final exam are worth 50 points each, and are scored based on correct and incorrect answers.

Assignments submitted after the due date will be docked 10%.

Skill Evaluations: The skill evaluations are worth up to 300 points.

For information on current UF policies for assigning grade points, see https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx

Schedule of Class Topics

Week	Topic	Pool	Readings
1	Introduction	Skills	
2	Emergency Medical Care	Skills/Swim test	Chapter 19
3	Emergency Medical Care (EMC) (con.)	Skills Basic Rescue	Chapter 17 & 18 Appendix G
4	EMC Practicals Accident Management	Basic Rescue	
5	Physics	Advanced Rescue	Chapter 3
6	Physiology	Rescue Scenarios	Chapter 4
7	Decompression	Rescue Scenarios	Chapter 5, 11, & 20
8	Nitrox	Rotations	Chapter 7 Appendix A
9	Equipment	Rotations	Chapter 1 & 2 Appendix E
10	Physical Dive Environment	Rotations	Chapter 15
11	Biological Dive Environment	Rotations	Chapter 9
12	Search & Salvage	Rotations	Chapter 13.1 & 13.7
13	Science Diving	Rotations	Chapter 12
14	Special Topics	Rotations	TBD
14	Special Topics	Rotations	TBD
15	Special Topics	Skills make up	TBD

The above lecture schedule of topics may be adjusted due to the availability of guest

lecturers and scheduling of open water dives to insure needed topics are covered prior to those dives i.e. nitrox lecture falls before nitrox dives.

Additional References

UF SCUBA Web Site; UF Diving Science and Safety Program Web-Site; NAUI Web Site; Diver's Alert Network Web Site

http://www.scuba.ufl.edu

http://www.ehs.ufl.edu/Dive

http://www.naui.org

http://www.dan.org

Online Course Evaluation Process

Student assessment of instruction is an important part of efforts to improve teaching and learning. At the end of the semester, students are expected to provide feedback on the quality of instruction in this course using a standard set of university and college criteria. These evaluations are conducted online at https://evaluations.ufl.edu. Evaluations are typically open for students to complete during the last two or three weeks of the semester; students will be notified of the specific times when they are open. Summary results of these assessments are available to students at https://evaluations.ufl.edu/results.

Academic Honesty

As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge: "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity." You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment."

It is assumed that you will complete all work independently in each course unless the instructor provides explicit permission for you to collaborate on course tasks (e.g. assignments, papers, quizzes, exams). Furthermore, as part of your obligation to uphold the Honor Code, you should report any condition that facilitates academic misconduct to appropriate personnel. It is your individual responsibility to know

and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For more information regarding the Student Honor Code, please see: http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code.

Software Use

All faculty, staff and students of the university are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against university policies and rules, disciplinary action will be taken as appropriate.

Services for Students with Disabilities

The Disability Resource Center coordinates the needed accommodations of students with disabilities. This includes registering disabilities, recommending academic accommodations within the classroom, accessing special adaptive computer equipment, providing interpretation services and mediating faculty-student disability related issues. Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation

0001 Reid Hall, 352-392-8565, www.dso.ufl.edu/drc/

Campus Helping Resources

Students experiencing crises or personal problems that interfere with their general well-being are encouraged to utilize the university's counseling resources. The Counseling & Wellness Center provides confidential counseling services at no cost for currently enrolled students. Resources are available on campus for students having personal problems or lacking clear career or academic goals, which interfere with their academic performance.

- University Counseling & Wellness Center, 3190 Radio Road, 352-392-1575, www.counseling.ufl.edu

  Counseling Services

  Groups and Workshops

  Outreach and Consultation

Self-Help Library

Wellness Coaching

- U Matter We Care, www.umatter.ufl.edu/

- Career Connections Center, First Floor JWRU, 392-1601, https://career.ufl.edu/.

Student Complaints

- Residential Course: https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/.

(12)

Cover Sheet: Request 12696

Weed Science Certificate

Info

Process	Certificate|New|Grad|Revised
Status	Pending at CALS - College of Agricultural and Life Sciences
Submitter	Theresa Martin tmoore72@ufl.edu
Created	5/15/2018 2:53:54 PM
Updated	2/6/2019 2:49:17 PM
Description of request	This request is to initiate the establishment of a weed science graduate certificate. There are courses listed that will require permanent course numbers, and that is currently being addressed. These have been submitted and approved by CALS curriculum committee (one pending some minor modifications), and are at the UCC committee level. Additionally, course use approvals will be obtained and added to the request when they are finalized. Thank you.

Actions

Step	Status	Group	User	Comment	Updated
Department	Approved	CALS - Agronomy 514908000	Diane Rowland		1/22/2019
No document changes					
College	Pending	CALS - College of Agricultural and Life Sciences			1/22/2019
No document changes					
OIPR					
No document changes					
Graduate Council					
No document changes					
Graduate School Notified					
No document changes					
University Curriculum Committee Notified					
No document changes					
Office of the Registrar					
No document changes					
OIPR Notified					
No document changes					
Academic Assessment Committee Notified					
No document changes					

Certificate|New for request 12696

Info

Request: Weed Science Certificate
Description of request: This request is to initiate the establishment of a weed science graduate certificate.

There are courses listed that will require permanent course numbers, and that is currently being addressed. These have been submitted and approved by CALS curriculum committee (one pending some minor modifications), and are at the UCC committee level.

Additionally, course use approvals will be obtained and added to the request when they are finalized.

Thank you.
Submitter: Theresa Martin tmoore72@ufl.edu
Created: 2/6/2019 2:59:43 PM
Form version: 6

Responses

Certificate Name Weed Science
Transcript Title Weed Science
Credits 9-11
Level Graduate
CIP Code 01.1102
Degree Program Agronomy
Effective Term Earliest Available
Effective Year Earliest Available
Certificate Description The certificate in Weed Science is designed to assist agricultural and natural resource managers in making effective and environmentally responsible management decisions for nuisance plants. This program will train both managers and practitioners on the interrelations of weed ecology and weedy plant interactions, management techniques, and environmental considerations.
Requirements for Admission Students must have an earned Bachelor of Science degree from a regionally accredited institution or equivalent. Previous coursework requirements: PLS 4601 Principles of Weed Science or similar weed identification course, and one additional plant science, ecology, entomology, or soil and water science course. All the courses are taught in English. Hence reading and writing knowledge of English language is required.
Requirements for Completion Core Course:
PLS 5632C (3 credits) - Integrated Weed Management

Choose any two of the following:

IPM 5305 (3 credits) - Principles of Pesticides
PLS 6655 (3 credits) - Plant/Herbicide Interaction
HOS6070 (3 credits) - Plant Material for Conservation and Restoration
PLS5XXX (3 credits) - Aquatic Plant Management (currently 6932, but permanent course number is pending)
PLS5XXX (3 credits) - Upland Invasive Plant Management (currently 6932, but permanent course number is pending)
Rationale and Place in Curriculum The importance of environmentally responsible management of noxious and invasive plants in both agricultural and natural area settings has become increasingly significant over the past 10-20 years. Currently, these responsibilities are occurring across many public (Forest Service, Dept of Natural Resources, Fish and Game Commission, etc.) and private entities. But many of the individuals tasked with these management responsibilities have had no formal, science-based training in weed management. The purpose of this certificate is to provide individuals with the training to understand how weed management techniques and the environment should be integrated into an overall management plan.

There is no overlap with existing certificates or programs.

Student Learning Outcomes SLO1: Students will gain an understanding of the diverse ways that weeds impact agricultural production and natural resources management.
SLO2: Students will learn environmentally responsible ways to manage troublesome plants.
SLO3: Students will learn the legality of pesticide use and the necessity of compliance monitoring.

Assessment:
Students will complete an on-line examination covering the content of the courses taken in the certificate program. A minimum of 10 questions from each course will be presented to students to test their competency for the SLO's associated with the courses. Students will be required to score a minimum of 75% correct to pass the exam that is required to receive the certificate. The exam may be taken multiple times if necessary.

From: Kopsell,Dean A
To: Martin,Theresa M
Subject: RE: Course Use Approval
Date: Wednesday, February 6, 2019 1:23:29 PM

Theresa,

You have my approval to use the course in your new graduate certificate program. I hope it provides the students with what they need.

Thank you for asking.

Best,
Dean Kopsell

Dean A. Kopsell, *Professor and Chair*
Environmental Horticulture Department | University of Florida
1545 Fifield Hall | PO Box 110670 | Gainesville, FL 32611-0670
Direct: (352) 294-3059 | Main Office: (352) 392-1831 | Office Fax: (352) 392-3870
Email: dean.kopsell@ufl.edu

UF IFAS
UNIVERSITY of FLORIDA

ENVIRONMENTAL HORTICULTURE

From: Martin,Theresa M <tmoore72@ufl.edu>
Sent: Wednesday, February 06, 2019 1:20 PM
To: Kopsell,Dean A <dean.kopsell@ufl.edu>
Subject: FW: Course Use Approval

Hi Dr. Kopsell:

Can you please provide your approval for the use of this course? I've verified with the instructor when the course is taught and the formal name the course.

Thanks.

Theresa

AGRONOMY DEPARTMENT

Theresa Martin | Manager of Operations | UF/IFAS Agronomy Department
G052A McCarty D, Box 110500 Gainesville, FL 32611 | 352-294-1590 | Fax: 352-392-1840 | tmoore72@ufl.edu

From: Chase,Christine D <cdchase@ufl.edu>
Sent: Tuesday, January 22, 2019 12:15 PM
To: Martin,Theresa M <tmoore72@ufl.edu>
Cc: Kopsell,Dean A <dean.kopsell@ufl.edu>
Subject: Re: Course Use Approval

Dear Theresa

This approval should come from Dr. Kopsell, Chair of Environmental Horticulture. I have copied him in.

Best,

Chris

Christine D. Chase
Professor and Interim Chair
Horticultural Sciences Department
University of Florida
Gainesville, FL 32611-0690
352-273-4862 office
352-316-0186 mobile
352-392-1928 dept office

From: Martin,Theresa M
Sent: Tuesday, January 22, 2019 12:01 PM
To: Chase,Christine D
Subject: Course Use Approval

Dr. Chase,

Our faculty are in the process of establishing a new graduate certificate program in aquatic and natural area weed management. They have listed HOS6070 Plant Material for Restoration as a course option for students to choose. The faculty leading this certificate effort feel that it would be a great course for land managers interested in restoration.

This course is taught by Dr. Carrie Adams.

Please provide your approval for use of this course for our certificate.

Thank you.

Theresa

AGRONOMY DEPARTMENT

Theresa Martin | Manager of Operations | UF/IFAS Agronomy Department
G052A McCarty D, Box 110500 Gainesville, FL 32611 | 352-294-1590 | Fax: 352-392-1840 | tmoore72@ufl.edu

Cover Sheet: Request 13588

AOM

Info

Process	Major Curriculum|Modify|Ugrad/Pro
Status	Pending at CALS - College of Agricultural and Life Sciences
Submitter	Wendell Porter waporter@ufl.edu
Created	2/6/2019 2:23:37 PM
Updated	2/6/2019 2:25:45 PM
Description of request	Three changes to existing course requirements are proposed. There are additional changes to the Transfer Guide.

