

**CALS Curriculum Committee Meeting**  
**February 16, 2024**  
**McCarty Hall D Rm. 1044/1045**  
**1:00 p.m.**

**Via Zoom:** <https://ufl.zoom.us/j/355458614>  
Meeting ID : 355458614

**Members:** S. Ahn, D. Coenen (Chair), J. Czipulis, T. Easterly, K. Fogarty, D. Gabriel, V. Hull, P. Inglett, B. Kassas, R. Koenig J. Larkin, T. Martin, A. Mathews, H. McAuslane, G. Nunez, A. Orr, J. Scheffler, B. Schutzman, A. Watson, J. Weeks, A. Wysocki

**Agenda and Index for Materials**

**Approve Minutes from the January 19, 2024 meeting**

**Dr. Mathews: Update from UCC**

**Graduate New Course Proposal**

1. WIS 6XXX – Stakeholder Engagement in Natural Resources (req. #19467)

**Undergraduate Course Change Proposal**

2. VEC 3221C – Vegetable Production (req. #19501)

**Curriculum**

3. Proposed Update to the Curriculum Map for FRE specialization Food and Agribusiness Marketing and Management (req. #19136)
4. Proposed Update to the Academic Learning Compact for FRE specialization International Food and Resource Economics (req. #19135)
5. Proposed Change to the Animal Sciences specialization Integrative Animal Sciences (req. #19468)

**Recycled Item**

6. SWS 6722 – Soil-Landscape Modeling (req. #18500)

Previous comments from 8/25/23: **Please be sure to make all requested changes to both the UCC form and syllabus if necessary.** A motion was made by Dr. Coenen to recycle this item back to the submitter for required updates and resubmission. The motion was approved. The course objectives need to be written out separately with a specific learning verb applied to each. For assistance with course objectives please see:

[https://cals.ufl.edu/content/PDF/Faculty\\_Staff/cals-course-objectives.pdf](https://cals.ufl.edu/content/PDF/Faculty_Staff/cals-course-objectives.pdf).

Any other course goals can be included in a separate entry. The points in the grading system need to include decimal points to avoid any issue with rounding up.

**Discussion Items**

7. Campus Resources Boilerplate language on syllabus
8. Syllabus template

**CALS Curriculum Committee Meeting  
Minutes from January 19, 2024  
Submitted by James Fant**

**Members Present:** S. Ahn, D. Coenen, J. Czipulis, T. Easterly, K. Fogarty, D. Gabriel, V. Hull, P. Inglett, B. Kassas, R. Koenig, J. Larkin, T. Martin, A. Mathews, H. McAuslane, G. Nunez, A. Orr, J. Scheffler, B. Schutzman, A. Watson, J. Weeks

**Call to Order:** The College of Agricultural and Life Sciences Curriculum Committee met in McCarty Hall D Rm. 1044/1045 on January 19, 2024. Dr. Coenen called the meeting to order at 1:05 p.m.

**Previous agenda items and supporting material can be found on the CALS College Committees homepage under document archives:** <https://cals.ufl.edu/faculty-staff/committees/>

**Approval of Minutes:** A motion was made to approve the minutes from the December 15, 2023, 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.**

**Links:** Grades – <https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/>  
For Graduate Grades – <https://catalog.ufl.edu/graduate/regulations/#text>  
Syllabus Statements – [https://cals.ufl.edu/content/PDF/Faculty\\_Staff/CALS-Syllabus-Policy.pdf](https://cals.ufl.edu/content/PDF/Faculty_Staff/CALS-Syllabus-Policy.pdf)  
Absences & Make-Ups – <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>  
Writing Learning Objectives - [https://cals.ufl.edu/content/PDF/Faculty\\_Staff/cals-course-objectives.pdf](https://cals.ufl.edu/content/PDF/Faculty_Staff/cals-course-objectives.pdf).

**Update from UCC:**

Updates include items from the January 16, 2024, meeting of the UCC.

**ITEMS APPROVED:**

1. #19009 - Modification to the Leadership/UFO Minor Curriculum
2. #18862 - ENY4202 Ecology of Vector-Borne Disease credit increase from 2 to 3 credit hours
3. #18858 - ENY4230 Course title change to Urban Integrated Pest Management Internship

**ITEMS CONDITIONALLY APPROVED:**

1. #18970 - Revision to BS in Microbiology and Cell Science Curriculum for non-prehealth students
  - a. Upload track changes document for the catalog
  - b. Check/add common prerequisites.
2. #18436 - HUN2XXX Feeding the Planet

- a. Errors in Title on submission form
- b. Course description needs to match catalog submission.
3. #18574 - WIS 4501: Intro to Wildlife Population Ecology prerequisite update
  - a. Prerequisite change approved, but catalog does to match course description.

#### OTHER UPDATES:

1. University wide Undergraduate Coordinator Listserv has been established and is moderated in the Provost's Office
2. Prehealth track identification. Students on any prehealth track will be encouraged to "check" this in SIS and update throughout career at UF. All licensed health care positions can be checked or a general prehealth indication. Improve tracking/advising.

#### Proposed Curriculum Changes

1. Proposed BSGEM: Geomatics – Geospatial Analysis Curriculum Change (req. #19361)

This item was reviewed with item #2. All comments apply to both items unless otherwise stated. A motion was made by Dr. Koenig to approve these items with a change required. The motion was approved. In semester 5 of the proposed syllabus remove the first #3 across from "Select one." This is confusing due to the second #3 directly below.
2. Proposed BSGEM: Geomatics – Surveying and Mapping Curriculum Change (req. #19423)

See item #1.

#### Recycled Item

3. AOM 3734 – Irrigation Principles and Practices in Florida (req. #18552)

Previous comments: A motion was made by Dr. Watson to recycle this item back to the submitter for required updates and resubmission. The submission requires a new syllabus and a CALS checklist.

A motion was made by Dr. Martin to approve this item as submitted. The motion was approved.

#### Discussion Topics

4. Campus Resources Tab in Canvas: Should a statement referring students to this tab replace the CALS boilerplate? The committee was supportive of this idea. There were suggestions made such as adding a direct link in the syllabus to the Whole Gator app and inclusion of a QR code. Dr. Mathews will make edits to the proposal and present the item at the next meeting.
5. Provide feedback regarding a draft syllabus template (optional) for CALS UFO courses that meets QM requirements. The template could be provided as a guide for all CALS courses. This is a non-voting item. Suggestions were made by the committee. Dr. Mathews will discuss these suggestions with COLT. The committee will review the item again at the next meeting.

The meeting was adjourned at **1:58** p.m.



# Cover Sheet: Request 19467

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## WIS6934- Stakeholder Engagement in Natural Resources

### Info

Process	Course New Grad
Status	Pending at CALS - College of Agricultural and Life Sciences
Submitter	Nia Morales n.morales@ufl.edu
Created	1/24/2024 3:20:41 PM
Updated	2/5/2024 3:11:39 PM
Description of request	This request is for a permanent course number for WIS6934, Stakeholder engagement in natural resources. This course exposes students to the importance of engaging with diverse stakeholders and communities in the context of natural resource decision-making. The course will enhance skills in planning and implementing stakeholder engagement processes and in monitoring and evaluation of these processes.

### Actions

Step	Status	Group	User	Comment	Updated
Department	Approved	CALS - Wildlife Ecology and Conservation 60470000	Eric Hellgren		1/25/2024
No document changes					
College	Pending	CALS - College of Agricultural and Life Sciences			1/25/2024
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 19467

### Info

**Request:** WIS6934- Stakeholder Engagement in Natural Resources

**Description of request:** This request is for a permanent course number for WIS6934, Stakeholder engagement in natural resources. This course exposes students to the importance of engaging with diverse stakeholders and communities in the context of natural resource decision-making. The course will enhance skills in planning and implementing stakeholder engagement processes and in monitoring and evaluation of these processes.

**Submitter:** Nia Morales n.morales@ufl.edu

**Created:** 2/5/2024 3:10:24 PM

**Form version:** 3

### Responses

**Recommended Prefix** WIS

**Course Level** 6

**Course Number** xxx

**Lab Code** None

**Category of Instruction** Intermediate

**Course Title** Stakeholder Engagement in Natural Resources

**Transcript Title** Stakeholder Engagement in NR

**Degree Type** Graduate

**Delivery Method(s)** On-Campus

**Co-Listing** No

**Effective Term** Fall

**Effective Year** Earliest Available

**Rotating Topic** No

**Repeatable Credit?** No

**Amount of Credit** 3

**S/U Only?** No

**Contact Type** Regularly Scheduled

**Course Type** Lecture

**Weekly Contact Hours** 3

**Course Description** This course introduces the concept of stakeholders and builds understanding of diverse perspectives of people that affect or are affected by natural resource decisions. The course also provides students with a variety of tools to engage with communities/groups for effective decision-making.

**Prerequisites** none

**Rationale and Placement in Curriculum** Over the course of a conservation professional's career, they will likely have to interact with stakeholders and others who are directly or indirectly impacted by natural resource decision-making. This course exposes graduate students to the concepts related to engagement with diverse stakeholders, the importance of understanding these various groups' positions, interests, and needs, and gives them skills and techniques to effectively engage with communities. Currently, in the wildlife department, there are no other courses that focus specifically on stakeholder and community engagement.

**Course Objectives** In this course students will:

- Define stakeholders and assess the importance of engaging with communities for natural resource decision-making
- Interpret positions, interests, and needs of diverse stakeholders in order to develop effective and appropriate methods of engagement

- Be able to effectively use a variety of tools to engage with stakeholders and be able to identify when to use these tools

- Be able to evaluate the success of stakeholder engagement using appropriate techniques

**Course Textbook(s) and/or Other Assigned Reading** - Sharfstein, J.M. 2016. Banishing "Stakeholders". *The Millbank Quarterly*, 94(3) 476-479

- Leong, K.M., Decker, D., and Luaber, B. 2012. Chapter 3: Stakeholders as beneficiaries of wildlife management in *Human Dimensions of Wildlife Management*.

- Sterling, E. et al. 2017. Assessing the evidence for stakeholder engagement in biodiversity conservation. *Biological Conservation*, 209, 159-171

- Reed, M. 2008. Stakeholder participation for environmental management: A literature review. *Biological Conservation*, 141, 2417-2431

- Grimble, R. 1998. *Stakeholder Methodologies in Natural Resource Management*. Natural Resources Institute

- Haddaway, N.R., et al. 2017. A framework for stakeholder engagement during systematic reviews and maps in environmental management. *Environmental Evidence*, 6 (11).

- The MSP Guide. 2016. Practical Action Publishing. ISBN 978-1-85339-965-7

- National Audubon Society. 2011. *Tools of Engagement: A Toolkit for Engaging People in Conservation*

- Talley, J.L., Schneider, J., and Lindquist, E. 2016. A simplified approach to stakeholder engagement in natural resource management: The five-feature framework. *Ecology and Society*, 21(4).

- Arnold, J. and Bartels, W.L. Ch 12: Participatory methods for measuring and monitoring governance.

- Kaner. Ch 9: Alternatives to open discussion in *Facilitator's Guide to Participatory Decision-Making*.

- Bhattacharjee, A. 2012. *Social Science Research: Principles, methods, and practices*. University of South Florida

- Coleman, E., et al. 2019. Stakeholder engagement increases transparency, satisfaction, and civic action. *PNAS* 116(49)

- Ford, J. et al. 2020. Factors affecting trust among natural resource stakeholders, partners, and strategic alliance members: A meta-analytic investigation. *Frontiers in Communication*, 5(9)

- Fisher, R and Ury, W. 1981. *Getting to Yes*

- Cooke, S. et al. 2017. Considerations for effective science communication. *FACETS* 2, 233-248

- Pettigrew, T. 2021. Advancing intergroup contact theory. *Society for the Psychological Study of Social Issues*, 77, 258-273

- Iyengar, S. and Massey, D. 2019. Scientific Communication in a Post-truth Society. *PNAS*, 116(16)

- Cvitanovic, et al. 2021. Strategies for building and managing trust to enable knowledge exchange at the interface of environmental science and policy. *Environmental Science and Policy*, 123

- Turner, R. et al. Trust, confidence, and equity affect the legitimacy of natural resource governance. 2016. *Ecology and Society*. 21(3)

- *BiodivERsA Stakeholder Engagement Handbook*. 2014.