Actions

Step	Status	Group	User	Comment	Updated
Department	Approved	CALS - Agricullural Operations Management 514907001	Wendell Porter		2/6/2019
CALS Curriculum Changes 2019.doc AOM2018-2019 (005).docx CALS Transfer Guide 2019-Proposed changes for AOM (002).docx					2/6/2019 2/6/2019 2/6/2019
College	Pending	CALS - College of Agricultural and Life Sciences			2/6/2019
No document changes					
Associate Provost for Undergraduate Affairs					
No document changes					
University Curriculum Committee					
No document changes					
Office of the Registrar					
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					

Major|Modify_Curriculum for request 13588

Info

Request: AOM
Description of request: Three changes to existing course requirements are proposed. There are additional changes to the Transfer Guide.
Submitter: Wendell Porter waporter@ufl.edu
Created: 2/6/2019 2:12:57 PM
Form version: 1

Responses

Major Name Agricultural Operations Management
Major Code AOM
Degree Program Name Agricultural Operations Management
Undergraduate Innovation Academy Program No
Effective Term Earliest Available
Effective Year Earliest Available
Current Curriculum for Major Curriculum with current and changes is included in the attached documentation
Proposed Curriculum Changes Several courses will be deleted and new courses added that will support additional technical capabilities of our students. Details are in attached letter.
Pedagogical Rationale/Justification We reviewed our entire program and included input from our industry advisory group to help support a better foundation in two key areas of our program: precision agriculture and food security. Additional details in attached documentation.
Impact on Enrollment, Retention, Graduation These changes will affect new students as requirements and current students only as options if desired.
Assessment Data Review These changes will not add or detract to our current SLO's at this time.
Academic Learning Compact and Academic Assessment Plan No changes are planned

UF UNIVERSITY of FLORIDA

Institute of Food and Agricultural Sciences
Agricultural and Biological Engineering Department

Wendell A. Porter
Frazier Rogers Hall
PO Box110570
Gainesville, FL 32611-0570
352-294-6706
352-392-4092Fax
Website: www.abe.ufl.edu
E-mail: waporter@ufl.edu

February 6, 2019

Dear CALS Curriculum Committee,

The AOM program has undertaken a formal review of the entire program. This review has incorporated input from industry partners, AOM alumni, internal and external faculty. We are planning a number of changes to the AOM curriculum to better reflect the needs of both the students and industry in the future. The first series of planned changes have been reviewed by AOM faculty, the department curriculum committee and the department Chair. These changes are:

1. Delete PSY2012, Introduction to Psychology and replace with one of: CGS1100, CGS1101 or CGS2531. It was almost a universal agreement that our students needed better preparation in the area of computer based applications.
2. Choose one of ALS3133, Agriculture and Environmental Quality or SWS3022, Introduction to Soils in the Environment, not both. Replace the deleted course with DCP2001, Introduction to GIS. We have consulted with DCP and they are supportive of our plans. We plan on enhancing our elective course in the Precision Agriculture area. A GIS introduction course will give our students a better foundation.
3. Delete requirement to take both ECO2013 and 2023 and replace with a requirement to take one of: ECO2013, ECO2023, or AEB2014. Replace the deleted course with our new AOM core course: AOM4932 Agri-Food Systems Innovation.

Also, due to lower division issues at UF, we would like to make the following changes to our Transfer Guide and change the text to reflect that we no longer have a 6 of 8 requirement for transfer courses:

Require the following 6 courses:
CHM2045 and lab
PHY2004 or PHY2020 and an applied physics lab
MAC1147 or
MAC1140 & 1114

BSC2010 and lab
ENC2210
ACG2021

The following courses are suggested to be taken before transfer but are not absolutely required before transfer:

Other courses required in the AOM major that are recommended before transfer:
SPC2608
STA2023
ECO2013 or ECO2023
CGS1100, 1101 or 2531
MAR3023
MAN3025

Track changes versions of our 8 semester plan and our Transfer Guide are included with this memo.

Sincerely,

Dr. Wendell A. Porter, P.E.
Sr. Lecturer and Adviser
Agricultural & Biological Engineering
University of Florida

AGRICULTURAL OPERATIONS MANAGEMENT

Agricultural Operations Management (AOM) combines emerging technologies with business principles to allow students to apply cutting edge techniques to a wide variety of career paths. Students gain technical expertise in systems management, environmental quality, energy efficiency, agricultural construction management, machinery, GIS/GPS remote sensing, safety, irrigation, power systems, water control and food processing. Students select a concentration based on their interest area.

The curriculum supports students who plan to seek career opportunities in commercial business operations and management. In addition to hands-on applied skills, students will take courses in economics, accounting, business, finance and management. Graduates become an integral part of the profitable operations of many types of businesses, such as agricultural production facilities, grove management, commercial nurseries, construction management and materials, regulatory agencies and citrus processing.

Students must complete an Associate of Arts degree, meet the required grade point average (G.P.A.), complete the required prerequisite courses, and meet the foreign language and immunization policies of the University of Florida before transferring.

Agricultural Operations Management

Required G.P.A. = 2.0 overall and 2.0 in the following courses.

Students MUST ~~complete 6 of the 8~~ all of the courses listed below ~~and include technical writing, math, chemistry and physics.~~ prior to transfer with an AA degree.

MAC 2233 Survey of Calculus 1 3

or MAC 1147 Precalculus 4

or MAC 1140 & MAC 1114 Precalculus Algebra and Trig 6

CHM 2045 & 2045L General Chemistry 1 and Lab 4

PHY 2004 Applied Physics 1 3

or PHY 2020 Introduction to Principles of Physics 3

ENC 2210 Technical Writing 3

BSC 2010/2010L General Biology 1 and Lab 4

~~**SPC 2608 Introduction to Public Speaking 3**~~

~~**ENC 2210 Technical Writing 3**~~

ACG 2021 Introduction to Financial Accounting 4

~~**PSY 2012 General Psychology 3**~~

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The following courses may be completed at the community/state college, but are not required for admission to the College of Agricultural and Life Sciences:

ECO 2013 Macroeconomics or ECO 2023 Microeconomics 3

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~~ECO 2023 Microeconomics 3~~

STA 2023 Introduction to Statistics 1 3

SPC 2608 Public Speaking

STA 2023 Introduction to Statistics 1

CGS 1100, 1101 or 2531 Microsoft Applications (or equivalent)

MAR 3023 Principles of Marketing

MAN 3025 Principles of Management

Find the academic adviser and website for this major at www.cals.ufl.edu/undergraduate

Agricultural Operations Management

Proposed Changes 2018-2019

To remain on track, students must complete the appropriate critical-tracking courses, which appear in bold. These courses must be completed by the terms as listed above in the Critical Tracking criteria.

This semester plan represents an example progression through the major. Actual courses and course order may be different depending on the student's academic record and scheduling availability of courses. Prerequisites still apply.

Plan of Study Grid

	Semester One	**Credits**
Select one:		3-4
BSC 2010 & 2010L	Integrated Principles of Biology 1 and Integrated Principles of Biology Laboratory 1 (**Critical Tracking**)	
BOT 2010C	Introductory Botany (**Critical Tracking**; Gen Ed Biological Sciences)	
IUF 1000	What is the Good Life (Gen Ed Humanities)	3
Select one:		3-4
MAC 1147	Precalculus Algebra and Trigonometry (**Critical Tracking**; State Core Gen Ed Mathematics)	
MAC 2233	Survey of Calculus 1 (**Critical Tracking**; State Core Gen Ed Mathematics)	
State Core Gen Ed Composition; Writing Requirement; with Diversity or International		3
Elective		1
	Credits	13-15
	Semester Two	
Select one:		4
ACG 2021	Introduction to Financial Accounting (**Critical Tracking**)	
Advisor-approved alternative (**Critical Tracking**)		
CHM 2045 & 2045L	General Chemistry 1 and General Chemistry 1 Laboratory (**Critical Tracking**; State Core Gen Ed Physical Sciences)	4
STA 2023	Introduction to Statistics 1 (Gen Ed Mathematics)	3
State Core Gen Ed Humanities with Diversity or International		3
Gen Ed Physical Sciences		3
	Credits	17
	Semester Three	

AOM 2520	Global Sustainable Energy: Past, Present and Future	3
Select one:		3-4
AEB 2014	Economic Issues, Food and You	
ECO 2013	Principles of Macroeconomics (Gen Ed Social and Behavioral Sciences)	
ECO 2023	Principles of Microeconomics	
Select one:		4
PHY 2004 & 2004L	Applied Physics 1 and Laboratory for Applied Physics 1 (**Critical Tracking**; Gen Ed Physical Sciences)	
PHY 2020 & PHY 2004L	Introduction to Principles of Physics and Laboratory for Applied Physics 1 (**Critical Tracking**; Gen Ed Physical Sciences)	
Select one:		3
~~PSY 2012~~CGS2531	Problem Solving Using Computer Software (**Critical Tracking**) ~~General Psychology (**Critical Tracking**; State Core Gen Ed Social and Behavioral Sciences)~~	~~3~~
CGS1100	Microcomputer Applications (**Critical Tracking**)	
CGS1101	Introduction to Computer Applications for Business (**Critical Tracking**)	
	Credits	13-14
	Semester Four	
Select one:		3
AEC 3030C	Effective Oral Communication (**Critical Tracking**)	
SPC 2608	Introduction to Public Speaking (**Critical Tracking**)	
ENC 2210	Technical Writing (**Critical Tracking**; Gen Ed Composition)	3
~~Select one:~~		~~4~~
~~ECO 2023~~AOM4932	Agri-Food Systems Innovation ~~Principles of Microeconomics~~	-3
~~Approved electives~~		
Approved elective		3
	Credits	~~13~~12
	Semester Five	
AEB 3300 or MAR 3023	Agricultural and Food Marketing or Principles of Marketing	3-4
AEB 3133 or MAN 3025	Principles of Agribusiness Management or Principles of Management	3-4
AOM 3220	Agricultural Construction and Maintenance	3
AOM 3333	Pesticide Application Techniques	3
Approved elective		3
	Credits	15-17
	Summer After Semester Five	

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AOM 3734	Irrigation Principles and Practices in Florida	3
	Credits	3
	Semester Six	
ALS 3133 or AOM 4521 or SWS 3022	Agricultural and Environmental Quality or Introduction to Biofuels or Introduction to Soils in the Environment	3
AOM 4314C	Power and Machinery Management	3
~~SWS 3022~~DCP2001	Introduction to GIS 1~~Introduction to Soils in the Environment~~d	3
AOM 4933	Professional Practices in Agricultural Operations Management	1
Approved electives		6
	Credits	~~15~~16
	Semester Seven	
Select one business law, ethics, or human resources course:		3-4
AEB 4085	Agricultural Risk Management and the Law	
AEB 4123	Agricultural and Natural Resource Law	
AEB 4126	Agricultural and Natural Resource Ethics	
BUL 4310	The Legal Environment of Business	
AOM 4642	Environmental Systems for Agricultural Structures	3
AOM 4643	Environmental Hydrology: Principles and Issues	3
~~AOM 4933~~	~~Professional Practices in Agricultural Operations Management~~	~~1~~
Approved electives		6
	Credits	15~~6~~-16~~7~~
	Semester Eight	
AOM 4434	Precision Agriculture	3
AOM 4444C	Electrical Power and Instrumentation for Agricultural Operations Management	3
AOM 4455	Agricultural Operations and Systems	3
AOM 4461	Sustainable Agricultural Systems	3
Approved elective		~~3~~1
	Credits	~~15~~13
	Total Credits	120

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~~1 Needed if ECO 2013 was taken.~~

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Cover Sheet: Request 13521

Updated 8-Semester plan for FYCS

Info

Process	Major Curriculum|Modify|Ugrad/Pro
Status	Pending at CALS - College of Agricultural and Life Sciences
Submitter	Kathryn Ivey kbeaty@ufl.edu
Created	1/15/2019 9:47:35 AM
Updated	1/15/2019 10:17:31 AM
Description of request	Due to added prerequisite coursework to our required practicum experience, the 8-Semester plan needed to be updated to reflect those changes.

Actions

Step	Status	Group	User	Comment	Updated
Department	Approved	CALS - Family, Youth and Community Sciences 514932000	Tracy Irani		1/15/2019
Family, Youth and Community Sciences--updated 8 semester plan 11519.docx					1/15/2019
College	Pending	CALS - College of Agricultural and Life Sciences			1/15/2019
No document changes					
Associate Provost for Undergraduate Affairs					
No document changes					
University Curriculum Committee					
No document changes					
Office of the Registrar					
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					

Major|Modify_Curriculum for request 13521

Info

Request: Updated 8-Semester plan for FYCS
Description of request: Due to added prerequisite coursework to our required practicum experience, the 8-Semester plan needed to be updated to reflect those changes.
Submitter: Kathryn Ivey kbeaty@ufl.edu
Created: 1/15/2019 9:31:30 AM
Form version: 1

Responses

Major Name Family, Youth and Community Sciences
Major Code FYC
Degree Program Name Bachelor of Science
Undergraduate Innovation Academy Program No
Effective Term Fall
Effective Year 2019
Current Curriculum for Major Semester One Credits
BSC 2005
& 2005L Biological Sciences
and Laboratory in Biological Sciences (Critical Tracking; State Core Gen Ed Biological Sciences)
4
IUF 1000 What is the Good Life (Gen Ed Humanities) 3
State Core Gen Ed Composition; Writing Requirement 3
Elective3
Credits 13
Semester Two
Select one: 3-4
MAC 1147
Precalculus Algebra and Trigonometry (State Core Gen Ed Mathematics)

MAC 1140
Precalculus Algebra (State Core Gen Ed Mathematics)

MAC 1105
Basic College Algebra (State Core Gen Ed Mathematics)

SYG 2000 Principles of Sociology (Critical Tracking; State Core Gen Ed Social and Behavioral Sciences) 3
Electives 6
Gen Ed Physical Sciences 3
Credits 15-16
Semester Three
Select one: 3-4
AEB 2014
Economic Issues, Food and You (Critical Tracking)

ECO 2023
Principles of Microeconomics (Critical Tracking)

ECO 2013
Principles of Macroeconomics (Critical Tracking; Gen Ed Social and Behavioral Sciences)

AEC 3030C
or SPC 2608
Effective Oral Communication
or Introduction to Public Speaking
3
PSY 2012 General Psychology (Critical Tracking; Gen Ed Social and Behavioral Sciences)
3
Gen Ed Composition 3
State Core Gen Ed Humanities 3
Credits 15-16
Semester Four
Select one: 3
AEC 3033C
Research and Business Writing in Agricultural and Life Sciences (Writing Requirement)

ENC 2210
Technical Writing

STA 2023 Introduction to Statistics 1 (Critical Tracking; Gen Ed Mathematics)
3
Gen Ed Biological or Physical Sciences 3
Electives 5
Credits 14
Semester Five
FYC 3001 Principles of Family, Youth and Community Sciences (Gen Ed Social and Behavioral
Sciences) 3
Select one: 3
FYC 3101
Parenting and Family Development

SYG 2430
Marriage and Family (Gen Ed Social and Behavioral Sciences and Diversity)

FYC course 3
Approved electives 6
Credits 15
Semester Six
FYC 3201 Foundations of Youth Development 3
FYC 3401 Introduction to Social and Economic Perspectives on the Community
3
FYC course 3
Specialization electives (3000/4000 level) 6
Credits 15
Summer After Semester Six
FYC 4941 Practicum in Family, Youth and Community Sciences 3
Credits 3
Semester Seven
Select two (or all three):6
FYC 3112
Contemporary Family Problems and Interventions

FYC 4212
Contemporary Youth Problems and Solutions

FYC 4126
Urban and Rural America in Transition

FYC 4931 Family, Youth, and Community Sciences Professional Development
3
FYC course 3
Specialization elective (3000/4000 level) 3
Credits 15
Semester Eight
FYC 4622 Planning and Evaluating Family, Youth and Community Science Programs
3
FYC 4801 Applied Social Research Methods 4
FYC course 3
Specialization electives (3000/4000 level) 5-6
Credits 15-16
Total Credits 120

Specialization electives must be at the 3000/4000 level and students must attain minimum grades of C.
Proposed Curriculum Changes Due to additional prerequisite courses being added to our Practicum requirement, the 8-Semester plan needed to be adjusted to reflect the changes.

Semester One Credits
BSC 2005
& 2005L
Biological Sciences
and Laboratory in Biological Sciences (Critical Tracking; State Core Gen Ed Biological Sciences)
4
IUF 1000
What is the Good Life (Gen Ed Humanities) 3
State Core Gen Ed Composition; Writing Requirement
3
Elective3
Credits 13
Semester Two
Select one: 3-4
MAC 1147
Precalculus Algebra and Trigonometry (State Core Gen Ed Mathematics)

MAC 1140
Precalculus Algebra (State Core Gen Ed Mathematics)

MAC 1105
Basic College Algebra (State Core Gen Ed Mathematics)

SYG 2000
Principles of Sociology (Critical Tracking; State Core Gen Ed Social and Behavioral Sciences)
3
Electives 6
Gen Ed Physical Sciences 3
Credits 15-16
Semester Three
Select one: 3-4
AEB 2014
Economic Issues, Food and You (Critical Tracking)

ECO 2023
Principles of Microeconomics (Critical Tracking)

ECO 2013
Principles of Macroeconomics (Critical Tracking; Gen Ed Social and Behavioral Sciences)

AEC 3030C
or SPC 2608
Effective Oral Communication
or Introduction to Public Speaking 3
PSY 2012
General Psychology (Critical Tracking; Gen Ed Social and Behavioral Sciences) 3
Gen Ed Composition 3
State Core Gen Ed Humanities
3
Credits 15-16
Semester Four
Select one: 3
AEC 3033C
Research and Business Writing in Agricultural and Life Sciences (Writing Requirement)

ENC 2210
Technical Writing

STA 2023
Introduction to Statistics 1 (Critical Tracking; Gen Ed Mathematics) 3
Gen Ed Biological or Physical Sciences 3
Electives 6
Credits 15
Semester Five
FYC 3001
Principles of Family, Youth and Community Sciences (Gen Ed Social and Behavioral Sciences)
3
Select one: 3
FYC 3101
Parenting and Family Development

SYG 2430
Marriage and Family (Gen Ed Social and Behavioral Sciences and Diversity)

FYC 3201 Foundations of Youth Development 3
FYC 4622 Planning and Evaluation of FYCS Programs 3
Minor/Specialization 3
Credits 15
Semester Six
FYC 4801
Applied Social Research Methods 4
FYC 3401
Introduction to Social and Economic Perspectives on the Community 3
FYC course 3
Choose one:
FYC 3112 Contemporary Family Problems and Solutions
FYC 4212 Contemporary Youth Problems and Interventions 3
Credits 13
Summer After Semester Six
FYC Course 3
Minor/Specialization 3
Credits 6
Semester Seven
Select one: 3
FYC 3112
Contemporary Family Problems and Interventions

FYC 4212
Contemporary Youth Problems and Solutions

FYC 4126
Urban and Rural America in Transition

FYC 4931
Family, Youth, and Community Sciences Professional Development 3
FYC course 3
Minor/Specialization 3
Credits 15

Semester Eight
FYC4941 Practicum in Family, Youth and Community Sciences 3
FYC course

3
Minor/Specialization electives 6
Credits 12
Total Credits 120
Specialization electives must be at the 3000/4000 level and students must attain minimum grades of C.

Pedagogical Rationale/Justification In order to better streamline the students to complete their practicum requirement in a timely manner and to be more prepared for their experience, we are proposing to move the Practicum requirement to the final semester. This will ensure most, if not all, core requirements are met prior to the experience therefore, making the students better prepared for the working environment.
Impact on Enrollment, Retention, Graduation We do not foresee any potential impact on the students enrollment, retention or timely graduation by making these changes.
Assessment Data Review The Undergraduate committee met with various community stakeholders in regards to preparedness of our students entering into their practicum experience. They unanimously stated adding FYC4622--Program Planning and Evaluation as well as FYC4801--Applied Social Research Methods to the required prerequisites before practicum would better prepare the students for their experience. These are foundational skills to completing their practicum.
Academic Learning Compact and Academic Assessment Plan No modifications will be made to the ALC.

	Semester One	Credits
BSC 2005 & 2005L	Biological Sciences and Laboratory in Biological Sciences (**Critical Tracking**; State Core Gen Ed Biological Sciences)	4
IUF 1000	What is the Good Life (Gen Ed Humanities)	3
State Core Gen Ed Composition; Writing Requirement		3
Elective		3
	Credits	13
	Semester Two	
Select one:		3-4
MAC 1147	Precalculus Algebra and Trigonometry (State Core Gen Ed Mathematics)	
MAC 1140	Precalculus Algebra (State Core Gen Ed Mathematics)	
MAC 1105	Basic College Algebra (State Core Gen Ed Mathematics)	
SYG 2000	Principles of Sociology (**Critical Tracking**; State Core Gen Ed Social and Behavioral Sciences)	3
Electives		6
Gen Ed Physical Sciences		3
	Credits	15-16
	Semester Three	
Select one:		3-4
AEB 2014	Economic Issues, Food and You (**Critical Tracking**)	
ECO 2023	Principles of Microeconomics (**Critical Tracking**)	
ECO 2013	Principles of Macroeconomics (**Critical Tracking**; Gen Ed Social and Behavioral Sciences)	
AEC 3030C or SPC 2608	Effective Oral Communication or Introduction to Public Speaking	3
PSY 2012	General Psychology (**Critical Tracking**; Gen Ed Social and Behavioral Sciences)	3
Gen Ed Composition		3
State Core Gen Ed Humanities		3
	Credits	15-16
	Semester Four	
Select one:		3
AEC 3033C	Research and Business Writing in Agricultural and Life Sciences (Writing Requirement)	
ENC 2210	Technical Writing	
STA 2023	Introduction to Statistics 1 (**Critical Tracking**; Gen Ed Mathematics)	3
Gen Ed Biological or Physical Sciences		3

Electives		6
	Credits	15
	Semester Five	
FYC 3001	Principles of Family, Youth and Community Sciences (Gen Ed Social and Behavioral Sciences)	3
Select one:		3
FYC 3101	Parenting and Family Development	
SYG 2430	Marriage and Family (Gen Ed Social and Behavioral Sciences and Diversity)	
FYC 3201	Foundations of Youth Development	3
FYC 4622	Planning and Evaluation of FYCS Programs	3
Minor/Specialization		3
	Credits	15
	Semester Six	
FYC 4801	Applied Social Research Methods	4
FYC 3401	Introduction to Social and Economic Perspectives on the Community	3
FYC course		3
Choose one:		
FYC 3112	Contemporary Family Problems and Solutions	3
FYC 4212	Contemporary Youth Problems and Interventions	
	Credits	13
	Summer After Semester Six	
FYC Course		3
Minor/Specialization		3
	Credits	6
	Semester Seven	
Select one:		3
FYC 3112	Contemporary Family Problems and Interventions	
FYC 4212	Contemporary Youth Problems and Solutions	
FYC 4126	Urban and Rural America in Transition	
FYC 4931	Family, Youth, and Community Sciences Professional Development	3
FYC course		3
Minor/Specialization		3
	Credits	15

Semester Eight

FYC4941	Practicum in Family, Youth and Community Sciences	3
FYC course		3
Minor/Specialization electives		6
	Credits	12
	Total Credits	120

Specialization electives must be at the 3000/4000 level and students must attain minimum grades of C.