**Weekly Schedule of Topics** Week 1 (8/24): What are Stakeholders?

Week 2 (8/29 & 8/31): Understanding Stakeholders

Week 3 (9/5 & 9/7): Frameworks for SH engagement

Week 4 (9/12 & 9/14): Methods and tools of engagement Pt I (Engagement Methods)

Week 5 (9/19 & 9/21): Methods and tools of engagement Pt II (Social Science Methods)

Week 6 (9/26 & 9/28): Stakeholder Engagement Case Study

Week 7 (10/3 & 10/5): Negotiation & Conflict

Week 8 (10/10 & 10/12): Negotiation Case Study

Week 9 (10/17 & 10/19): Science Communication

Week 10 (10/24 & 10/26): Science Communication II

Week 11 (10/31 & 11/2): Trust, Power, and Equity SH engagement

Week 12 (11/7 & 11/9): Trust, Power, and Equity SH engagement II

Week 13 (11/14 & 11/16): Evaluation of SH engagement

Week 15 (11/28 & 11/30): Presentations

**Grading Scheme** Concept Map 1; 10 pts; In class, create a concept map of your understanding of stakeholder engagement in natural resource conservation

Stakeholder Matrix; 10 pts; Fill out a stakeholder matrix based on the video watched in class

Semester Project Pt I: 100 pts; Issue and background. See Canvas for detailed instructions.

Wolf Case Study: 20 pts; Participation & debrief

Semester Project Pt II: 100 pts; Literature review and methods. See Canvas for detailed instructions.

Harvard Negotiation: 20 pts; Participation & debrief

Semester Project Pt III: 100 pts; Expanded methodology. See Canvas for detailed instructions.

Semester Project Presentation: 100pts; 5 minute presentation of your stakeholder engagement plan

Presentation Peer Review: 20 pts; peer review of your presentation

Concept Map II: 10 pts; In class, create a concept map of your understanding of stakeholder engagement in natural resource conservation

Overall Participation: 10 pts; 10 pts for consistent engagement and participation in class, 5 pts for partial engagement, 0 pts for consistent absence or lack of engagement

**Instructor(s)** Nia Morales

**Attendance & Make-up** Yes

**Accommodations** Yes

**UF Grading Policies for assigning Grade Points** Yes

**Course Evaluation Policy** Yes

# CALS Curriculum Committee

## Submission Checklist

**NOTE: This checklist must be included with all course and certificate submissions.**

The checklist below is intended to facilitate course and certificate submissions to the University of Florida Academic Approval Tracking System (<https://approval.ufl.edu/>). The checklist consists of the most common items that can cause a submission to require changes or be recycled. Contrary to information provided on the UF approval site, the CALS Curriculum Committee requires a syllabus be submitted with each new course or course modification request. Please note that submitters are encouraged to attend the CALS CC meeting at which their item is being reviewed. This allows the submitter to answer any potential questions that may arise that could cause the item to not be approved. Also, be aware that when completing the UCC form the section Description of Request is asking for a brief statement about what you are doing. This is **not** the place for a course description. A statement such as “Proposal of a new undergraduate course” is all that is needed. Please do not submit documents in pdf format. All documents should be submitted in Word to facilitate editing on our end if necessary.

**CHECKLIST: PLEASE INITIAL OR MARK N/A FOR EACH STATEMENT TO INDICATE YOUR COMPLIANCE.**

It is required when making a submission that you consult your department’s representative to the CALS CC. A list of current members can be found on the committee site located at: <https://cals.ufl.edu/faculty-staff/committees/>.

You **MUST** comply with the CALS Syllabus Policy, including items 1 through 8 and all standard syllabus statements. This document can be viewed at the committee site(<https://cals.ufl.edu/faculty-staff/committees/>) by clicking on the Curriculum Committee – Information & Documents heading and scrolling down to Forms, Checklists, and Other documents. The other items included here are all very helpful when making a curriculum submission. Some will be mentioned in other checklist items below.

Submission of a course modification requires both the current version of the course syllabus and the proposed version.

Joint course submissions must include 1.) both graduate and undergraduate syllabuses and 2.) a separate document outlining the substantial (more than one) differences in assignments between the two courses. These assignments must account for at least a 15% difference in graded material between the two levels. If this is a new course submission both courses must be submitted for approval simultaneously.

The course description on the UCC form and in the syllabus must match. Any other information you wish to include needs to be under a different heading such as background or additional information.

The course learning objectives must be consistent with Bloom’s taxonomy. Please see the following link at the CALS Curriculum site. ([https://cals.ufl.edu/content/PDF/Faculty\\_Staff/cals-course-objectives.pdf](https://cals.ufl.edu/content/PDF/Faculty_Staff/cals-course-objectives.pdf) ). Do not use the words demonstrate or understand when listing learning objectives.

X The course schedule should be concise and include the appropriate number of weeks in the semester.

X All graduate course submissions must include a reading list if a textbook is not required. The reading list should include at least some current readings (within the last 5 years). All readings do not need to be current.

X Outside consultations are required if there is a possibility of the proposed course covering material taught in another department or college on campus. There must be a consult form completed by the chair of the department from who you are seeking the consult. Instructors may provide additional consults. The form can be found at: <https://approval.ufl.edu/policies/external-consultations/>.

X Prerequisite courses are required for 3000 and 4000 level courses. This line of the approval form cannot be “none” or left blank. Junior or senior standing is an acceptable option. A phrase such as “a course in basic biology” is not acceptable.

X Decimal points must be included in the grading scale if grade cut-offs are based on percentages. While this is not a university policy it is a CALS standard practice to avoid any confusion when final grades for the course are determined.

X The attendance and make-up policy in a syllabus cannot contradict the university’s policy. Do not include any additional wording to this policy. A statement and link regarding this is included in the CALS Syllabus Statements. For the approval process the college suggests a less is more view when it comes to this policy.

X The most recent version of the CALS Syllabus Statements boiler plate must be included in all syllabuses. This document is included in the CALS Syllabus Policy and can be copied and pasted to the syllabus. Do not use the boilerplate statements from an old syllabus as they are likely to be out of date.

### **Certificates**

If proposing a new undergraduate or graduate level certificate that includes any courses outside of the submitters department a statement regarding any possible impact on those courses needs to be included. An email from the instructor is acceptable. Also, any courses required for the certificate must have permanent prefixes and course numbers. The submission must include intended catalog copy. (Contact Dr. Joel Brendemuhl ([brendj@ufl.edu](mailto:brendj@ufl.edu)) for further instruction)

# WIS6934: Stakeholder Engagement in Natural Resources

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**3 credits**

## I. Course Information

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Fall 2023

Meeting Day/Time: Tuesday: Period 4 (10:40am-11:30 am) & Thursday Period 4-5 (10:40am-12:35pm)

Location: Tuesday NZH 0219, Thursday NZH 0222

### **Instructor**

Nia Morales, Assistant Professor of Human Dimensions

Email: [n.morales@ufl.edu](mailto:n.morales@ufl.edu)

Office location: 316 Newins-Ziegler Hall

Office hours: TBA (and by appointment)

Phone: (352) 846-0630

### **Course Description**

This course introduces the concept of stakeholders and builds understanding of diverse perspectives of people that affect or are affected by natural resource decisions. The course also provides students with a variety of tools to engage with communities/groups for effective decision-making.

### **Learning Objectives**

In this course students will:

- Define stakeholders and assess the importance of engaging with communities for natural resource decision-making
- Interpret positions, interests, and needs of diverse stakeholders in order to develop effective and appropriate methods of engagement
- Be able to effectively use a variety of tools to engage with stakeholders and be able to identify when to use these tools
- Be able to evaluate the success of stakeholder engagement using appropriate techniques

### **Required Textbook**

None. Readings will be posted on Canvas

## II. Coursework & Schedule

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### 1. List of Graded Work

Assignment	Description	Requirements	Due Date	Points
Concept Map 1	In class, create a concept map of your understanding of stakeholder engagement in natural resource conservation	Submit map at end of class	8/24	10
Stakeholder Matrix	Fill out a stakeholder matrix based on the video watched in class	Submit to Canvas	9/10	10
Semester Project Pt I	Issue and background. See Canvas for detailed instructions.	Submit to Canvas	9/24	100
Wolf Case Study	Participation & debrief	Peer review and debrief submitted to Canvas	10/15	20
Semester Project Pt II	Literature review and methods. See Canvas for detailed instructions.	Submit to Canvas	10/22	100
Harvard Negotiation	Participation & debrief	Peer review and debrief submitted to Canvas	10/29	20
Semester Project Pt III	Expanded methodology. See Canvas for detailed instructions.	Submit to Canvas	11/12	100
Semester Project Presentation	Upload presentation. See Canvas for detailed instructions.	Submit to Canvas	11/26	100
Presentation Peer Review	See Canvas for detailed instructions.	Submit to Canvas	12/5	20
Concept Map II	Create a concept map of your understanding of stakeholder engagement in natural resource conservation	Due at end of class	12/5	10
Overall Participation				10
			<b>Total</b>	<b>500</b>



## 2. Weekly Course Schedule

Date	Topic	Assigned Work Due
<b>Week 1 (8/24): What are Stakeholders?</b>		
Readings	Decker ch 3	Concept map I (turn in at end of class 8/24)
Activities		
<b>Week 2 (8/29 &amp; 8/31): Understanding Stakeholders</b>		
Readings	Reed 2008 & Sterling 2017	
Activities		
<b>Week 3 (9/5 &amp; 9/7): Frameworks for SH engagement</b>		
Readings	Choose a framework and browse the document	Stakeholder matrix from week 2 video due 9/10
Activities		
<b>Week 4 (9/12 &amp; 9/14): Methods and tools of engagement Pt I (Engagement Methods)</b>		
Readings	Arnold and Bartels Ch12 & Kaner Ch9	
Activities	9/14- Guest Lecture, Wendy-Lin Bartels	
<b>Week 5 (9/19 &amp; 9/21): Methods and tools of engagement Pt II (Social Science Methods)</b>		
Readings	Bhattacharjee 2012 Ch 9 & 11 Jacobson Ch 5	Part I of semester project due 9/24
Activities	Roles assigned for next week	
<b>Week 6 (9/26 &amp; 9/28): Stakeholder Engagement Case Study</b>		
Readings	Background and supplemental info for your roles	Please read your supplemental materials before class on Tuesday!
Activities	Wolf Case Study	
<b>Week 7 (10/3 &amp; 10/5): Negotiation &amp; Conflict</b>		
Readings	Getting to Yes (skim)	
Activities	Roles assigned for next week	
<b>Week 8 (10/10 &amp; 10/12): Negotiation Case Study</b>		
Readings	Background info for your roles	Wolf Case Study Debrief due 10/15
Activities		

<b>Week 9 (10/17 &amp; 10/19): Science Communication</b>		
Readings	Cooke 2017 and Bourne 2016	Part II of semester project due 10/22
Activities		
<b>Week 10 (10/24 &amp; 10/26): Science Communication II</b>		
Readings	TBD	Negotiation Debrief due 10/29
Activities	10/24- Guest Lecture: Jamie Loizzo	
<b>Week 11 (10/31 &amp; 11/2): Trust, Power, and Equity SH engagement</b>		
Readings	Ford et al. 2020	
Activities		
<b>Week 12 (11/7 &amp; 11/9) Env &amp; Social Justice</b>		
Readings	TBD	Part III of semester project due 11/12
Activities		
<b>Week 13 (11/14 &amp; 11/16): Evaluation of SH engagement</b>		
Readings	Jacobson Ch 11	
Activities		
<b>Week 14 (11/21 &amp; 11/23): No Class this Week- Thanksgiving</b>		
Readings	None	Upload presentation by 11/26
Activities	None	
<b>Week 15 (11/28 &amp; 11/30): Presentations</b>		
Readings	None	
Activities	Present semester projects	
<b>Week 16 (12/4): Presentations &amp; Course Evaluation</b>		
Readings	None	Concept map II due at end of class Peer reviews due at end of class
Activities		

### 3. Statement on Attendance and Participation

#### Attendance and Participation:

Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at: <https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/>

Attendance: will be taken daily and recorded. You are allowed four “personal days” for the semester, after which each absence that does not meet university criteria for “excused” will result in a two-point deduction from your final grade.

Participation: Consistent informed, thoughtful, and considerate class participation is expected and will be evaluated using the rubric below.

NOTE: If you have personal issues that prohibit you from joining freely in class discussion, e.g., shyness, language barriers, etc., see the instructor as soon as possible to discuss alternative modes of participation.

### 4. Grading Scale

For information on how UF assigns grade points, visit: <https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/>

A	94 – 100% of possible points		C	74 – 76%
A-	90 – 93%		C-	70 – 73%
B+	87 – 89%		D+	67 – 69%
B	84 – 86%		D	64 – 66%
B-	80 – 83%		D-	60 – 63%
C+	77 – 79%		E	<60

## IV. Required Policies

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### 5. Students Requiring Accommodation

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the disability Resource Center by visiting <https://disability.ufl.edu/students/get-started/>. It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester.

### 6. UF Evaluations Process

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they

receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

## **7. 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.

## **8. Campus Resources**

### **Health and Wellness**

U Matter, We Care:

If you or a friend is in distress, please contact [umatter@ufl.edu](mailto:umatter@ufl.edu) or 352 392-1575 so that a team member can reach out to the student.

Counseling and Wellness Center: [counseling.ufl.edu/cwc](http://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 [police.ufl.edu](http://police.ufl.edu).

### **Academic Resources**

E-learning technical support, 352-392-4357 (select option 2) or e-mail to [Learning-support@ufl.edu](mailto:Learning-support@ufl.edu).

Career Resource Center, Reitz Union, 392-1601. Career assistance and counseling.

Library Support, 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.

Writing Studio, 302 Tigert Hall, 846-1138. Help brainstorming, formatting, and writing papers.

## Student Complaints

Residential Course:

[https://www.dso.ufl.edu/documents/UF\\_Complaints\\_policy.pdf](https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf)

Online Course:

<http://www.distance.ufl.edu/student-complaint-proces>

## 9. The Writing Studio

The writing studio is committed to helping University of Florida students meet their academic and professional goals by becoming better writers. Visit the writing studio online at <http://writing.ufl.edu/writing-studio/> or in 2215 Turlington Hall for one-on-one consultations and workshops.

# Cover Sheet: Request 19501

## VEC3221C - Vegetable Production

### Info

Process	Course Modify Ugrad
Status	Pending at CALS - College of Agricultural and Life Sciences
Submitter	Gerardo Nunez Villegas g.nunez@ufl.edu
Created	1/31/2024 6:37:09 PM
Updated	1/31/2024 8:11:26 PM
Description of request	We request to change the number of credits from 4 to 3 and to change the course pre-requisites.

### Actions

Step	Status	Group	User	Comment	Updated
Department	Approved	CALS - Horticultural Sciences 60230000	Christopher Gunter		1/31/2024
CALS CC Checklist.pdf Petition_to_CALSCurriculumCommitee.pdf Current syllabus - VEC3221C.pdf Proposed syllabus - VEC 3221.pdf					1/31/2024 1/31/2024 1/31/2024 1/31/2024
College	Pending	CALS - College of Agricultural and Life Sciences			1/31/2024
No document changes					
University Curriculum Committee					
No document changes					
Statewide Course Numbering System					
No document changes					
Office of the Registrar					
No document changes					
Catalog					
No document changes					
Student Academic Support System					
No document changes					
College Notified					
No document changes					

## Course|Modify for request 19501

### Info

**Request:** VEC3221C - Vegetable Production

**Description of request:** We request to change the number of credits from 4 to 3 and to change the course pre-requisites.

**Submitter:** Gerardo Nunez Villegas g.nunez@ufl.edu

**Created:** 1/31/2024 6:29:58 PM

**Form version:** 1

### Responses

**Current Prefix** VEC

**Course Level** 3

**Lab Code** C

**Number** 221

**Course Title** Vegetable Production

**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?** No

**Change Transcript Title?** No

**Change Credit Hours?** Yes

**Current Credit Hours** 4

**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

**Multiple Offerings in a Single Semester** No

**Change Course Description?** No

**Change Course Objectives** No

**Change Prerequisites?** Yes

**Current Prerequisites** None

**Proposed Prerequisites** BOT2010C or

BSC2010C & BSC2010L or

BSC2011 & BSC2011L

**Change Co-requisites?** No

**Rationale** Modifications in this course so that the course can reduce redundancy in the curriculum, and better fit with elective requirements for the Plant Science Curriculum.

1) Reduction in lectures and reduction in the number of credits from 4 credits to 3 credits.

The course covers topics relevant to vegetable crop production and certain lecture topics on seed technology, soils, pest and disease management, and hydroponic production were reduced in the revised syllabus so that some introductory details previously taught in other courses need not be repeated. Accordingly the number of credits are reduced from 4 to 3 credits.

2. Addition of pre-requisite courses.

I would like to change the pre-requisite for this course from 'none' to BOT2010C or BSC2010 and 2010L or BSC2011 and 2011L. Historically VEC3221C was attended by many non-majors and Agricultural Education students. However, enrollment records from recent years show a significant reduction in non-major enrollment. Inclusion of Biology pre-requisite courses will streamline this course toward those who aim to major in this area and meet the Plant Science curriculum requirement better.



# CALS Curriculum Committee

## Submission Checklist

**NOTE: This checklist must be included with all course and certificate submissions.**

The checklist below is intended to facilitate course and certificate submissions to the University of Florida Academic Approval Tracking System (<https://approval.ufl.edu/>). The checklist consists of the most common items that can cause a submission to require changes or be recycled. Contrary to information provided on the UF approval site, the CALS Curriculum Committee requires a syllabus be submitted with each new course or course modification request. Please note that submitters are encouraged to attend the CALS CC meeting at which their item is being reviewed. This allows the submitter to answer any potential questions that may arise that could cause the item to not be approved. Also, be aware that when completing the UCC form the section Description of Request is asking for a brief statement about what you are doing. This is **not** the place for a course description. A statement such as “Proposal of a new undergraduate course” is all that is needed. Please do not submit documents in pdf format. All documents should be submitted in Word to facilitate editing on our end if necessary.

**CHECKLIST: PLEASE INITIAL OR MARK N/A FOR EACH STATEMENT TO INDICATE YOUR COMPLIANCE.**

GN It is required when making a submission that you consult your department’s representative to the CALS CC. A list of current members can be found on the committee site located at: <https://cals.ufl.edu/faculty-staff/committees/>.

GN You **MUST** comply with the CALS Syllabus Policy, including items 1 through 8 and all standard syllabus statements. This document can be viewed at the committee site(<https://cals.ufl.edu/faculty-staff/committees/>) by clicking on the Curriculum Committee – Information & Documents heading and scrolling down to Forms, Checklists, and Other documents. The other items included here are all very helpful when making a curriculum submission. Some will be mentioned in other checklist items below.

GN Submission of a course modification requires both the current version of the course syllabus and the proposed version.

GN Joint course submissions must include 1.) both graduate and undergraduate syllabuses and 2.) a separate document outlining the substantial (more than one) differences in assignments between the two courses. These assignments must account for at least a 15% difference in graded material between the two levels. If this is a new course submission both courses must be submitted for approval simultaneously.

GN The course description on the UCC form and in the syllabus must match. Any other information you wish to include needs to be under a different heading such as background or additional information.

GN The course learning objectives must be consistent with Bloom’s taxonomy. Please see the following link at the CALS Curriculum site. ([https://cals.ufl.edu/content/PDF/Faculty\\_Staff/cals-course-objectives.pdf](https://cals.ufl.edu/content/PDF/Faculty_Staff/cals-course-objectives.pdf) ). Do not use the words demonstrate or understand when listing learning objectives.

\_GN\_\_ The course schedule should be concise and include the appropriate number of weeks in the semester.

\_GN\_\_ All graduate course submissions must include a reading list if a textbook is not required. The reading list should include at least some current readings (within the last 5 years). All readings do not need to be current.

\_GN\_\_ Outside consultations are required if there is a possibility of the proposed course covering material taught in another department or college on campus. There must be a consult form completed by the chair of the department from who you are seeking the consult. Instructors may provide additional consults. The form can be found at: <https://approval.ufl.edu/policies/external-consultations/>.

\_GN\_\_ Prerequisite courses are required for 3000 and 4000 level courses. This line of the approval form cannot be “none” or left blank. Junior or senior standing is an acceptable option. A phrase such as “a course in basic biology” is not acceptable.

\_GN\_\_ Decimal points must be included in the grading scale if grade cut-offs are based on percentages. While this is not a university policy it is a CALS standard practice to avoid any confusion when final grades for the course are determined.

\_GN\_\_ The attendance and make-up policy in a syllabus cannot contradict the university’s policy. Do not include any additional wording to this policy. A statement and link regarding this is included in the CALS Syllabus Statements. For the approval process the college suggests a less is more view when it comes to this policy.

\_GN\_\_ The most recent version of the CALS Syllabus Statements boiler plate must be included in all syllabuses. This document is included in the CALS Syllabus Policy and can be copied and pasted to the syllabus. Do not use the boilerplate statements from an old syllabus as they are likely to be out of date.

## **Certificates**

If proposing a new undergraduate or graduate level certificate that includes any courses outside of the submitters department a statement regarding any possible impact on those courses needs to be included. An email from the instructor is acceptable. Also, any courses required for the certificate must have permanent prefixes and course numbers. The submission must include intended catalog copy. (Contact Dr. Joel Brendemuhl ([brendj@ufl.edu](mailto:brendj@ufl.edu)) for further instruction)

Oct 31, 2023

Chair,  
UF CALS Curriculum Committee,  
University of Florida, Gainesville, FL 32611

Dear Colleagues,

I am writing this to request a modification in an undergraduate course VEC3221C Commercial Vegetable Crop Production.

I have been teaching this 4-credit course during Fall semesters and the course has been serving as an elective for majors in the Horticultural Sciences undergraduate program. I would like to request modifications in this course so that the course can reduce redundancy in the curriculum, and better fit with elective requirements for the Plant Science Curriculum, as Horticultural Sciences teaching program will merge into Plant Science.

I have listed below the changes made in the proposed new syllabus along with the rationales. Both the current syllabus and the proposed new syllabus pdf files are enclosed.

**1. Reduction in lectures and reduction in the number of credits from 4 credits to 3 credits.**

The course covers topics relevant to vegetable crop production and certain lecture topics on seed technology, soils, pest and disease management, and hydroponic production were reduced in the revised syllabus so that some introductory details previously taught in other courses need not be repeated. Accordingly the number of credits are reduced from 4 to 3 credits.

**2. Addition of pre-requisite courses.**

I would like to change the pre-requisite for this course from 'none' to BOT2010C or BSC2010 and 2010L or BSC2011 and 2011L. Historically VEC3221C was attended by many non-majors and Agricultural Education students. However, enrollment records from recent years show a significant reduction in non-major enrollment. Inclusion of Biology pre-requisite courses will streamline this course toward those who aim to major in this area and meet the Plant Science curriculum requirement better.

**3. Change in class times.**

VEC3221C was taught Mon-Wed-Friday cycle, and the lab is on Friday evenings. Reducing this course to 3 credits, now I propose to teach it with Wed and Thu schedule as listed in the revised syllabus, field labs being on Thu evenings.