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Cover Sheet: Request 13489

Natural Resource Conservation

Info

Process	Major Curriculum|Modify|Ugrad/Pro
Status	Pending at CALS - College of Agricultural and Life Sciences
Submitter	Scott Sager sasager@ufl.edu
Created	1/8/2019 9:08:04 AM
Updated	2/4/2019 11:38:16 AM
Description of request	Curriculum change.

Actions

Step	Status	Group	User	Comment	Updated
Department	Approved	CALS - Forest Resources and Conservation 514946000	Terrell Baker III		2/4/2019
Natural Resource Conservation University of Florida.pdf					1/8/2019
College	Pending	CALS - College of Agricultural and Life Sciences			2/4/2019
No document changes					
Associate Provost for Undergraduate Affairs					
No document changes					
University Curriculum Committee					
No document changes					
Office of the Registrar					
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					

Major|Modify_Curriculum for request 13489

Info

Request: Natural Resource Conservation
Description of request: Curriculum change.
Submitter: Scott Sager sasager@ufl.edu
Created: 1/8/2019 8:48:53 AM
Form version: 1

Responses

Major Name Natural Resource Conservation
Major Code RCN
Degree Program Name Bachelor of Science in Forest Resources and Conservation
Undergraduate Innovation Academy Program No
Effective Term Earliest Available
Effective Year Earliest Available
Current Curriculum for Major See attached catalog copy.
Proposed Curriculum Changes Current major includes eight courses/topical categories, with the remaining credits selected based on consultations between the student and their faculty advisor.

Proposed major expands this to nine topical categories, with the remaining credits based on student/faculty advisor consultations.
Pedagogical Rationale/Justification Changes designed to...
- allow a clear curricular path for students interested in freshwater fisheries and human-dimensions of natural resources;
- provide more curricular options for students completing the major at the West Florida Research and Education Center (located near Pensacola);
- address issues with high enrollment in core courses but expanding course options which satisfy requirements; and,
- enhances major's ability to meet demands of both students and prospective employers.

Impact on Enrollment, Retention, Graduation Changes will address expanding enrollment by allowing more flexibility in course selection to satisfy categorical requirements.

Retention of students should improve, as the curriculum continues to evolve to better meet student interests, and the interests of prospective employers.

Changes will not impact current students. Curriculum changes will be structured to allow current students to complete the existing program, without impacts to graduation rates.
Assessment Data Review All four SLOs for the major were reviewed as part of curriculum revision discussions. Curricular changes are expected to improve outcomes in all areas.
Academic Learning Compact and Academic Assessment Plan Program Goal #5 is currently addressed specifically through a presentation made in FNR4623C Integrated Natural Resource Management. Since this course is no longer required, this Goal will need to be revised; however, the courses which satisfy the "Capstone Experience" category will all include a presentation of similar scope, which will allow this Goal to continue to be assessed/evaluated.

CATALOG

NATURAL RESOURCE CONSERVATION

MAJOR

The ~~natural~~ Natural ~~resource~~ Resource ~~conservation~~ Conservation (NRC) major ~~enables students to tailor a curriculum that suits their interests and career goals for this field.~~

~~Working with a faculty advisor, students can elect to focus their curriculum on any number of natural resource conservation or management fields.~~

~~Students preparing for advanced degrees in natural resources often elect to complete a broad, interdisciplinary program.~~provides students an [redacted] natural resource-related issues. The core set of courses provides students with a solid foundation in natural history (floral and faunal), ecology, policy and economics, field applications, quantitative assessment and analysis, human dimensions, and spatial analysis. Working with a faculty advisor, students can elect to focus on a wide range of natural

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resource-related courses. In the required capstone experience, students demonstrate their understanding and proficiency in the core skill sets, as well as further develop their area of concentration.

Graduates seek advanced degrees in a variety of fields, or are successfully employed in a wide range of environmental careers. The major is cooperatively offered by faculty in the *School of Forest Resources & Conservation*, the *Department of Wildlife Ecology and Conservation*, and the *Program in Fisheries and Aquatic Sciences*, and students are paired with one of these faculty members to develop a curriculum that suits their needs. Students interested in more structured and/or accredited curricula in professional natural resource management are encouraged to look at majors in *Forest Resources and Conservation*, *Wildlife Ecology and Conservation*, or *Interdisciplinary Studies-Marine Sciences*.

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ABOUT THIS PROGRAM

College: Agricultural and Life Sciences

Degree: Bachelor of Science in Forest Resources and Conservation

Credits for Degree: 120

Additional Information

Contact: Email

Related Natural Resource Conservation Programs

To graduate with this major, students must complete all university, college, and major requirements.

Overview | Critical Tracking | Model Semester Plan | Academic Learning Compact

All NRC majors are required to complete ~~eight~~ corework in nine content areas ~~courses~~ (minimum ~~24~~ 25 credits); professional seminar, ecology, quantitative analysis and assessment, natural history, human dimensions, policy and economics, field applications, spatial analysis, and capstone experience. ~~that span and integrate across forest, wildlife, fisheries, and aquatic resources, including bio-physical and socio- economic domains.~~ These courses embrace a variety of conservation ~~and production~~ objectives, and span local to global scales. They stress the complexities in achieving social, environmental and economic sustainability, develop critical thinking skills, create significant and valuable field experience, and provide the tools needed for graduates to manage, conserve, and educate people about natural resources.

Students work closely with a faculty advisor to select the remaining ~~36~~ 35 upper-division credits to create a curriculum plan designed to meet the specific goals of each student. Each curriculum plan must be approved by the program's undergraduate coordinator before the student reaches 70 credits.

This major is also offered at the West Florida Research and Education Center in Milton, FL. Ideal for place-bound students, this version of the NRC major provides a broad ecology/~~environmental management~~conservation curriculum.

RELATED NATURAL RESOURCE CONSERVATION PROGRAMS

- Combined Degree

Bachelor of Science in Forest Resources and Conservation

- Bachelor of Science in Interdisciplinary Studies | Marine Sciences | CALS
- Bachelor of Science in Wildlife Ecology and Conservation
- Wildlife Ecology and Conservation minor

Critical Tracking records each student's progress in courses that are required for entry to each major. Please note the critical-tracking requirements below on a per-semester basis.

Equivalent critical-tracking courses as determined by the State of Florida Common Course Prerequisites may be used for transfer students.

SEMESTER 1

- Complete at least 1 of 7 critical-tracking courses (excluding labs): AEB 2014 or ECO 2013 or ECO 2023, AEC 3030C or SPC 2608, AEC 3033C, BSC 2010/BSC 2010L, CHM 1030 or CHM 2045, MAC 1105, STA 2023
- 2.5 GPA required for all critical-tracking courses
- 2.0 UF GPA required

SEMESTER 2

- Complete at least 2 additional critical-tracking courses, excluding labs
- 2.5 GPA required for all critical-tracking courses
- 2.0 UF GPA required

SEMESTER 3

- Complete at least 2 additional critical-tracking course, excluding labs
- 2.5 GPA required for all critical-tracking courses
- 2.0 UF GPA required

SEMESTER 4

- Complete at least 2 additional critical-tracking courses, excluding labs
- 2.5 GPA required for all critical-tracking courses
- 2.0 UF GPA required

SEMESTER 5

- Complete all critical-tracking courses, including labs
- 2.5 GPA required for all critical-tracking courses
- 2.0 UF GPA required

To remain on track, students must complete the appropriate critical-tracking courses, which appear in bold. These courses must be completed by the terms as listed above in the Critical Tracking criteria.

This semester plan represents an example progression through the major. Actual courses and course order may be different depending on the student's academic record and scheduling availability of courses. Prerequisites still apply.

Semester One		**Credits**
IUF 1000	What is the Good Life (Gen Ed Humanities)	3
Select one:		3
CHM 1030	Basic Chemistry Concepts and Applications 1 (**Critical Tracking**)	
CHM 2045	General Chemistry 1 (**Critical Tracking**; Gen Ed Biological Sciences and Physical Sciences)	
State Core Gen Ed Composition; Writing Requirement		3
FOR 2662	Forests for the Future (recommended; Gen Ed Social and Behavioral Sciences and Diversity)	3
Elective		3
	Credits	**15**
Semester Two		
MAC 1105	Basic College Algebra (**Critical Tracking**; State Core Gen Ed Mathematics) [1]	3
BSC 2010 & 2010L	Integrated Principles of Biology 1 and Integrated Principles of Biology Laboratory 1 (**Critical Tracking**; State Core Gen Ed Biological and Physical Sciences)	4

FAS 2024	Global and Regional Perspectives in Fisheries (recommended; or elective)	3
State Core Gen Ed Social and Behavioral Sciences		3
Elective		3
	Credits	**16**

Semester Three

AEC 3033C	Research and Business Writing in Agricultural and Life Sciences (**Critical Tracking**; Writing Requirement) [2]	3
STA 2023	Introduction to Statistics 1 (**Critical Tracking**; Gen Ed Mathematics)	3
FOR 3004	Forests, Conservation and People (recommended; or elective)	3
Gen Ed Composition		3
Elective		2
	Credits	**14**

Semester Four

Select one:		3-4
AEB 2014	Economic Issues, Food and You (**Critical Tracking**; Gen Ed Social and Behavioral Sciences)	
ECO 2013	Principles of Macroeconomics (**Critical Tracking**; Gen Ed Social and Behavioral Sciences)	
ECO 2023	Principles of Microeconomics (**Critical Tracking**; Gen Ed Social and Behavioral Sciences)	
Select one:		3
AEC 3030C	Effective Oral Communication (**Critical Tracking**)	
SPC 2608	Introduction to Public Speaking (**Critical Tracking**)	
PHY 2020	Introduction to Principles of Physics (recommended; Gen Ed Physical Sciences)	3
State Core Gen Ed Humanities		3

Elective [3]		3
	Credits	**15-16**

Summer After Semester Four

Summer B

Select one:

FOR 3200C	Foundations of Natural Resources and Conservation	~~3~~1
FNR 4932	Topics in Forest Resources and Conservation (Professional Practice in Natural Resources)	1
	Credits	**~~3~~1**