I hope that with the proposed changes will help more students benefit from this hands-on course. None of the laboratory section exercises were changed between the current and the proposed new syllabus.

Plant Science major students typically take 3 credits of electives in semester 5 and 6 credits of electives in semester 6. The proposed course will best fit with that requirement.

Please reach me if you need additional information.

Sincerely,

A handwritten signature in black ink, reading "B. Rathinasabapathi". The signature is written in a cursive style with a horizontal line underneath the name.

Bala Rathinasabapathi, Professor, Horticultural Sciences  
Instructor, VEC3221C Commercial Vegetable Production

**UNIVERSITY OF FLORIDA**  
Horticultural Sciences Department  
**VEC 3221C Fall 2023 Section 1172 Class 18154**

**Commercial Vegetable Production**

**Instructor:** Bala Rathinasabapathi, Ph.D.  
Room 2247, Fifield Hall  
Phone 352-273-4847  
Cell: 352-339-4269

Lecture: Mon, Wed and Fri 7<sup>th</sup> Period (1:55 pm – 2:45 pm) 2316 Fifield Hall  
Lab Fri 8<sup>th</sup> – 9<sup>th</sup> period (3:00 pm – 4:55 pm).  
Student vegetable gardens, Hull Road, Across from Fifield Hall

Office hours: By Appointment; e-mail [brath@ufl.edu](mailto:brath@ufl.edu)  
Course Homepage: Connect via Canvas

**Optional Textbook:**

Producing Vegetable Crops by Swiader JM and Ware GW., Interstate Publishers Inc., Danville, Illinois, 5<sup>th</sup> Edition, 2002. ISBN 0-8134-3203-0.

**Other Optional References:**

Vegetable Production Handbook For Florida 2022-2023, by Dittmar, PJ, Agehara, S., Dufault, N (Eds.), University of Florida, IFAS Extension. 670 pp. (For a Free download: <https://edis.ifas.ufl.edu/publication/CV292>)

Articles from Florida Cooperative Extension Service, Journal of the American Society of Horticultural Science, Hortscience and American Vegetable Grower. Available via Canvas.

**Objective:**

The principles and practices of successful commercial vegetable production will be presented. Crop requirements, growth patterns and production techniques are emphasized along with discussion of consumption/marketing patterns in the U.S. and Florida production areas. The laboratory involves field trips to farming operations and guest lectures from individuals in the vegetable production industry. Each member of the class will also develop a vegetable garden with different crops suitable for Fall production and participate in vegetable crop production activities.

**General Syllabus:**

Lecture information and laboratory experiences will instruct the student in the specific production practices and technology, as well as other important information required to successfully grow various vegetable crops.

# Current syllabus

For each crop grouping, the student will learn:

1. The botanical classification, horticultural types, origin, and history of each crop.
2. The scope and importance of production in the US, including where the crop is grown, commercial acreage, value and average yields.
3. Important aspects of vegetable growth and development, especially in relation to plant response to environmental factors and how they may affect production practices.
4. Specific climatic and cultural requirements of each crop.
5. Methods of planting, plant spacing and populations, and specialized procedures such as seed treatments.
6. Standard and evolving production practices and requirements necessary for successful production.
7. Leading cultivars and their important characteristics and new developments in breeding of specific crops.
8. Pests and significant physiological disorders.
9. Harvesting procedures, post-harvest handling of crops and food safety issues.

**Format:**

4-credit course for majors and non-majors. No pre-requisites.

**Evaluation:**

Students will be evaluated based on the following:

Class attendance & participation	50 points
Lab reports & field trip reports	100 points
Research project	100 points
Class presentation	100 points
Tests	100 points
Final Exam	50 points
TOTAL	500 points

\* Letter grades for the course will be assigned according to the chart below:

90-100 = A; 87-89 = A-; 84-86 = B+; 80-83 = B; 77-79 = B-; 74-76 = C+; 70-73 = C; 67-69 C-; 64-66 = D+; 60-63 = D; 57-59 = D-; 56-below = E.

\* Class attendance will be marked each day either at the beginning or end or middle of the class period.

## **Learning Outcomes:**

By the completion of this course, the conscientious student should be able to

- Explain production details for major vegetables.
- Diagnose problems related to soil fertility, irrigation and pests of major vegetables.
- Find sustainable solutions to problems related to soil fertility, irrigation and pests of major vegetables.
- Choose vegetable cultivars suitable for a given region or production system.
- Enumerate advantages and disadvantages of various production systems.
- Propagate and cultivate a vegetable garden
- Critically analyze production and marketing data and
- Estimate cost of production for major vegetables.

## **Lab and field trip reports, Written assignment and Class presentations:**

(1) Transplant Production (10 points). Each student will generate vegetable transplants of at least 2 vegetable crops. Instructions, seeds and greenhouse space will be provided. Quality of the transplants and a report of this activity will be evaluated. This report should include at least one photo each of (a) seeds, (b) early seedling and (c) the final transplant for two vegetable crops and (d) a description of key factors that influence the quality of the transplants.

(2) Field Production of Vegetables (40 points). The students will cultivate five different vegetable crops as part of their laboratory. The student will keep a field notebook for weekly observations and write a final report for evaluation. The final report should contain information about the crops and their varieties, crop stand, weather, irrigation, soil fertility management, insect pests, diseases and weeds encountered and notes on how the problems were handled and the quality and quantity of vegetables harvested. Irrigation will be managed by the staff.

(3) Container gardens (20 points). Facilities to set up container gardens of vegetables, greenhouse space, materials and instruction will be provided. Each student will grow different vegetable crops for this exercise. The quality of the crop and the final write up will be evaluated.

(4) Hydroponics (10 points). Facilities to set up hydroponics will be provided. Students will grow a crop of lettuce. This will be a demonstration by the instructor. The students will make observations, and photograph developing plants once a week. Students will submit a final write up at the end of the period.

(5) Field trip report (10 points). This will be a field trip to a farm. Students will take notes and photograph the farm facility and write a report on what they have learned from the trip.

(6) Sprayer Calibration (10 points): Students will fill sprayers with water and calculate

the output from the sprayers. They will be given a set of problems to solve on pesticide dilution and application.



(7) Research project (100 points). Students will work as a group on a project focused on purple sweet potatoes. Each student will be responsible for collecting qualitative and quantitative data on different varieties of purple sweet potatoes grown in the teaching garden. We will use a descriptor tool available here:

[https://cipotato.org/genebankcip/wp-content/uploads/sites/3/2017/05/Descriptors\\_for\\_sweet\\_potato\\_Descripteurs\\_pour\\_la\\_patate\\_douce\\_Descriptores\\_de\\_la\\_batata\\_263.pdf](https://cipotato.org/genebankcip/wp-content/uploads/sites/3/2017/05/Descriptors_for_sweet_potato_Descripteurs_pour_la_patate_douce_Descriptores_de_la_batata_263.pdf)

Data collection will follow the instructions in this manual between pages 16 to 34. Each participant will submit a draft report and feedback will be provided to improve your report prior to final submission for grade.

(8) Class presentation (100 points). Each student will prepare a cost of production analysis for one vegetable crop and make a Power Point presentation about the production, cost analysis and expected profits in a 5-acre farm.

### Course policies and procedures

- (a) During Friday lab/field sessions, students should bring their own bottled water, sun protection and should wear closed toe-shoes. If there is a light rain, students will stay at the breeze-way of building 1400 and resume activities when safe. On days when there is heavy rainfall or lightning, the class will NOT continue that day and the students will be updated at the next class meeting about make-up of activities. Make up classes will be arranged based on the most convenient class period for most students in the class.
- (b) **Friday afternoon lab/field meetings:** All the meetings will be in front of building 1400, in the Student Vegetable Garden on Hull Road, across from Fifield Hall, unless instructed otherwise.
- (c) 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>.
- (d) 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>. Reports are due on the dates indicated in the instructions for each activity. Late homework will be accepted with a 20% penalty for each day after the due date. If you are having trouble with homework or class, please see me immediately. Test



- makeups will be arranged only in the case of an emergency and not for absences for any other reasons.
- (e) Safety: Follow all safety regulations in and out of the classroom. Personal safety is individual responsibility although we will facilitate it in and outside the classroom.
- (f) Privacy statements regarding online part of the course: Though this is a face-to-face class, some opportunities may be provided for students to join virtually. Our class sessions may be audio visually recorded for students in the class to refer back and for enrolled students who are unable to attend live. Students who participate with their camera engaged or utilize a profile image are agreeing to have their video or image recorded. If you are unwilling to consent to have your profile or video image recorded, be sure to keep your camera off and do not use a profile image. Likewise, students who un-mute during class and participate orally are agreeing to have their voices recorded. If you are not willing to consent to have your voice recorded during class, you will need to keep your mute button activated and communicate exclusively using the "chat" feature, which allows students to type questions and comments live. The chat will not be recorded or shared. As in all courses, unauthorized recording and unauthorized sharing of recorded materials is prohibited.
- (g) 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 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>.
- (h) 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”*.
- (i) 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>. Do not use ChatGPT or other AI tools to write your reports unless you are asked to do so.

- (j) 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.
- (k) 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: <https://disability.ufl.edu>
- (l) 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/](http://www.counseling.ufl.edu/cwc/) Counseling services, groups and workshops, outreach and consultation, self-help library and wellbeing coaching. U Matter We Care, [www.umatter.ufl.edu/](http://www.umatter.ufl.edu/) Career Resource Center, First Floor JWRU, 392-1601 <https://career.ufl.edu>

**Schedule:**

Week 1

- 23 Aug 2023 Wed Introduction, Syllabus, Guidelines and Canvas resources.
- 25 Aug 2023 Fri Importance of Vegetables
- 25 Aug 2023 Fri Vegetable Seed Sources & Transplant Production
- 25 Aug 2023 Fri Lab 1 Vegetable Seed Sources

Week 2

- 28 Aug 2023 Mon Major vegetables and their production statistics & resources
- 29 Aug 2023 Tue Last day for Drop/Add
- 30 Aug 2023 Wed Sustainable production of vegetables

01 Sep 2023 Fri “Building Better Peppers – A project in plant breeding”  
 01 Sep 2023 Fri Lab 2 Transplant production

Week 3

04 Sep 2023 Mon **Labor Day. No class.**  
 06 Sep 2023 Wed Vegetable production in Alachua County – production cycles  
 08 Sep 2023 Fri Row crops – bed formation, tillage and spacing  
 Details of the research project on Purple Sweet Potatoes.  
 08 Sep 2023 Fri Lab 3 Planting a Fall vegetable garden 1.

Week 4

11 Sep 2023 Mon Vegetable varieties – Plant Breeding 2  
 13 Sep 2023 Wed GM vegetable crops  
 15 Sep 2023 Fri Plant nutrition  
 15 Sep 2023 Fri Lab 4 Setting up a container garden of vegetables.  
 Field garden: Planting continued. Weeding

Week 5

18 Sep 2023 Mon Plant Nutrition  
 20 Sep 2023 Wed Hydroponics  
 22 Sep 2023 Fri Nature and properties of soils I  
 22 Sep 2023 Fri Lab 5. Setting up a Hydroponic system to grow lettuce  
 Field garden: Weeding, fertilizer application and pest control

Week 6

25 Sep 2023 Mon Nature and properties of soils II  
 27 Sep 2023 Wed Soil fertility management  
 29 Sep 2023 Fri Mulching  
 29 Sep 2023 Fri Lab 5 continued. Add new nutrient stocks to hydroponics.  
 Field garden: Weeding, support tomatoes, fertilizer application

Week 7

02 Oct 2023 Mon Irrigation 1. Water quality and irrigation & fertilizer appln.  
 04 Oct 2023 Wed Irrigation 2. Drip irrigation  
 06 Oct 2023 Fri **Homecoming – No class**

Week 8

09 Oct 2023 Mon **Test 1**  
 11 Oct 2023 Wed Insect pests on vegetable crops  
 13 Oct 2023 Fri Insecticides  
 13 Oct 2023 Fri Lab 6 Calculations on fertilizer requirements

Week 9

16 Oct 2023 Mon Crop diseases  
 18 Oct 2023 Wed Crop diseases  
 20 Oct 2023 Fri Fungicides  
 20 Oct 2023 Fri Lab 7 Identification of insect pests

# Current syllabus

## Week 10

23 Oct 2023 Mon	Weeds and Herbicides
25 Oct 2023 Wed	Weeds and Herbicides
27 Oct 2023 Fri	Harvesting and yield potential of vegetables
27 Oct 2023 Fri	How to calculate the cost of production and estimated profits for vegetable crops?