Semester Five

Select one:		3-4
~~FAS 4932~~FAS 4202C	~~Topics in Fisheries and Aquatic Sciences (summer only)~~Biology of Fishes	
FNR 3131C	Dendrology/Forest Plants (fall only)	
WIS 3402 & 3402L	Wildlife of Florida and Wildlife of Florida Laboratory (spring only)	
~~ZOO 4205C~~	~~Invertebrate Biodiversity (spring only)~~	
Select one:		3
FNR 3410C	Natural Resource Sampling	~~3~~
FAS 4932	Topics in Fisheries and Aquatic Sciences (Applied Fisheries Statistics)	
WIS 4601	Quantitative Wildlife Ecology	
WIS 4945C	Wildlife Techniques	
Select one:		3-4
FOR 3153C	Forest Ecology	
~~WIS 4934~~WIS 3404	~~Topics in Wildlife Ecology and Conservation (~~Natural Resource Ecology~~)~~	
FAS 4270	Marine Ecological Processes	

FAS 4932	Topics in Fisheries and Aquatic Sciences (Freshwater Ecology)	
WIS 4443	Wetland Ecology	
Select one:		3
FOR 3434C	Forest Resource Information Systems	
GIS 3072C	Geographic Information Systems	
Approved course		~~3~~2
	Credits	~~12~~14-~~13~~15
Semester Six		
Select one:		3
FOR 3202	Society and Natural Resources	~~3~~
FNR 4932	Topics in Forest Resources and Conservation (Environment and Society)	
FOR 4060	Global Forests and Society	
Approved courses		12
	Credits	**15**
Semester Seven		

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Commented [SA2]:

Select one:		3
FNR 4624C	Field Operations for Management of Ecosystems	3
FAS 4305C	Intro to Fisheries Science	
WIS 4427C	Wildlife Habitat Management	
FNR 4070C	Environmental Education Program Development	
FOR 3214 & 3214L	Fire Ecology and Management and Fire Ecology and Management Lab	
FOR 4664	Sustainable Ecotourism Development	
FAS 4932	Topics in Fisheries and Aquatic Sciences (Field Ecology of Aquatic Organisms)	
Select one:		3
FNR 4660	Natural Resource Policy and Economics	3
FOR 4621	Forest Economics and Management	
Approved courses		9
	Credits	**15**
Semester Eight		
Select one:		3
FNR 4932 & FNR 4623C	Topics in Forest Resources and Conservation (Integrated ~~Natural Resource~~ Management and Analysis) and Integrated Management and Planning	3
FOR 4941	Internship in Natural Resources	
FAS 4905	Independent Study	
FOR 4905	Independent Study	
WIS 4905	Independent Study	
Approved courses		12
	Credits	**15**
	Total Credits	**120**

[1] Or higher level course.

[2] May substitute ENC 2210 or ENC 3254.

[3] FAS 2024 recommended, if not already taken.

Given the flexible, advisor/student-driven nature of this major, individual students may substantially deviate from this curriculum plan. As part of their curriculum plan, students are required to complete at least one course from the following nine content areas:

Professional Seminar

- FOR 3200C *Foundations in Natural Resources and Conservation*
- FNR 4932 *Topics in Forest Resources and Conservation (Professional Practice in Natural Resources)*

Ecology

- FOR 3153C *Forest Ecology*
- WIS 3404 *Natural Resource Ecology*
- FAS 4270 *Marine Ecological Processes*
- FAS 4932 *Topics in Fisheries and Aquatic Sciences (Freshwater Ecology)*
- WIS 4443 *Wetland Ecology*

Quantitative Analysis and Assessment

- FNR 3410C *Natural Resource Sampling*
- FAS 4932 *Topics in Fisheries and Aquatic Sciences (Applied Fisheries Statistics)*
- WIS 4601 *Quantitative Wildlife Ecology*
- WIS4935C *Wildlife Techniques*

Natural History

- FNR 3131C *Dendrology/Forest Plants*
- WIS3402/L *Wildlife of Florida + Wildlife of Florida Lab*
- FAS 4202C *Biology of Fishes*

Human Dimensions

- FOR 3202 *Society and Natural Resources*
- FNR4932 *Environment and Society*
- FOR 4060 *Global Forests and Society*

Policy and Economics

- FNR 4660 *Natural Resource Policy/Economics*
- FOR 4621 *Forest Economics and Management*

Field Applications

- FAS 4305C *Intro to Fisheries Science*
- FNR 4624C *Field Operations for Management of Ecosystems*
- WIS 4427C *Wildlife Habitat Management*
- FNR 4070C *Environmental Education Program Development*
- FOR3214/L *Fire Ecology and Management + Fire Ecology and Management Lab*

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- FOR 4664 *Sustainable Ecotourism Development*
- FAS4932 *Topics in Fisheries and Aquatic Sciences (Field Ecology of Aquatic Organisms)*

Spatial Analysis

- FOR 3434C *Forest Resource Information Systems*
- GIS 3072C *Geographic Information Systems*

Capstone Experience

- FNR 4932 *Topics in Forest Resources and Conservation (Integrated Management and Assessment)* + FNR 4623C *Integrated Management and Planning*
- FOR 4941 *Internship in Natural Resources*
- FAS 4905 *Independent Study*
- FOR 4905 *Independent Study*
- WIS 4905 *Independent Study*

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The summer term between the junior and senior year is normally reserved for professional work experience.

~~The natural resource conservation major provides a broad education in the ecological, economic and social aspects of forest and natural resources and their management. The individualized nature of the major allows students to create a curriculum specific to their interests.~~

BEFORE GRADUATING STUDENTS MUST

~~Pass the forest resources and conservation competency exam, given in five parts. One part will be given in each of these required courses:~~

~~FNR 3131C~~	~~Dendrology/Forest Plants~~	~~3~~
~~FNR 3410C~~	~~Natural Resource Sampling~~	~~3~~
~~FNR 4040C~~		
~~FNR 4623C~~	~~Integrated Natural Resource Management~~	~~3~~

~~FNR 4660~~	~~Natural Resource Policy and Economics~~	~~3~~

- Complete requirements for the baccalaureate degree, as determined by faculty.

STUDENTS IN THE MAJOR WILL LEARN TO

Student Learning Outcomes (SLOs)

Content

1. Demonstrate competency in biology/ecology, quantification, policy/administration and management of natural resources.
2. Analyze, interpret, synthesize and communicate information and data, including the use of mathematical and statistical methods.

Critical Thinking

3. Solve novel problems in natural resource management.

Communication

4. Create, interpret and analyze written text, oral messages and multimedia presentations.

Curriculum Map

I = Introduced; R = Reinforced; A = Assessed

~~Courses~~Content Areas	SLO 1	SLO 2	SLO 3	SLO 4
~~FOR 3153C~~Professional Seminar	I	I	~~R~~	I
~~FOR 3200C~~Ecology	I	I	~~I~~	I
~~FOR 3202~~Quantitative Assessment and Analysis	I	I	~~R~~I	~~R~~I
~~FNR 3131C~~Natural History	I			I
~~FNR 3410C~~Human Dimensions	~~I~~R	~~R~~I R	R	

~~ENR 4623C~~Policy and Economics	R		R		AR		AR	
~~ENR 4624C~~Field Applications	R		R	R		R		
~~ENR 4660~~Capstone Experience	IA	A			RA		AR	
Spatial Analysis	I	I					I	

Exit Exam	A	A

ASSESSMENT TYPES

- Group project
- Presentation
- Final exam

UF Signature

Office of the University Registrar
1476 Union Road
222 Criser Hall - P.O. Box 114000
Gainesville, FL 32611-4000
Phone: 352-392-1374; Fax: 352-846-1126
Hours. 8 a.m. - 5 p.m., M-F

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Cover Sheet: Request 13378

SWS 6XXX - Modeling Land Biogeochemistry

Recycled

Info

Process	Course|New|Grad
Status	Pending at CALS - College of Agricultural and Life Sciences
Submitter	Michael Sisk mjsisk@ufl.edu
Created	11/29/2018 3:28:14 PM
Updated	1/9/2019 12:52:30 PM
Description of request	New Graduate Course in Soil and Water Sciences Department

Actions

Step	Status	Group	User	Comment	Updated
Department	Approved	CALS - Soil and Water Science 514921000	Thomas Obreza		11/29/2018
UCC_External_Consult_Completed_EES_11_29_18.pdf					11/29/2018
College	Recycled	CALS - College of Agricultural and Life Sciences	Joel H Brendemuhl	Recyled by CALS CC on 12/14/18. Comments have been sent to the submitter. Once these comments have been addressed the CALS CC will review.	1/7/2019
No document changes					
Department	Approved	CALS - Soil and Water Science 514921000	Matthew Whiles		1/9/2019
SWS_6XXX_Modeling_Land_Biogeochemistry_01_07_19.pdf UCC_External_Consult_Completed_SFRC_12_17_18.pdf UCC_External_Consult_Completed_GLY_12_18_18.pdf UCC_External_Consult_Completed_GEO_12_18_18.pdf UCC_External_Consult_Completed_ABE_1_9_19.pdf					1/9/2019 1/9/2019 1/9/2019 1/9/2019 1/9/2019
College	Pending	CALS - College of Agricultural and Life Sciences			1/9/2019
No document changes					
Graduate Curriculum Committee					
No document changes					
University Curriculum Committee Notified					
No document changes					
Statewide Course Numbering System					
No document changes					
Graduate School Notified					
No document changes					
Office of the Registrar					

Course|New for request 13378

Info

Request: SWS 6XXX - Modeling Land Biogeochemistry
Description of request: New Graduate Course in Soil and Water Sciences Department
Submitter: Michael Sisk mjsisk@ufl.edu
Created: 1/9/2019 11:15:54 AM
Form version: 2

Responses

Recommended Prefix SWS
Course Level 6
Number XXX
Category of Instruction Intermediate
Lab Code None
Course Title Modeling Land Biogeochemistry
Transcript Title Modeling Land Biogeoc
Degree Type Graduate

Delivery Method(s) On-Campus
Co-Listing No
Co-Listing Explanation N/A
Effective Term Earliest Available
Effective Year Earliest Available
Rotating Topic? No
Repeatable Credit? No

Amount of Credit 3

S/U Only? No
Contact Type Regularly Scheduled
Weekly Contact Hours 3
Course Description Modeling the flow of water, carbon and nutrients from an Earth system perspective.
Prerequisites BSC 3307C or COP 3272 or MAC 2233 or PHY 2048 or SWS 4180 or ABE 5643C or PCB 5358 or SWS 5182 or SWS 5224
Co-requisites N/A
Rationale and Placement in Curriculum Large scale models are critical tools to address global environmental challenges from climate change, water resources and eutrophication. This course provides insights into these modeling tools for students who want to pursue environmental modeling in the future and for students who are interested in aligning their research to further develop and improve these earth system models. This course will be complementary to other courses in the SWSD curriculum, filling an emerging need for a more global focus within our discipline.
Course Objectives By the end of this course, students will be able to

- Describe processes represented in a dynamic global land model
- Apply and evaluate global land models for global change and biogeochemistry research
- Describe linkages between land carbon cycles, water cycles, and climate
- Assess restrictions and limitations of mechanistic land surface model

Course Textbook(s) and/or Other Assigned Reading No textbook. Reading assignments will be available on the course website https://elearning.ufl.edu/ in form of scientific papers (see also references below the course schedule). Optional, further reading include the following titles

- Bonan G, Ecological Climatology, 2002, Cambridge University Press
- Climate Change 2013 - The Physical Science Basis Contribution of Working Group I to the Fifth Assessment Report of the IPCC (available online www.ipcc.ch)
- Jacobson M.C. et al., 2000, Earth System Science from Biogeochemical Cycles to Global Change

Beedlow, P. A., D. T. Tingey, D. L. Phillips, W. E. Hogsett, and D. M. Olszyk. 2004. Rising atmospheric CO2 and carbon sequestration in forests. Frontiers in Ecology and the Environment 2:315–322.