## Week 11

30 Oct 2023 Mon	Pesticide applicator training and certification
01 Nov 2023 Wed	<b>Test 2.</b>
03 Nov 2023 Fri	Lab 8 Identification of weeds and diseases

## Week 12

06 Nov 2023 Mon	Postharvest handling of vegetables
08 Nov 2023: Wed	Food safety issues
10 Nov 2023 Fri	<b>Veterans day. No class.</b>

## Week 13

13 Nov 2023 Mon	Student presentation
15 Nov 2023 Wed	Student presentation
17 Nov 2023 Fri	Student presentation
17 Nov 2023 Fri	Harvest vegetables and document yield

## Week 14

20 Nov 2023 Mon	Project Presentation
22 Nov 2023 Wed	<b>No Class Thanksgiving break</b>
24 Nov 2023 Fri	<b>No class Thanksgiving break</b>

## Week 15

27 Nov 2023 Mon	Student presentations
29 Nov 2023 Wed	<b>Final exam</b>
01 Dec 2023 Fri	Student presentation
01 Dec 2023	Clean up of the garden and greenhouse

## Week 16

04 Dec 2023	Celebration of harvest. A demo at the teaching garden
06 Dec 2023	Discussions on vegetable production course



**HORTICULTURAL  
SCIENCES**

## **Commercial Vegetable Production**

VEC 3221C - 3 CREDITS

Fall 2024

Prerequisites: BOT2010C or

BSC2010C and BSC2010L or

BSC2011 and BSC2011L

Lecture: Wed and Thu 7th Period (1:55 pm – 2:45 pm) 2316 Fifield Hall  
Lab: Thu 8th – 9th period (3:00 pm – 4:55 pm) Horticultural Sciences Teaching Garden

### **INSTRUCTOR**

Bala Rathinasabapathi, Ph.D.

brath@ufl.edu

Fifield Hall 2247

Phone: (352) 273 – 4765

Cell: (352) 339 – 4269

Office hours: Wed 4:00 PM to 5:00 PM or by appointment

### **COURSE DESCRIPTION**

The principles and practices of successful commercial vegetable production will be presented. Crop requirements, growth patterns and production techniques are emphasized along with discussion of consumption/marketing patterns in the U.S. and Florida production areas.

### **COURSE FORMAT**

The laboratory involves field trips to farming operations and guest lectures from individuals in the vegetable production industry. Each member of the class will also develop a vegetable garden with different crops suitable for Fall production and participate in vegetable crop production activities.

### **LEARNING OBJECTIVES**

By the completion of this course, the conscientious student should be able to

- Explain production details for major vegetables.
- Diagnose problems related to soil fertility, irrigation and pests of major vegetables.
- Find sustainable solutions to problems related to soil fertility, irrigation and pests of major vegetables.
- Choose vegetable cultivars suitable for a given region or production system.
- Enumerate advantages and disadvantages of various production systems.
- Propagate vegetable crops and cultivate a vegetable farm

# Proposed syllabus

- Critically analyze production and marketing data and
- Estimate cost of production for major vegetables.

## COURSE MATERIALS

### Optional Textbook

Producing Vegetable Crops by Swiader JM and Ware GW., Interstate Publishers Inc., Danville, Illinois, 5th Edition, 2002. ISBN 0-8134-3203-0.

### Other Optional References

Vegetable Production Handbook For Florida 2022-2023, by Dittmar, PJ, Agehara, S., Dufault, N (Eds.), University of Florida, IFAS Extension. 670 pp. (For a Free download: <https://edis.ifas.ufl.edu/publication/CV292>)

Articles from Florida Cooperative Extension Service, Journal of the American Society of Horticultural Science, Hortscience and American Vegetable Grower. Available via Canvas.

### Course Website

This course has a comprehensive mini-site in Canvas. Take time to familiarize yourself with the course site. Digital copies of this syllabus, and other learning materials can be found there.

- *E-Learning in Canvas*, [www.elearning.ufl.edu](http://www.elearning.ufl.edu)

## COURSE GRADE

Students will be evaluated based on the following:

Class attendance & participation	50 points
Lab reports & field trip reports	100 points
Research and demonstration project	100 points
Class presentation	100 points
Tests	100 points
Final Exam	<u>50 points</u>
TOTAL	500 points

### 1. **Class attendance**

Class attendance will be marked each day either at the beginning or end or middle of the class period.

**2. Lab and field trip reports**

- (a) Transplant Production (10 points). Each student will generate vegetable transplants of at least 2 vegetable crops. Instructions, seeds and greenhouse space will be provided. Quality of the transplants and a report of this activity will be evaluated. This report should include at least one photo each of (a) seeds, (b) early seedling and (c) the final transplant for two vegetable crops and (d) a description of key factors that influence the quality of the transplants.
- (b) Field Production of Vegetables (40 points). The students will cultivate five different vegetable crops as part of their laboratory. The student will keep a field notebook for weekly observations and write a final report for evaluation. The final report should contain information about the crops and their varieties, crop stand, weather, irrigation, soil fertility management, insect pests, diseases and weeds encountered and notes on how the problems were handled and the quality and quantity of vegetables harvested. Irrigation will be managed by the staff.
- (c) Container gardens (20 points). Facilities to set up container gardens of vegetables, greenhouse space, materials and instruction will be provided. Each student will grow different vegetable crops for this exercise. The quality of the crop and the final write up will be evaluated.
- (d) Hydroponics (10 points). Facilities to set up hydroponics will be provided. Students will grow a crop of lettuce. This will be a demonstration by the instructor. The students will make observations, and photograph developing plants once a week. Students will submit a final write up at the end of the period.
- (e) Field trip report (10 points). This will be a field trip to a farm. Students will take notes and photograph the farm facility and write a report on what they have learned from the trip.
- (f) Sprayer Calibration (10 points): Students will fill sprayers with water and calculate the output from the sprayers. They will be given a set of problems to solve on pesticide dilution and application.

**3. Research project and demonstration project**

Students will work as a group on a project focused on purple sweet potatoes. Each student will be responsible for collecting qualitative and quantitative data on different varieties of purple sweet potatoes grown in the teaching garden. We will use a descriptor tool available here:

[https://cipotato.org/genebankcip/wpcontent/uploads/sites/3/2017/05/Descriptors\\_for\\_sweet\\_potato\\_Descripteurs\\_pour\\_la\\_patate\\_douce\\_Descriptores\\_de\\_la\\_batata\\_263.pdf](https://cipotato.org/genebankcip/wpcontent/uploads/sites/3/2017/05/Descriptors_for_sweet_potato_Descripteurs_pour_la_patate_douce_Descriptores_de_la_batata_263.pdf) Data collection will follow the instructions in this manual between pages 16 to 34. Each participant will submit a draft report and feedback will be provided to improve your report prior to final submission for grade.

**4. Class presentation**

Each student will prepare a cost of production analysis for one vegetable crop and make a Power Point presentation about the production, cost analysis and expected profits in a 5-acre farm.

**5. Tests and final exam**

Each student will be evaluated through a combination of short-essay and multiple-choice questions. Exams will take place in the dates indicated in the course weekly schedule.

## GRADING SCALE

A	=	90 – 100 points	C	=	< 74 - 70 points
A-	=	< 90 - 87 points	C-	=	< 70 - 67 points
B+	=	< 87 - 84 points	D+	=	< 67 - 64 points
B	=	< 84 - 80 points	D	=	< 64 - 60 points
B-	=	< 80 - 77 points	D-	=	< 60 - 57 points
C+	=	< 77 - 74 points	E	=	< 57 points

## COURSE POLICIES

### Grades and Grade Points

For information on current UF policies for assigning grade points, see <https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/>

### Attendance and late work

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/UGRD/academic-regulations/attendance-policies/>

Late homework will be accepted with a 20% penalty for each day after the due date.

### 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. Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at: <https://gatorevals.aa.ufl.edu/students/>.

Students will be notified when the evaluation period opens and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at: <https://gatorevals.aa.ufl.edu/public-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, <https://disability.ufl.edu/>

#### Campus 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.

- University Counseling & Wellness Center, 3190 Radio Road, 352-392-1575, [www.counseling.ufl.edu](http://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/](http://www.umatter.ufl.edu/)
- Career Connections Center, First Floor JWRU, 392-1601, <https://career.ufl.edu/>.
- Student Success Initiative, <http://studentsuccess.ufl.edu>.

#### Student Complaints

You can file and resolve any complaints about your experience in this course in the following site:

- *Residential Course:* <https://sccr.dso.ufl.edu/policies/student-honor-code-studentconduct-code/>

### In-class Recording

Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal educational use, (2) in connection with a complaint to the university, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor.

A “class lecture” is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and delivered by any instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course. A class lecture does not include lab sessions, student presentations, clinical presentations such as patient history, academic exercises involving solely student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or lecturer during a class session.

Publication without permission of the instructor is prohibited. To “publish” means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium, to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third-party note/tutoring services. A student who publishes a recording without written consent may be subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student Honor Code and Student Conduct Code.

## Schedule of Topics - Fall 2024

# Proposed syllabus

### Week 1

22 Aug 2024 Thu Introduction, Syllabus, Guidelines and Canvas resources.

23 Aug 2024 Fri Last day to drop/add

### Week 2

28 Aug 2024 Wed Importance of Vegetables

29 Aug 2024 Thu Vegetable Seed Sources & Transplant Production

29 Aug 2024 Thu Lab 1 Vegetable Seed Sources

### Week 3

04 Sep 2024 Wed Major vegetables and their production statistics & resources

05 Sep 2024 Thu Sustainable production of vegetables

05 Sep 2024 Thu Lab 2 Transplant production

### Week 4

11 Sep 2024 Wed Vegetable production in Alachua County – production cycles

12 Sep 2024 Thu Row crops – bed formation, tillage and spacing

Details of the research project on Purple Sweet Potatoes.

12 Sep 2024 Thu Lab 3 Planting a Fall vegetable garden 1.

### Week 5

18 Sep 2024 Wed Vegetable varieties – Plant Breeding

19 Sep 2024 Thu GM vegetable crops

19 Sep 2024 Thu Lab 4 Setting up a container garden of vegetables.

Field garden: Planting continued. Weeding

### Week 6

25 Sep 2024 Wed Plant Nutrition

26 Sep 2024 Thu Hydroponics

26 Sep 2023 Thu Lab 5. Setting up a Hydroponic system to grow lettuce

Field garden: Weeding, fertilizer application and pest control

### Week 7

02 Oct 2024 Wed Nature and properties of soils

03 Oct 2024 Thu Soil fertility management Mulching

03 Oct 2024 Thu Lab 5 continued. Add new nutrient stocks to hydroponics.

Field garden: Weeding, support tomatoes, fertilizer application

# Proposed syllabus

## Week 8

09 Oct 2024 Wed	Irrigation 1. Water quality and irrigation & fertilizer appln.
10 Oct 2024 Thu	Irrigation 2. Drip irrigation
10 Oct 2024 Thu	Lab 6 Calculations on fertilizer requirements

## Week 9

16 Oct 2024 Wed	Test 1
17 Oct 2024 Thu	Insect pests on vegetable crops
17 Oct 2024 Thu	Lab 7 Identification of insect pests

## Week 10

23 Oct 2024 Wed	Crop diseases
24 Oct 2024 Thu	Fungicides
24 Oct 2024 Thu	Lab 8 Calibration of a knapsack sprayer.

## Week 11

30 Oct 2024 Wed	Weeds and Herbicides
31 Oct 2024 Thu	Harvesting and yield potential of vegetables.
31 Oct 2024 Thu	Lab 9. Identification of weeds Harvesting and yield potential of vegetables

## Week 12

06 Nov 2024 Wed	Pesticide applicator training and certification
07 Nov 2024 Thu	Test 2.
07 Nov 2024 Thu	Lab 10 Identification of vegetable crop diseases

## Week 13

13 Nov 2024 Wed	Postharvest handling of vegetables
14 Nov 2024 Thu	How to calculate the cost of production and estimated profits for vegetable crops?
14 Nov 2024 Thu	Lab 11, Harvest vegetables and document yield

## Week 14

20 Nov 2024 Wed	Student presentation
21 Nov 2024 Thu	Student presentation
21 Nov 2024 Thu	Celebration of harvest. A demo at the teaching garden

## Week 15

27 Nov 2024 Wed	No Class Thanksgiving break
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28 Nov 2024 Thu

No class Thanksgiving break

Week 16

04 Dec 2024 Wed

Student presentations

# Proposed syllabus

# Cover Sheet: Request 19136

3

## FAMM Curriculum Map

### Info

Process	ALC/SLO New/Change Ugrad
Status	Pending at CALS - College of Agricultural and Life Sciences
Submitter	Misti Sharp mistisharp@ufl.edu
Created	11/28/2023 9:40:06 AM
Updated	2/7/2024 9:58:26 AM
Description of request	We are updating the curriculum map for our specializations as they were out of date.

### Actions

Step	Status	Group	User	Comment	Updated
Department	Approved	CALS - Food and Resource Economics 60060000	Lisa House		1/31/2024
Overview Academic Learning Compact NoChanges.docx					11/28/2023
College	Pending	CALS - College of Agricultural and Life Sciences			1/31/2024
No document changes					
Academic Assessment Committee					
No document changes					
University Curriculum Committee Notified					
No document changes					
Catalog					
No document changes					
Student Academic Support System					
No document changes					
College Notified					
No document changes					

## SLO-AAP|Modify for request 19136

### Info

**Request:** FAMM Curriculum Map

**Description of request:** We are updating the curriculum map for our specializations as they were out of date.

**Submitter:** Misti Sharp mistisharp@ufl.edu

**Created:** 11/28/2023 9:38:06 AM

**Form version:** 1

### Responses

**Name of Major** Food and Agribusiness Marketing and Management

**College** Agricultural and Life Sciences

**Effective Term** Earliest Available

**Effective Year** Earliest Available

**Request Type** Modify Undergraduate Academic Assessment Plan

**Plan Component** Modify Academic Learning Compact (ALC)

**Academic Assessment Plan Modifications** Curriculum Map

**ALC Modifications** Does not apply

**SLO Modifications** Does not apply

**What Types of Assessments Are or Will Be Used?** Final Paper/Project/Presentation, Course Assessments/Assignments

**What Assessment Methods Will Be Used?** Rubric

**Who Applies the Assessment Method?** Single Faculty Member

**Individual Student Assessments** These will not be changed.

**Description and Rationale** We are updating our curriculum map as it was out of date.

## Overview

Graduates choose from a vast number of career opportunities, including sales, marketing, management, environmental policy, international trade, international marketing, economic analysis, natural resource management and human resource managements.

Students who have completed 30 credits but fewer than 60 are required to complete mathematics through precalculus ([MAC 1147](#) or equivalent) before admission to the college.

Students who have completed 60 or more credits are required to have completed calculus ([MAC 2233](#) or equivalent), statistics ([STA 2023](#) or equivalent), financial accounting ([ACG 2021](#) or equivalent) and macroeconomics ([ECO 2013](#) or equivalent) with minimum grades of C before admission to the college.

Students should consult an advisor for approval of electives.

## Academic Learning Compact

Students will learn to apply a conceptual framework using economic reasoning and generally accepted economic principles to problem solving. They will also learn to analyze and interpret economic data, and to critically evaluate economic information in media and politics.

## BEFORE GRADUATING STUDENTS MUST

- Complete [AEB 4325](#) for the food and agribusiness management and marketing specialization, or Complete [AEB 4343](#) for the international food and resource economics specialization
- Achieve minimum grades of C in [AEC 3030C](#) and [AEC 3033C](#). These courses are graded using rubrics developed by a faculty team.
- Complete requirements for the baccalaureate degree, as determined by faculty.

## STUDENTS IN THE MAJOR WILL LEARN TO

### Student Learning Outcomes | SLOs

#### Content

1. Describe fundamental micro- and macroeconomic principles.
2. Explain the basic role of marketing, management, and finance in firm-level decision making.



## Critical Thinking

- Analyze and interpret economic data, critically evaluating economic information and economic policies.
- Develop a business plan, based on a projected marketing strategy, assessing historic financial statements and projecting cash flows.

## Communication

- Communicate effectively in written form in a manner appropriate in economics and business.
- Communicate orally (including visual aids) in an effective manner appropriate in economics and business.

## Curriculum Map

*I = Introduced; R = Reinforced; A = Assessed*

Courses	SLO 1	SLO 2	SLO 3	SLO 4	SLO 5	SLO 6
<a href="#"><u>AEB 3103</u></a>			I			
<a href="#"><u>AEB 3133</u></a>	R	R	R	I		
<a href="#"><u>AEB 3144</u></a>		R		R		
<a href="#"><u>AEB 3300</u></a>	I	I	I			
<a href="#"><u>AEB 4138</u></a>				A	R	A
<a href="#"><u>AEB 4242</u></a>	A		R			R
<a href="#"><u>AEB 4325</u></a>	R			R	R	
<a href="#"><u>AEB 4342</u></a>		A	A		A	
<a href="#"><u>AEC 3030C</u></a>						I
<a href="#"><u>AEC 3033C</u></a>					I	

Academic Learning Compact 6

## ASSESSMENT TYPES

- Case studies
- Presentations

- Exams

## Overview

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- ~~Achieve minimum grades of C in [AEC 3030C](#) and [AEC 3033C](#). These courses are graded using rubrics developed by a faculty team.~~
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## STUDENTS IN THE MAJOR WILL LEARN TO

### Student Learning Outcomes | SLOs

#### Content

1. Describe fundamental micro- and macroeconomic principles.
2. Explain the basic role of marketing, management, and finance in firm-level decision making.

### Critical Thinking

3. Analyze and interpret economic data, critically evaluating economic information and economic policies.
4. Develop a business plan, based on a projected marketing strategy, assessing historic financial statements and projecting cash flows.

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5. Communicate effectively in written form in a manner appropriate in economics and business.
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### Curriculum Map

*I = Introduced; R = Reinforced; A = Assessed*

Courses	SLO 1	SLO 2	SLO 3	SLO 4	SLO 5	SLO 6
<a href="#">AEB 3103</a>	I		I			
<a href="#">AEB 3133</a>	R	R	R	I		
<a href="#">AEB 3144</a>		R		R		
<a href="#">AEB 3300</a>	I	I	I			
<a href="#">AEB 4138</a>				<u>R,A</u>	<u>R,A</u>	<u>R,A</u>
<a href="#">AEB 4242</a>	A		<u>RA</u>		<u>A</u>	<u>R</u>
<a href="#">AEB 4325</a>	<u>R,A</u>	<u>R,A</u>	<u>R,A</u>	<u>R,A</u>	<u>R,A</u>	
<a href="#">AEB4343AEB-4342</a>		A	A	<u>A</u>	A	<u>R,A</u>
<a href="#">AEC 3030C</a>						I
<a href="#">AEC 3033C</a>					I	
Academic Learning Compact 6						

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### ASSESSMENT TYPES

- Case studies
- Presentations

- Exams

## Cover Sheet: Request 19135

### IFRE Academic Compact

#### Info

Process	ALC/SLO New/Change Ugrad
Status	Pending at CALS - College of Agricultural and Life Sciences
Submitter	Misti Sharp mistisharp@ufl.edu
Created	11/28/2023 9:36:02 AM
Updated	2/7/2024 9:59:12 AM
Description of request	We have to update our academic compact as it was out of date.

#### Actions

Step	Status	Group	User	Comment	Updated
Department	Approved	CALS - Food and Resource Economics 60060000	Lisa House		1/31/2024
Overview Academic Learning Compact NoChanges.docx					11/28/2023
College	Pending	CALS - College of Agricultural and Life Sciences			1/31/2024
No document changes					
Academic Assessment Committee					
No document changes					
University Curriculum Committee Notified					
No document changes					
Catalog					
No document changes					
Student Academic Support System					
No document changes					
College Notified					
No document changes					

## SLO-AAP|Modify for request 19135

### Info

**Request:** IFRE Academic Compact

**Description of request:** We have to update our academic compact as it was out of date.

**Submitter:** Misti Sharp mistisharp@ufl.edu

**Created:** 11/28/2023 9:32:17 AM

**Form version:** 1

### Responses

**Name of Major** International Food and Resource Economics

**College** Agricultural and Life Sciences

**Effective Term** Earliest Available

**Effective Year** Earliest Available

**Request Type** Modify Undergraduate Academic Assessment Plan

**Plan Component** Modify Academic Learning Compact (ALC)

**Academic Assessment Plan Modifications** Curriculum Map

**ALC Modifications** Does not apply

**SLO Modifications** Does not apply

**What Types of Assessments Are or Will Be Used?** Course-related Exam, Final Paper/Project/Presentation, Course Assessments/Assignments

**What Assessment Methods Will Be Used?** Rubric

**Who Applies the Assessment Method?** Single Faculty Member

**Individual Student Assessments** Same as before without changes

**Description and Rationale** Same as before without changes

## Academic Learning Compact

Students will learn to apply a conceptual framework using economic reasoning and generally accepted economic principles to problem solving. They will also learn to analyze and interpret economic data, and to critically evaluate economic information in media and politics.

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## STUDENTS IN THE MAJOR WILL LEARN TO

### Student Learning Outcomes | SLOs

#### Content

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#### Critical Thinking

3. Analyze and interpret economic data, critically evaluating economic information and economic policies.
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<a href="#">AEB 3103</a>			I			
<a href="#">AEB 3133</a>	R	R	R	I		
<a href="#">AEB 3144</a>		R		R		
<a href="#">AEB 3300</a>	I	I	I			
<a href="#">AEB 4138</a>				A	R	A
<a href="#">AEB 4242</a>	A		R			R
<a href="#">AEB 4325</a>	R			R	R	
<a href="#">AEB 4342</a>		A	A		A	
<a href="#">AEC 3030C</a>						I
<a href="#">AEC 3033C</a>					I	
Academic Learning Compact 6						

## ASSESSMENT TYPES

- Case studies
- Presentations
- Exams

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### Student Learning Outcomes | SLOs

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*I = Introduced; R = Reinforced; A = Assessed*

Courses	SLO 1	SLO 2	SLO 3	SLO 4	SLO 5	SLO 6
<a href="#">AEB 3103</a>	I		I			
<a href="#">AEB 3133</a>	R	R	R	I		
<a href="#">AEB 3144</a>		R		R		
<a href="#">AEB 3300</a>	I	I	I			
<a href="#">AEB 4138</a>				<u>R,A</u>	<u>R,A</u>	<u>R,A</u>
<a href="#">AEB 4242</a>	A		<u>RA</u>		<u>A</u>	<u>R</u>
<a href="#">AEB 4325</a>	<u>R,A</u>	<u>R,A</u>	<u>R,A</u>	<u>R,A</u>	<u>R,A</u>	
<a href="#">AEB4343AEB-4342</a>		A	A	<u>A</u>	A	<u>R,A</u>
<a href="#">AEC 3030C</a>						I
<a href="#">AEC 3033C</a>					I	
Academic Learning Compact 6						

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### ASSESSMENT TYPES

- Case studies
- Presentations

- Exams

## Cover Sheet: Request 19468

### BS - ANS - Integrative Animal Sciences specialization modification

#### Info

Process	Specialization New/Modify/Close Ugrad
Status	Pending at CALS - College of Agricultural and Life Sciences
Submitter	Albert De Vries devries@ufl.edu
Created	1/24/2024 4:32:41 PM
Updated	1/24/2024 4:34:37 PM
Description of request	Replace 2 credits of ANS 4905 Problems in Animal Science (Capstone Experience) with 2 credits of ANS Advisor approved electives.