Farquhar, G. D., S. Caemmerer, and J. A. Berry. 1980. A biochemical model of photosynthetic CO2 assimilation in leaves of C3 species. Planta 149:78–90.

Fisher, R. A., C. D. Koven, W. R. L. Anderegg, B. O. Christoffersen, M. C. Dietze, C. E. Farrior, J. A. Holm, et al. 2018. Vegetation demographics in Earth System Models: A review of progress and priorities. Global Change Biology 24:35–54.

Friedlingstein, P., M. Meinshausen, V. K. Arora, C. D. Jones, A. Anav, S. K. Liddicoat, and R. Knutti. 2013. Uncertainties in CMIP5 Climate Projections due to Carbon Cycle Feedbacks. Journal of Climate 27:511–526.

Gerten, D., S. Schaphoff, U. Haberlandt, W. Lucht, and S. Sitch. 2004. Terrestrial vegetation and water balance—hydrological evaluation of a dynamic global vegetation model. Journal of Hydrology 286:249–270.

Haxeltine, A., and I. C. Prentice. 1996. A general model for the light-use efficiency of primary production. Functional Ecology 10:551–561.

Lenton, T. M. 2000. Land and ocean carbon cycle feedback effects on global warming in a simple Earth system model. Tellus B 52:1159–1188.

Leuning, R. 1995. A critical appraisal of a combined stomatal-photosynthesis model for C3 plants. Plant, Cell and Environment 18:339–355.

Lloyd, J., and J. A. Taylor. 1994. On the temperature dependence of soil respiration. Functional Ecology 8:315–323.

Parton, W., W. L. Silver, I. C. Burke, L. Grassens, M. E. Harmon, W. S. Currie, J. Y. King, et al. 2007. Global-scale similarities in nitrogen release patterns during long-term decomposition. Science 315:361–364.

Sitch, S., B. Smith, I. C. Prentice, A. Arneth, A. Bondeau, W. Cramer, J. O. Kaplan, et al. 2003. Evaluation of ecosystem dynamics, plant geography and terrestrial carbon cycling in the LPJ dynamic global vegetation model. Global Change Biology 9:161–185.

Thonicke, K., S. Venevsky, S. Sitch, and W. Cramer. 2001. The role of fire disturbance for global vegetation dynamics: coupling fire into a Dynamic Global Vegetation Model. Global Ecology & Biogeography 10:661–677.

Weekly Schedule of Topics Week Topic Assignments Reading
1-2 Introduction / scope of land surface model - Program "Hello World"
- Concept Map "global change on the land surface" Beedlow et al., 2004
Friedlingstein, 2014
3-4 Flow of carbon in the land surface - Track carbon in a complex land surface model
- Evaluate your carbon cycle model Sitch et al., 2003
Lenton et al., 2000
5-6 Photosynthesis theory and models - Derive mathematical formulation of C4 photosynthesis
- Modify photosynthesis code using alternate mathematical formulation Farquhar et al., 1980
Haxeltine and Prentice, 1996
7-8 Canopy carbon, water, and energy balance - Group Work: modify parameter in Earth System Model to find maximum rate of plant photosynthesis Leuning, 1995
9-10 Water balance - Flipped Class: teach the concepts of water flow in a land surface model

- Group Work: minimize modeled runoff globally Gerten et al., 2004
11-12 Soil organic matter - Discuss residence times of carbon in terrestrial systems
- Group work: minimize data-model mismatch in soil organic carbon Parton et al., 2007
Lloyd and Taylor, 1994
13-14 Plant Traits and Functional Types / Fire - Group Work: engineer a hyper successful plant Fisher et al, 2018
Thonicke et al, 2001
15-16 Final Project - Final oral presentation
- Final paper

Links and Policies For information on current UF policies for assigning grade points, see https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx
Attendance and Make-Up Work
Requirements for class attendance and make-up exams, assignments and other work are consistent with university policies that can be found at:
https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx.
Online Course Evaluation Process
Student assessment of instruction is an important part of efforts to improve teaching and learning. At the end of the semester, students are expected to provide feedback on the quality of instruction in this course using a standard set of university and college criteria. These evaluations are conducted online at https://evaluations.ufl.edu. Evaluations are typically open for students to complete during the last two or three weeks of the semester; students will be notified of the specific times when they are open. Summary results of these assessments are available to students at https://evaluations.ufl.edu/results.
Academic Honesty
As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge: "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity." You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment."
It is assumed that you will complete all work independently in each course unless the instructor provides explicit permission for you to collaborate on course tasks (e.g. assignments, papers, quizzes, exams). Furthermore, as part of your obligation to uphold the Honor Code, you should report any condition that facilitates academic misconduct to appropriate personnel. It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For more information regarding the Student Honor Code, please see:
http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code.
Software Use:
All faculty, staff and students of the university are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against university policies and rules, disciplinary action will be taken as appropriate.
Services for Students with Disabilities
The Disability Resource Center coordinates the needed accommodations of students with disabilities. This includes registering disabilities, recommending academic accommodations within the classroom, accessing special adaptive computer equipment, providing interpretation services and mediating faculty-student disability related issues. Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation
0001 Reid Hall, 352-392-8565, www.dso.ufl.edu/drc/
Campus Helping Resources
Students experiencing crises or personal problems that interfere with their general well-being are encouraged to utilize the university's counseling resources. The Counseling & Wellness Center provides confidential counseling services at no cost for currently enrolled students. Resources are available on campus for students having personal problems or lacking clear career or academic goals, which interfere with their academic performance.
• University Counseling & Wellness Center, 3190 Radio Road, 352-392-1575, www.counseling.ufl.edu
Counseling Services

Groups and Workshops
Outreach and Consultation
Self-Help Library
Wellness Coaching

- U Matter We Care, www.umatter.ufl.edu/

- Career Connections Center, First Floor JWRU, 392-1601, https://career.ufl.edu/.

Student Complaints:

- Residential Course: https://sccr.dso.ufl.edu/
- Online Course: http://www.distance.ufl.edu/student-complaint-process

Grading Scheme Letter Grade Sum of % Points (p)

A	95	
A-	90	p < 95
B+	85	p <90
B	80	p < 85
B-	75	p < 80
C+	70	p < 75
C	65	p < 70
C-	60	p < 65
D+	55	p < 60
D	50	p < 55
D-	45	p < 50
E	< 45	

Course Maximum % Points	
Individual Assignments	35
Group Work	35
Final Project/Report	15
Final Oral Presentation	15

Instructor(s) Stefan Gerber
3179 McCarty Hall
Phone: 352-294-3174
sgerber@ufl.edu

UF UNIVERSITY of FLORIDA

UCC: External Consultations

External Consultation Results (departments with potential overlap or interest in proposed course, if any)

Department	Name and Title
ABE	Kati Migliaccio, Professor and Chair
Phone Number	**E-mail**
352-294-6743	klwhite@ufl.edu

Comments

We have considered the course SWS 6XXX Modeling Land Biogeochemistry and do not feel we have an overlap with current course offerings.

Department	Name and Title
Phone Number	**E-mail**

Comments

Department	Name and Title
Phone Number	**E-mail**

Comments

UF UNIVERSITY of FLORIDA

UCC: External Consultations

External Consultation Results (departments with potential overlap or interest in proposed course, if any)

Department	Name and Title
Environmental Engineering Sciences	Chang-Yu Wu, Professor & Dept Head
Phone Number	**E-mail**
352-392-0845	cywu@ufl.edu

Comments

Environmental Engineering Sciences Department supports this new course. We do not see overlap with our existing courses.

Department	Name and Title
Phone Number	**E-mail**

Comments

Department	Name and Title
Phone Number	**E-mail**

Comments

UF UNIVERSITY of FLORIDA

UCC: External Consultations

External Consultation Results (departments with potential overlap or interest in proposed course, if any)

Department	Name and Title
UF Geography	Sadie J. Ryan, PhD - Associate Professor & Graduate Coordina
Phone Number	**E-mail**
352-294-7513	sjryan@ufl.edu

Comments

Dear Dr Sisk,

We find this class to be appropriate and have no problem with it being offered at UF.

Sincerely
Sadie

Department	Name and Title
Phone Number	**E-mail**

Comments

Department	Name and Title
Phone Number	**E-mail**

Comments

UF UNIVERSITY of FLORIDA

UCC: External Consultations

External Consultation Results (departments with potential overlap or interest in proposed course, if any)

Department	Name and Title
Geological Sciences	Raymond M. Russo
Phone Number	**E-mail**
2-6766	rrusso@ufl.edu

Comments

We have reviewed the proposed course description for SWS 6XXX – Modeling Land Biogeochemistry, and find that there is no appreciable overlap in content between the proposed course and courses currently taught in our Department.

Department	Name and Title
Phone Number	**E-mail**

Comments

Department	Name and Title
Phone Number	**E-mail**

Comments

UF UNIVERSITY of FLORIDA

UCC: External Consultations

External Consultation Results (departments with potential overlap or interest in proposed course, if any)

Department	Name and Title
School of Forest Resources and Conservation	Taylor Stein, Graduate Coordinator
Phone Number	**E-mail**
352-846-0860	tstein@ufl.edu

Comments

We see no conflict with classes that we teach in the SFRC. It appears to be a good class.

Department	Name and Title
Phone Number	**E-mail**

Comments

Department	Name and Title
Phone Number	**E-mail**

Comments

Modeling Land Biogeochemistry

Catalogue Description Modeling the flow of water, carbon and nutrients from an Earth system perspective

Term	Spring 2019
Meeting Time	Tuesday Period 4-5 (10:40am – 12:35pm); MCCB 3086 (Computer Lab) Thursday Period 4 (10:40am – 11:30 pm); MCCB 3086 (Computer Lab)
Credits	3
Instructor	Stefan Gerber 3179 McCarty Hall Phone: 352-294-3174 sgerber@ufl.edu
Office hours	Thursday 12:30pm to 2:30 pm or by appointment

Course Prerequisite: A course that addresses ecosystem ecology, quantitative ecology/biogeochemistry and/or theory of carbon water and nutrient flow in a terrestrial system is required at 3000 level or higher (e.g. SWS 4180/5281, SWS 5224, PCB 5358, BSC 3307C, ABE 5643C, etc.) A minimal proficiency of calculus (e.g. MAC 2233: Survey of Calculus 1; PHY 2048 Physics with Calculus 1, or similar), as well as some programming experience in a basic computer language such as C or FORTRAN (e.g. COP3272: Programming using C) is advantageous but not a requirement.

Additional Course Information

Dynamic land models or land surface models are widely used as part of larger Earth system models and serve to represent exchange of energy (heat radiation momentum), water, carbon, and nutrients between land and the atmosphere/ocean system. We will investigate how these land models interact with the atmosphere and help with climate predictions. We further explore how biological processes are formulated mathematically to capture the broad range of plant functioning on a regional to global scale. We will particularly address how such processes are represented and resolved in a model code. We will take a look under the hood of such a model by boldly modifying the source code, thereby get a feel for the development/application cycle. We will then make use of a land surface model to explore effects global environmental change on vegetation and land surface dynamics.