#### Actions

Step	Status	Group	User	Comment	Updated
Department	Approved	CALS - Animal Sciences 60090000	Albert De Vries	Approved by the ANS undergraduate program coordinator, Albert De Vries	1/24/2024
ANS-IAS model semester plan modification.docx					1/24/2024
College	Pending	CALS - College of Agricultural and Life Sciences			1/24/2024
No document changes					
Associate Provost for Undergraduate Affairs					
No document changes					
University Curriculum Committee					
No document changes					
Office of the Registrar					
No document changes					
Catalog					
No document changes					
Student Academic Support System					
No document changes					
College Notified					
No document changes					

## Specialization|Modify for request 19468

### Info

**Request:** BS - ANS - Integrative Animal Sciences specialization modification

**Description of request:** Replace 2 credits of ANS 4905 Problems in Animal Science (Capstone Experience) with 2 credits of ANS Advisor approved electives.

**Submitter:** Albert De Vries devries@ufl.edu

**Created:** 1/24/2024 4:11:05 PM

**Form version:** 1

### Responses

**Specialization Name** Integrative Animal Sciences

**Change name of Specialization** No

**Specialization Code** IAS

**Effective Term** Earliest Available

**Effective Year** Earliest Available

**Is this an Undergraduate Innovation Academy Program** No

**Current Curriculum for Specialization** Current model semester plan:

[https://catalog.ufl.edu/UGRD/colleges-schools/UGAGL/ANS\\_BS/ANS\\_BS08/#modelsemesterplantext](https://catalog.ufl.edu/UGRD/colleges-schools/UGAGL/ANS_BS/ANS_BS08/#modelsemesterplantext)

**Proposed Changes** In semester 8, replace 2 credits for ANS 4905 Problems in Animal Science (Capstone Experience) with 2 credits ANS Advisor approved electives.

**UF Online curriculum change** No

**Pedagogical Rationale/Justification** This is a new specialization that started in summer 2023. The initial thinking was that students in this specialization are able to complete an individual customized capstone experience that is mostly self-motivated. However, we find that about half of the students cannot conceive of an individual capstone experience and need extensive faculty help. We realize that we do not have the faculty capacity to guide these students. Therefore, this capstone experience requirement is becoming a bottleneck in an otherwise growing and popular specialization. We propose to change the 2 credits of capstone experience with 2 credits of ANS Advisor approved electives.

**Impact on Other Programs** None

**Assessment Data Review** Feedback from both ANS undergraduate advisors and faculty who have mentored some students in this specialization.

**Academic Learning Compact and Academic Assessment Plan** None

**Catalog Copy** Yes

Major: Animal Sciences

Specialization: Integrative Animal Sciences

[https://catalog.ufl.edu/UGRD/colleges-schools/UGAGL/ANS\\_BS/ANS\\_BS08/#modelsemesterplantext](https://catalog.ufl.edu/UGRD/colleges-schools/UGAGL/ANS_BS/ANS_BS08/#modelsemesterplantext)

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
<b><u>BSC 2010</u></b> & <b><u>2010L</u></b>	Integrated Principles of Biology 1 and Integrated Principles of Biology Laboratory 1 ( <b>Critical Tracking</b> ; State Core Gen Ed Biological and Physical Sciences)	4
<b><u>ENC 1101</u></b>	Expository and Argumentative Writing ( <b>State Core Gen Ed Composition</b> ; Writing Requirement)	3
<b><u>MAC 1147</u></b>	Precalculus Algebra and Trigonometry ( <b>State Core Gen Ed Mathematics</b> )	4
<b><u>State Core Gen Ed Humanities with Diversity</u></b>		3
<b>Credits</b>		<b>14</b>
SEMESTER TWO		
Quest 1 (Gen Ed Humanities)		3
<b><u>AEC 3030C</u></b>	Effective Oral Communication	3

or <a href="#">SPC 2608</a>	or Introduction to Public Speaking	
<a href="#">BSC 2011</a> & <a href="#">2011L</a>	Integrated Principles of Biology 2 and Integrated Principles of Biology Laboratory 2 ( <b>Critical Tracking</b> ; Gen Ed Biological Sciences)	4
<a href="#">ECO 2013</a>	Principles of Macroeconomics ( <b>Critical Tracking</b> ; State Core Gen Ed Social and Behavioral Sciences)	4
<a href="#">ENC 1102</a>	Argument and Persuasion (Gen Ed Composition)	3
<b>Credits</b>		<b>17</b>
<b>SEMESTER THREE</b>		
Quest 2 (Gen Ed Social and Behavioral Sciences)		3
Select one:		3
<a href="#">AEC 3033C</a>	Research and Business Writing in Agricultural and Life Sciences (Writing Requirement)	
<a href="#">ENC 2210</a>	Technical Writing	
<a href="#">ANS 2090</a>	Survey of Veterinary Professions (or ANS 2XXX Careers in Animal Sciences)	2
<a href="#">CHM 2045</a> & <a href="#">2045L</a>	General Chemistry 1 and General Chemistry 1 Laboratory ( <b>Critical Tracking</b> ; Gen Ed Biological and Physical Sciences)	4
Elective		3
<b>Credits</b>		<b>15</b>



SEMESTER FOUR		
<a href="#"><u>MCB 2000</u></a> & <a href="#"><u>2000L</u></a>	Microbiology and Microbiology Laboratory (Gen Ed Biological Sciences)	4
<a href="#"><u>STA 2023</u></a>	Introduction to Statistics 1 ( <b>Critical Tracking</b> ; Gen Ed Mathematics)	3
	Gen Ed Diversity with International	3
	Approved electives	5
	<b>Credits</b>	<b>15</b>
SEMESTER FIVE		
<a href="#"><u>ANS 3006</u></a> & <a href="#"><u>3006L</u></a>	Introduction to Animal Science and Introduction to Animal Science Laboratory ( <b>Critical Tracking</b> )	4
<a href="#"><u>ANS 3440</u></a>	Principles of Animal Nutrition	4
	ANS Advisor approved electives	6
	<b>Credits</b>	<b>14</b>
SEMESTER SIX		
<a href="#"><u>ANS 3319C</u></a>	Reproductive Physiology and Endocrinology in Domestic Animals ( <b>Critical Tracking</b> )	4
<a href="#"><u>ANS 3384C</u></a>	Genetics of Domestic Animals	3
	ANS Advisor approved electives	4
	Approved electives	4

<b>Credits</b>		<b>15</b>
<b>SUMMER AFTER SEMESTER SIX</b>		
<u>ANS 4941</u>	Full-Time Practical Work Experience in Animal Science ( <b>Critical Tracking</b> )	3-8
<b>Credits</b>		<b>3-8</b>
<b>SEMESTER SEVEN</b>		
<u>ANS 3043</u>	Growth and Development of Farm Animals ( <b>Critical Tracking</b> )	3
<u>ANS 4931</u>	Senior Seminar	1
ANS Advisor approved electives		10
<b>Credits</b>		<b>14</b>
<b>SEMESTER EIGHT</b>		
<u>ANS 4905</u>	<del>Problems in Animal Science (Capstone Experience)</del>	<del>2</del>
ANS Advisor approved electives		<u>13</u> 14
<b>Credits</b>		<b>13</b>
<b>Total Credits</b>		<b>120</b>
Plan of Study Grid		

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## Cover Sheet: Request 18500

### SWS 6722 - AI Modeling in Soil and Ecosystem Sciences

#### Info

Process	Course Modify Grad
Status	Pending at CALS - College of Agricultural and Life Sciences
Submitter	Michael Sisk mjsisk@ufl.edu
Created	4/21/2023 12:49:02 PM
Updated	1/26/2024 12:57:19 PM
Description of request	Change Course Title, Course Description, Course Goals and Objectives, Learning Approach & align course with UF goal to is provide the state with world-class talent equipped to leverage advanced AI technology to advance knowledge, skills, and experiences across every industry.

#### Actions

Step	Status	Group	User	Comment	Updated
Department	Approved	CALS - Soil and Water Science 60210000	Matthew Whiles		4/21/2023
SWS 6722 - Soil Landscape Modeling Previous Version Syllabus.pdf					4/21/2023
College	Pending	CALS - College of Agricultural and Life Sciences			4/21/2023
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 18500

### Info

**Request:** SWS 6722 - AI Modeling in Soil and Ecosystem Sciences

**Description of request:** Change Course Title, Course Description, Course Goals and Objectives, Learning Approach & align course with UF goal to is provide the state with world-class talent equipped to leverage advanced AI technology to advance knowledge, skills, and experiences across every industry.

**Submitter:** Michael Sisk mjsisk@ufl.edu

**Created:** 1/26/2024 10:01:36 AM

**Form version:** 4

### Responses

**Current Prefix** SWS

**Course Level** 6

**Number** 722

**Lab Code** None

**Course Title** Soil-Landscape Modeling

**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** Soil-Landscape Modeling

**Proposed Course Title** AI Modeling in Soil and Ecosystem Sciences

**Change Transcript Title?** Yes

**Current Transcript Title** Soil Landscape Model

**Proposed Transcript Title (30 char. max)** AI Modeling Soil Ecosystem Sci

**Change Credit Hours?** No

**Change Variable Credit?** No

**Change S/U Only?** No

**Change Contact Type?** No

**Course Type** Lecture

**Change Rotating Topic Designation?** No

**Change Repeatable Credit?** No

**Multiple Offerings in a Single Semester** No

**Change Course Description?** Yes

**Current Course Description** Various concepts and quantitative methods to model and understand spatial distribution of soil properties.

**Proposed Course Description (500 characters max)** AI Modeling to Understand the Properties and Functions of Soils and Ecosystems.

**Change Course Objectives** Yes

**Current Course Objectives** Soil-landscape refers to the totality of an ecosystem—below-ground (soil and lithology) and above ground (climate, vegetation, land use, topography/landform) components, organisms (biota), and the human dimension (social systems, culture, people's needs, beliefs, values, and opinions).

The goal of this class is to explore various concepts, qualitative, and quantitative methods to model and understand soil-landscape systems considering its biological and chemical composition, physical environment, social dimension, as well as values, needs, beliefs, and perceptions of people and stakeholders. Understanding the totality of an ecosystem facilitates to better infer on environmental consequences (e.g., carbon dynamics, fate of nutrients, environmental induced trauma of people, environmental justice and gentrification, degradation of ecosystems and well-being of people). The specific course objectives are to:

- (1) Analyze and understand relationships between various dimensions of the soil-landscape system as an integrated whole.
- (2) Explore model approaches to assess, predict, simulate, and understand behaviors and responses to changes from an integrative ecosystem perspective.
- (3) Synthesize understanding of the totality of soil-landscapes into complex models.

The purpose of integrative ecosystem modeling is rooted in finding better answers to the wicked environmental problems of our time including global climate change, multi-hazard eco-disasters, food security, soil and public health. Diverse ecosystems exist with natural non-managed ecosystems in decline, conservation management systems, and tightly managed agro-forest and urban ecosystems to benefit people and provide ecosystem services.