Objectives

By the end of this course, students will be able to

- Describe processes represented in a dynamic global land model
- Apply and evaluate global land models for global change and biogeochemistry research
- Describe linkages between land carbon cycles, water cycles, and climate
- Assess restrictions and limitations of mechanistic land surface model

Course Format

3 credit course where contact hours are divided into a two hour and one hour period per week. The weights of lecture, computer lab and discussion shift during the semester with focus on lectures initially, and moving towards labs and discussions with the progression of the semester.

Course text

No textbook. Reading assignments will be available on the course website https://elearning.ufl.edu/ in form of scientific papers (see also references below the course schedule). Optional, further reading include the following titles

- Bonan G, Ecological Climatology, 2002, Cambridge University Press
- Climate Change 2013 - The Physical Science Basis Contribution of Working Group I to the Fifth Assessment Report of the IPCC (available online www.ipcc.ch)
- Jacobson M.C. et al., 2000, Earth System Science from Biogeochemical Cycles to Global Change

Course Parts and Schedule

Note that the schedule is approximate, and pace may vary.

Week	Topic	Assignments	Reading
1-2	Introduction / scope of land surface model	- Program "Hello World" - Concept Map "global change on the land surface"	Beedlow et al., 2004 Friedlingstein, 2014
3-4	Flow of carbon in the land surface	- Track carbon in a complex land surface model - Evaluate your carbon cycle model	Sitch et al., 2003 Lenton et al., 2000
5-6	Photosynthesis theory and models	- Derive mathematical formulation of C4 photosynthesis - Modify photosynthesis code using alternate mathematical formulation	Farquhar et al., 1980 Haxeltine and Prentice, 1996
7-8	Canopy carbon, water, and energy balance	- Group Work: modify parameter in Earth System Model to find maximum rate of plant photosynthesis	Leuning, 1995
9-10	Water balance	- Flipped Class: teach the concepts of water flow in a land surface model - Group Work: minimize modeled runoff globally	Gerten et al., 2004
11-12	Soil organic matter	- Discuss residence times of carbon in terrestrial systems - Group work: minimize data-model mismatch in soil organic carbon	Parton et al., 2007 Lloyd and Taylor, 1994
13-14	Plant Traits and Functional Types / Fire	- Group Work: engineer a hyper successful plant	Fisher et al, 2018 Thonicke et al, 2001
15-16	Final Project	- Final oral presentation - Final paper	

Full reference of reading (papers)

Beedlow, P. A., D. T. Tingey, D. L. Phillips, W. E. Hogsett, and D. M. Olszyk. 2004. Rising atmospheric CO2 and carbon sequestration in forests. Frontiers in Ecology and the Environment 2:315–322.
Farquhar, G. D., S. Caemmerer, and J. A. Berry. 1980. A biochemical model of photosynthetic CO2 assimilation in leaves of C3 species. Planta 149:78–90.
Fisher, R. A., C. D. Koven, W. R. L. Anderegg, B. O. Christoffersen, M. C. Dietze, C. E. Farrior, J. A. Holm, et al. 2018. Vegetation demographics in Earth System Models: A review of progress and priorities. Global Change Biology 24:35–54.
Friedlingstein, P., M. Meinshausen, V. K. Arora, C. D. Jones, A. Anav, S. K. Liddicoat, and R. Knutti. 2013. Uncertainties in CMIP5 Climate Projections due to Carbon Cycle Feedbacks. Journal of Climate 27:511–526.
Gerten, D., S. Schaphoff, U. Haberlandt, W. Lucht, and S. Sitch. 2004. Terrestrial vegetation and water balance—hydrological evaluation of a dynamic global vegetation model. Journal of Hydrology 286:249–270.
Haxeltine, A., and I. C. Prentice. 1996. A general model for the light-use efficiency of primary production. Functional Ecology 10:551–561.
Lenton, T. M. 2000. Land and ocean carbon cycle feedback effects on global warming in a simple Earth system model. Tellus B 52:1159–1188.
Leuning, R. 1995. A critical appraisal of a combined stomatal-photosynthesis model for C3 plants. Plant, Cell and Environment 18:339–355.
Lloyd, J., and J. A. Taylor. 1994. On the temperature dependence of soil respiration. Functional Ecology 8:315–323.
Parton, W., W. L. Silver, I. C. Burke, L. Grassens, M. E. Harmon, W. S. Currie, J. Y. King, et al. 2007. Global-scale similarities in nitrogen release patterns during long-term decomposition. Science 315:361–364.
Sitch, S., B. Smith, I. C. Prentice, A. Arneth, A. Bondeau, W. Cramer, J. O. Kaplan, et al. 2003. Evaluation of ecosystem dynamics, plant geography and terrestrial carbon cycling in the LPJ dynamic global vegetation model. Global Change Biology 9:161–185.
Thonicke, K., S. Venevsky, S. Sitch, and W. Cramer. 2001. The role of fire disturbance for global vegetation dynamics: coupling fire into a Dynamic Global Vegetation Model. Global Ecology & Biogeography 10:661–677.

Grading System

Grading consists of individual assignments, group work and an individual final project. Throughout the semester, students will work on individual homework assignments that range from preparation for discussion to synthesizing the materials taught, with typically one assignment due each week. Additional graded assignments are group projects, where students will explore model features in more detail. Important: Grading will focus less on specific results, but assessment of the student's work will be more evaluated based on critical examination of the task and the material. Active participation and willingness to experiment is a must. The final project broadly entails some work with a land surface model, which can include model tests, scenarios, model improvements and/or further model development, and can (not necessarily required) be tailored to the student's graduate degree topic. The result of the final project will be communicated through a detailed written report, and a broader oral presentation.

Assignments turned in late results in a loss of half of the maximum points, unless late turn-in is caused by excused absences.

Letter Grade	Sum of % Points (p)
A	≥95
A-	90 ≤ p < 95
B+	85 ≤ p <90
B	80 ≤ p < 85
B-	75 ≤ p < 80
C+	70 ≤ p < 75
C	65 ≤ p < 70
C-	60 ≤ p < 65
D+	55 ≤ p < 60
D	50 ≤ p < 55
D-	45 ≤ p < 50
E	< 45

Course	Maximum % Points
Individual Assignments	35
Group Work	35
Final Project/Report	15
Final Oral Presentation	15

For information on current UF policies for assigning grade points, see
https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx

Attendance and Make-Up Work

Requirements for class attendance and make-up exams, assignments and other work are consistent with university policies that can be found at:
https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx.

Online Course Evaluation Process

Student assessment of instruction is an important part of efforts to improve teaching and learning. At the end of the semester, students are expected to provide feedback on the quality of instruction in this course using a standard set of university and college criteria. These evaluations are conducted online at **https://evaluations.ufl.edu**. Evaluations are typically open for students to complete during the last two or three weeks of the semester; students will be notified of the specific times when they are open. Summary results of these assessments are available to students at **https://evaluations.ufl.edu/results**.

Academic Honesty

As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge: *"We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity."* You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida, the following pledge is either required or implied: *"On my honor, I have neither given nor received unauthorized aid in doing this assignment."*

It is assumed that you will complete all work independently in each course unless the instructor provides explicit permission for you to collaborate on course tasks (e.g. assignments, papers, quizzes, exams). Furthermore, as part of your obligation to uphold the Honor Code, you should report any condition that facilitates academic misconduct to appropriate personnel. It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For more information regarding the Student Honor Code, please see: **http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code**.

Software Use

All faculty, staff and students of the university are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against university policies and rules, disciplinary action will be taken as appropriate.

Services for Students with Disabilities

The Disability Resource Center coordinates the needed accommodations of students with disabilities. This includes registering disabilities, recommending academic accommodations within the classroom, accessing special adaptive computer equipment, providing interpretation services and mediating faculty-student disability related issues. Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation

0001 Reid Hall, 352-392-8565, **www.dso.ufl.edu/drc/**

Campus Helping Resources

Students experiencing crises or personal problems that interfere with their general well-being are encouraged to utilize the university's counseling resources. The Counseling & Wellness Center provides confidential counseling services at no cost for currently enrolled students. Resources are available on campus for students having personal problems or lacking clear career or academic goals, which interfere with their academic performance.

- *University Counseling & Wellness Center, 3190 Radio Road, 352-392-1575,* **www.counseling.ufl.edu**

  Counseling Services

  Groups and Workshops

  Outreach and Consultation

  Self-Help Library

Wellness Coaching

- U Matter We Care, **www.umatter.ufl.edu/**

- *Career Connections Center,* First Floor JWRU, 392-1601, **https://career.ufl.edu/**.

Student Complaints:

- Residential Course: **https://sccr.dso.ufl.edu/**
- Online Course: **http://www.distance.ufl.edu/student-complaint-process**

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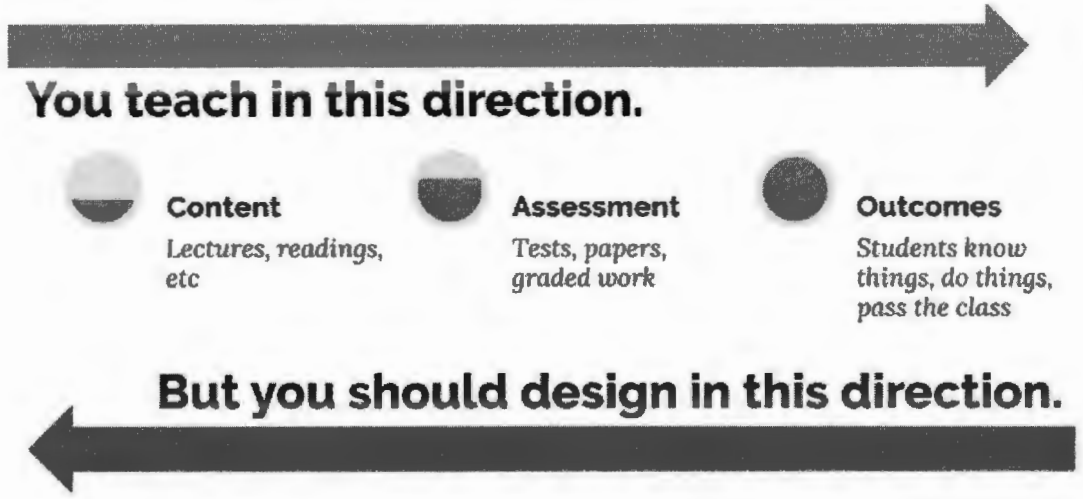
THE 3-PAGE GUIDE *to* COURSE DESIGN

A quick how-to on the basics of backwards design

to help you easily create a course that is

intentional, ***aligned***, and produces ***measurable outcomes***.



Rhiannon Pollard, 2018

1 LEARNING OBJECTIVES aka STUDENT LEARNING OUTCOMES

These are often used interchangeably or (perhaps unintelligibly) indistinguishably...

And actually, that's ok!

Because a ***learning objective*** is the framing and stating of what you hope will be the ***students' learning outcomes*** after having successfully completed your course. Don't worry about mixing up the terms in practical usage.

HOW TO WRITE GOOD OBJECTIVES

OBJECTIVES SHOULD BE SMART:

Specific *Measurable* *Achievable* *Relevant* *Time-Bound*

OBJECTIVES SHOULD FOLLOW THE ABCDS:

After reviewing this page, instructors will be able to write learning objectives using ABCD structure.

CONDITION	**AUDIENCE**	**BEHAVIOR**	**DEGREE**
under which behavior is expected	*the target*	*a verb, please*	*of expected performance*

Now you try – fill in the table with an objective.

CONDITION	AUDIENCE	BEHAVIOR	DEGREE
After completing this course,	students	will will be able to [+ verb]	according to with a score of using etc

VERBS TO AVOID

In general, there are some verbs you should avoid because they are ***not measurable or observable***:

understand **know**
explore **appreciate**
demonstrate **learn**
improve **be aware of/familiar with**

In general, there are some verbs you may avoid because they are ***not rigorous enough*** for higher education (especially graduate courses):

recall **define**
recognize **identify**
describe **summarize**

USING OBJECTIVES TO BUILD ASSESSMENTS

Now that you have some solid learning objectives for your course, the next step is to create assessments that actually measure whether those objectives are being met.

Objective

After reviewing this page, instructors will be able to write learning objectives using ABCD structure.

Assessment

Ask the instructor to demonstrate their achievement by writing objectives. Use a rubric to evaluate whether they have met the expectation.

TIP #1: An important aspect of course alignment is that your outcome behaviors must match the methods you use to assess them.

So, if your objective is that students will "describe" a process, you should not expect to assess it via a multiple choice exam. Be sure you are writing objectives that you can assess, and that you are assessing them as written!

RUBRICS MAKE LIFE SIMPLE

A rubric will make it clear to you and your students how their performance on assessments will be scored. When designed well, rubrics speed up grading and minimize subjectivity.

Rubric

Criteria	Notes	Score
Objective includes "Audience."		/5
"Behavior" is measurable and appropriate to the audience.		/10
Objective includes "Condition" under which performance is expected.		/5
Objective includes "Degree" of expected performance.		/5
Objective is SMART overall.		/10

CONSIDER INCREASING GRANULARITY

As you develop objectives for your overall course, you may find that it becomes easier to break them down into smaller, lesson- or module-based objectives for more straightforward and frequent assessment.

Perhaps your course outcomes include students producing a 20-page analysis of a topic. Each module could address and assess just one section of that paper, effectively scaffolding the student into a more significant achievement.

CURATING OR DEVELOPING THE CONTENT

Once you establish what you expect students ***to be able to do*** and how you will ***know they have achieved it***, then you know exactly what and how you need to ***teach them***.

FIRST, CHECK YOURSELF.

Do the topics you planned to teach still "fit" now that you know what you want the students to be able to do when they complete your course, and how you plan to assess them? This is the time to reconsider your ideas about the content before moving on.

KEEP THINKING BACKWARDS.

Going back to the example (and imagining the stated objective as an outcome – *see Page 1 for a reminder about terminology*):

> **Outcome**
>
> After reviewing this page, instructors will be able to write learning objectives using ABCD structure.
>
> **Assessment**
>
> Ask the instructor to demonstrate their achievement by writing objectives. Use a rubric to evaluate whether they have met the expectation.
>
> **Lesson**
>
> Present background information on objectives/outcomes, break down the components, and provide an example of what ABCD objectives look like. Then give instructors a chance to practice writing them.

Now turn this around to the "teaching direction" and what you have is tightly aligned, well-defined instruction that is essentially guaranteed to produce valid and defensible measurements of student learning.

TIP #2: Don't be afraid to use existing content for your lessons—or create your own REUSABLE content--when appropriate. Open Educational Resources (OER) can be helpful and are plentiful online.

It is completely acceptable if some of the material you teach is not original! Also, Fair Use copyright guidelines allow some flexibility for educational purposes even if the source was not originally intended for such uses.

APPENDIX: BLOOM'S TAXONOMY & "BEHAVIOR" VERB SUGGESTIONS

courtesy Global Digital Citizen Foundation

Lower Order Thinking Skills **Higher Order Thinking Skills**

Remembering

Remembering is when memory is used to produce definitions, facts or lists, or recite or retrieve material.

Bookmarking
Bullet-pointing
Copying
Defining
Describing
Duplicating
Favouriting
Finding
Googling
Highlighting
Identifying
Labeling
Liking
Listening
Listing
Locating
Matching
Memorizing
Naming
Networking
Numbering
Quoting
Recalling
Reading
Reciting
Recognizing
Recording
Retelling
Repeating
Retrieving
Searching
Selecting
Tabulating
Telling
Visualizing

Understanding

Understanding is about constructing meaning from different types of function be they written or graphic.

Advanced searching
Annotating
Associating
Boolean searches
Categorizing
Classifying
Commenting
Comparing
Contrasting
Converting
Demonstrating
Describing
Differentiating
Discussing
Discovering
Distinguishing
Estimating
Exemplifying
Explaining
Expressing
Extending
Gathering
Generalizing
Grouping
Identifying
Indicating
Inferring
Interpreting
Journaling
Paraphrasing
Predicting
Relating
Subscribing
Summarizing
Tagging
Tweeting

Applying

Applying refers to situations where learned material is used through products like models, diagrams, presentations, interviews and simulations.

Analyzing

Analyzing means breaking material or concepts into parts, determining how the parts interrelate to one another or to an overall structure or purpose.

Advertising
Appraising
Attributing
Breaking down
Calculating
Categorizing
Classifying
Comparing
Concluding
Contrasting
Correlating
Deconstructing
Deducing
Differentiating
Discriminating
Dividing
Distinguishing
Estimating
Explaining
Illustrating
Inferring
Integrating
Linking
Meshing
Mind mapping
Ordering
Organizing
Outlining
Planning
Pointing out
Prioritizing
Questioning
Separating
Structuring
Surveying

Evaluating

Evaluating means making judgements based on criteria and standards through checking and critiquing.

Arguing
Assessing
Checking
Criticizing
Commenting
Concluding
Considering
Convincing
Critiquing
Debating
Defending
Detecting
Editorializing
Experimenting
Grading
Hypothesising
Judging
Justifying
Measuring
Moderating
Monitoring
Networking
Persuading
Posting
Predicting
Rating
Recommending
Reflecting
Reframing
Reviewing
Revising
Scoring
Supporting
Testing
Validating

Creating

Creating is about putting elements together to form a functional whole, and reorganising elements into a new pattern or structure by planning or producing.

Adapting
Animating
Blogging
Building
Collaborating
Composing
Constructing
Designing
Developing
Devising
Directing
Facilitating
Filming
Formulating
Integrating
Inventing
Leading
Making
Managing
Mixing/remixing
Modifying
Negotiating
Originating
Orating
Planning
Podcasting
Producing
Programming
Publishing
Role playing
Simulating
Solving
Structuring
Video blogging
Wiki building
Writing

WRITING LEARNING OBJECTIVES

A learning objective describes what you expect students **to be able to do** as an outcome of a course, lesson, or activity.

OBJECTIVES SHOULD INCLUDE ABCD ELEMENTS

- **AUDIENCE** — who is the target?
- **BEHAVIOR** — a verb
- **CONDITION** — under which behavior is expected
- **DEGREE** — of expected performance

HOW TO WRITE GOOD OBJECTIVES - AN EXAMPLE

After reviewing this information,	CONDITION
instructors	AUDIENCE
will be able to write objectives	BEHAVIOR
using ABCD elements.	DEGREE (or criteria)

OBJECTIVES SHOULD BE S.M.A.R.T.

S	M	A	R	
clear description of expectation	can be directly assessed	outcome is realistic	consistent with overall goals	clear end point for achievement
SPECIFIC	MEASURABLE	ACHIEVABLE	RELEVANT	TIME-BOUND

Objectives, and what the students are able to do, will need to be directly assessed.

Be sure you are writing objectives you can assess, and that you are assessing them as written.

USING BLOOM'S TAXONOMY TO CREATE OBJECTIVES

Benjamin Bloom (1956) described a classification system for educational goals as they progress in complexity. Each of these taxonomic categories, updated by Anderson et al (2001), is associated with verbs that can be used to create learning objectives.

LOWER ORDER THINKING → HIGHER ORDER THINKING

COURSE OBJECTIVES SHOULD INCORPORATE MULTIPLE LEVELS OF LEARNING.

Strive for higher order thinking (analysis, evaluation, and creation levels) when applicable.

KNOWLEDGE	COMPREHENSION	APPLICATION	Critical Thinking: ANALYSIS	Critical Thinking: EVALUATION	CREATION
					Design
				EVALUATION	Plan
				Judge	Compose
			ANALYSIS	Appraise	Propose
			Compare	Estimate	Formulate
		APPLICATION	Distinguish	Evaluate	Arrange
		Use	Differentiate	Revise	Assemble
	COMPREHENSION	Employ	Diagram	Score	Collect
	Express	Interpret	Analyze	Select	Construct
KNOWLEDGE	Restate	Dramatize	Categorize	Rate	Create
Define	Identify	Sketch	Appraise	Choose	Setup
Repeat	Explain	Practice	Experiment	Measure	Organize
Name	Recognize	Illustrate	Test	Compare	Prepare
Recall	Discuss	Operate	Contrast	Value	Manage
List	Describe	Generalize	Inspect	Assess	Predict
Relate	Tell	Apply	Debate	Validate	Develop
Record	Locate	Schedule	Inventory	Critique	Generate
Underline	Report	Show	Question	Conclude	
Outline	Review	Translate	Examine		
Delineate	Summarize	Interpret	Criticize		
Specify		Solve	Relate		
State		Sketch	Solve		
Label		Justify	Calculate		
Match			Critique		

VERBS TO AVOID

not measurable

understand	appreciate	demonstrate
know	be aware of	learn
explore	familiar with	improve

VERBS TO USE SPARINGLY

lower-level cognition

recall	identify
define	describe
recognize	summarize

Bloom, B. S. (1956). *Taxonomy of Educational Objectives, Handbook I: The Cognitive Domain.* New York: David McKay Co Inc.

Anderson, L. W., Krathwohl, D. R., Airasian, P. W., Cruikshank, K. A., Mayer, R. E., Pintrich, P. R., ... & Wittrock, M. C. (2001). *A Taxonomy For Learning, Teaching, and Assessing: A Revision Of Bloom's Taxonomy of Educational Objectives, Abridged Edition.* White Plains, NY: Longman.

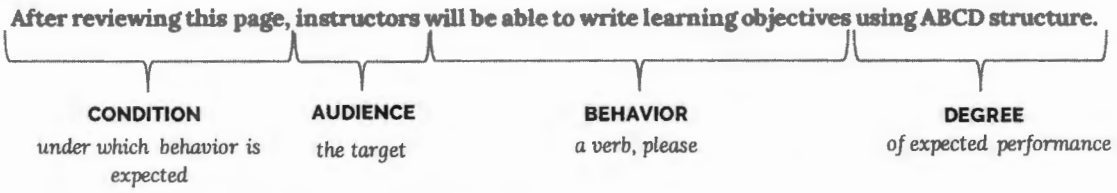
HELPFUL RESOURCES

Here are some additional resources on preparing courses, writing objectives, and best practices for teaching

WRITING OBJECTIVES: PRACTICE

Remember to be SMART: *specific, measurable, achievable, relevant,* and *time-bound.*

And remember to use the ABCDs:



Use the example row as a model for your own objectives and fill in the columns.

CONDITION	AUDIENCE	BEHAVIOR	DEGREE (can be optional)
After completing this course,	students	will will be able to [+ verb]	according to with a score of using etc

Rhiannon Pollard, 2018 – UF/IFAS School of Forest Resources & Conservation