Integral ecology/ies provide a whole system perspective that aim to integrate social and environmental system dimensions. The course is focused to broaden understanding of the totality of an integrated social-environmental system that considers people, stakeholders, and cultural sensibilities as important as biogeochemical processes. To solve environmental crises and specific problems (e.g., soil carbon losses or well-being and health of people) requires not only to study and understand the ecological, chemical, or physical processes but also the participation and thinking of people and decision-makers. This course aims to connect science facts and understanding and people.

#### LEARNING APPROACH:

A discovery style of leaning is used in this course as foundation to facilitate learning. This means to open your eyes and learn through deep understanding, rather than pre-prepared fixed/rigid class modules and assignments. We learn through dialogue, playful exploration, and critical reflection and discussion. Students will emerge themselves in the course topics through reading, critique of case studies (selected hot topic cases), and designing and creating their own projects to investigate an integral ecological topic.

The instructor uses coaching techniques to facilitate the learning process, including targeted Q&A sessions, unlocking self-motivation to study, learning as exploration, and multi-perspectival class discussions.

The course blends subjective and objective, knowledge-based (discussion and interpretation) and quantitative approaches (modeling). Note that the emphasis in this course is not as much on learning the specific technical nuts-and-bolts (step-by-step instructions) of specific quantitative methods. Rather the emphasis is on understanding in what context to apply a specific method to an ecosystem question/problem/crisis, how to select and integrate various qualitative and quantitative methods, how scale influences your models, how to data mine and fuse data and methods to address a complex ecosystem problem of interest. Environmental facts, empirical data, people's values and beliefs, and

social needs are part of integrative ecological models.

**Proposed Course Objectives** COURSE GOALS AND OBJECTIVES:

The goals of this class are to critically think about AI modeling approaches in soil and ecosystem sciences and evaluate and create AI models.

Objectives:

1. Discover AI modeling approaches applied to soils and ecosystems.
2. Discuss data and AI algorithms applied to soils and ecosystems.
3. Create your own AI model on a topic related to soils and/or ecosystem science.

After completing this course, students will be able to critically think about AI modeling approaches in soil and ecosystem sciences and evaluate and create AI models.

**Change Prerequisites?** Yes

**Current Prerequisites** SWS 5721C, STA 6166, SWS 5716C, or equivalent, or consent of instructor.

**Proposed Prerequisites** GEO 6160 OR GEO 6938 - Intro to Programming and Remote Sensing with R OR STA 6093 OR STA 6166 & SWS 5721C, or or equivalent, or consent of instructor.

**Change Co-requisites?** No

**Rationale** The last couple of offerings of this course under previous title, course description, course goals/objectives, and learning approach has not generated much enrollment in the course, it has been many years since this course has been updated, instructor has updated the course and syllabus in hopes that next offering of course will pull in some more students. We feel this title change also aligns with UF goals in providing the state with world-class talent equipped to leverage advanced AI technology to advance knowledge, skills, and experiences across every industry.

# CALS Curriculum Committee Submission Checklist

**NOTE: This checklist must be included with all course and certificate submissions.**

The checklist below is intended to facilitate course and certificate submissions to the University of Florida Academic Approval Tracking System (<https://approval.ufl.edu/>). The checklist consists of the most common items that can cause a submission to require changes or be recycled. Contrary to information provided on the UF approval site, the CALS Curriculum Committee requires a syllabus be submitted with each new course or course modification request. Please note that submitters are encouraged to attend the CALS CC meeting at which their item is being reviewed. This allows the submitter to answer any potential questions that may arise that could cause the item to not be approved. Also, be aware that when completing the UCC form the section Description of Request is asking for a brief statement about what you are doing. This is **not** the place for a course description. A statement such as “Proposal of a new undergraduate course” is all that is needed. Please do not submit documents in pdf format. All documents should be submitted in Word to facilitate editing on our end if necessary.

**CHECKLIST: PLEASE INITIAL OR MARK N/A FOR EACH STATEMENT TO INDICATE YOUR COMPLIANCE.**

   **MJS** It is required when making a submission that you consult your department’s representative to the CALS CC. A list of current members can be found on the committee site located at: <https://cals.ufl.edu/faculty-staff/committees/>.

   **MJS** You MUST comply with the CALS Syllabus Policy, including items 1 through 8 and all standard syllabus statements. This document can be viewed at the committee site(<https://cals.ufl.edu/faculty-staff/committees/>) by clicking on the Curriculum Committee – Information & Documents heading and scrolling down to Forms, Checklists, and Other documents. The other items included here are all very helpful when making a curriculum submission. Some will be mentioned in other checklist items below.

   **MJS** Submission of a course modification requires both the current version of the course syllabus and the proposed version.

   **N/A** Joint course submissions must include 1.) both graduate and undergraduate syllabuses and 2.) a separate document outlining the substantial (more than one) differences in assignments between the two courses. These assignments must account for at least a 15% difference in graded material between the two levels. If this is a new course submission both courses must be submitted for approval simultaneously.

   **MJS** The course description on the UCC form and in the syllabus must match. Any other information you wish to include needs to be under a different heading such as background or additional information.

   **MJS** The course learning objectives must be consistent with Bloom’s taxonomy. Please see the following link at the CALS Curriculum site. ([https://cals.ufl.edu/content/PDF/Faculty\\_Staff/cals-course-objectives.pdf](https://cals.ufl.edu/content/PDF/Faculty_Staff/cals-course-objectives.pdf)). Do not use the words demonstrate or understand when listing learning objectives.

\_\_MJS\_\_ The course schedule should be concise and include the appropriate number of weeks in the semester.

\_\_MJS\_\_ All graduate course submissions must include a reading list if a textbook is not required. The reading list should include at least some current readings (within the last 5 years). All readings do not need to be current.

\_\_MJS\_\_ Outside consultations are required if there is a possibility of the proposed course covering material taught in another department or college on campus. There must be a consult form completed by the chair of the department from who you are seeking the consult. Instructors may provide additional consults. The form can be found at: <https://approval.ufl.edu/policies/external-consultations/>.

\_\_N/A\_\_ Prerequisite courses are required for 3000 and 4000 level courses. This line of the approval form cannot be “none” or left blank. Junior or senior standing is an acceptable option. A phrase such as “a course in basic biology” is not acceptable.

\_\_MJS\_\_ Decimal points must be included in the grading scale if grade cut-offs are based on percentages. While this is not a university policy it is a CALS standard practice to avoid any confusion when final grades for the course are determined.

\_\_MJS\_\_ The attendance and make-up policy in a syllabus cannot contradict the university’s policy. Do not include any additional wording to this policy. A statement and link regarding this is included in the CALS Syllabus Statements. For the approval process the college suggests a less is more view when it comes to this policy.

\_\_MJS\_\_ The most recent version of the CALS Syllabus Statements boiler plate must be included in all syllabuses. This document is included in the CALS Syllabus Policy and can be copied and pasted to the syllabus. Do not use the boilerplate statements from an old syllabus as they are likely to be out of date.









## **Certificates**

If proposing a new undergraduate or graduate level certificate that includes any courses outside of the submitters department a statement regarding any possible impact on those courses needs to be included. An email from the instructor is acceptable. Also, any courses required for the certificate must have permanent prefixes and course numbers. The submission must include intended catalog copy. (Contact Dr. Joel Brendemuhl ([brendj@ufl.edu](mailto:brendj@ufl.edu)) for further instruction)



## CALS CC Feedback On SWS 6722 Modifications

Dear Mike,

- ~~1. Please fill out and upload the CALS curriculum committee submission [checklist](#).~~
- ~~2. The prerequisite courses need to be on the syllabus. I don't think they need to be on the UF Approvals request as that is for coding into the registration system. Correct me if I'm wrong 😊~~
- ~~3. Course description – use lower case initial letters – AI modeling to understand.....~~
4. Course goal and objectives – these should be stated as SMART goals, based on Bloom's Taxonomy. What will the learner be able to do at the end of this course? This [CALS resource](#) will help develop the learning objectives 
5. Reading material – I believe  that the instructor must actually list 10 or more readings that will be used in the course.  
6. Grading scheme must use decimal points. ~~5-15 shown as 45 and below. I'm not sure that that is considered satisfactory.~~ Also, some grade ranges are low to high (90-95), while others are high to low (75-70). Please change all to low to high with decimal places (e.g., 70-74.99; 75-79.99, etc....). Grade points don't mean the GPA points. The course points listed are actually the course percentage. Some professors assign points to assignments and then determine the percentages from those points. Points don't necessarily add up to 100 
7. Grading – case study discussion – I assume  this is more than one discussion to account for 40% of the grade? How many discussions?
8. In one place in the syllabus it indicates that students can do a group AI project whereas in the Expectations and  Grading Policy Section it indicates that students are expected to work independently.
9. Modules should be mapped onto a weekly class schedule with the dates of important assignments added. 

Any changes made in the syllabus should be reflected in the UF Academic Approvals form 18500. 

Thanks and best regards,

Heather

*Heather J. McAuslane, Ph.D. (she/her/hers)*

*Professor and Associate Dean*

College of Agricultural and Life Sciences | UF/IFAS

2016 McCarty Hall D | POB 110270 | Gainesville, FL 32611-0270

(352) 392-1963 | (352) 392-8988 FAX

[hjmca@ufl.edu](mailto:hjmca@ufl.edu) | <http://cals.ufl.edu>

\*\*\*\*\*

Hi Michael and Sabine,

Sorry for the late response regarding your CALS Curriculum Committee submission.

I noted that in the new syllabus you don't have any course objectives written out in the format of

"After completing this course, students will be able to..." followed by a bulleted list of measurable adjectives that utilize Bloom's Taxonomy.

There are two documents on the CALS Curriculum Committee website (<https://cals.ufl.edu/faculty-staff/committees/>) under "Other Reference Documents" at the bottom that provide guidance on the format required for the objectives.

The way the section is currently written it would not pass the university level curriculum committee.

Kind Regards,  
Jennifer

Jennifer Weeks, Ph.D.  
Department of Entomology and Nematology  
University of Florida  
PO Box 110620  
970 Natural Area Drive, Steinmetz Hall  
Gainesville, FL 32611  
(352) 273-3955

.....

Good afternoon,

Here is my feedback regarding this course revision. First, I love the AI innovation used to revise the course.

As for revisions, I may be misunderstanding the CALS syllabus boilerplate ([https://cals.ufl.edu/content/pdf/Faculty\\_Staff/CALS-Syllabus-Policy.pdf](https://cals.ufl.edu/content/pdf/Faculty_Staff/CALS-Syllabus-Policy.pdf)). I didn't see on the most recent syllabus the weekly course schedule of topics and assignments (just modules that don't correspond with weeks) nor a list of critical dates. All else looks good to me.

Kate



Kate Fogarty, Ph.D.  
Associate Professor & Extension Specialist, Youth Development  
Graduate Coordinator, YDFS & FYCS Programs  
Collegiate 4-H Faculty Advisor  
University of Florida  
Dept. of Family, Youth & Community Sciences  
3014 McCarty Hall D, PO Box 110310  
Gainesville, FL 32611-0310




She, Her/s, Herself

[kfogarty@ufl.edu](mailto:kfogarty@ufl.edu)  
(352) 273-3527 (office)  
(352) 392-8196 (fax)

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## Notes on the Course Revision SWS6722

1. Excellent course topic, and extremely timely
2. At first, I thought it was strange that a course revision would need to revise all or most of the course elements. Some others may also see this and suggest a new course. But as I looked at the course topics, there is a lot of overlap, and you may have already been AI before AI was a big thing. So, I see the revision as justifiable, and I think I can explain that to the committee.....On the other hand, the only drawback to the revision approach is that you may still want the flexibility of separating and preserving the 'spatial/landscape' aspect of the old version. I never like to see a topic/course go away once we've fought for it to be in our department. If this title/focus is changed to AI and another spatial analysis/landscape modeling course comes through, I won't have a strong case to object. As a result, making this request a new course proposal would preserve our claim on both specialties.
3. As already mentioned, you will need to revise the course/learning objectives.....the narrative can be called 'goals', but the course objectives need to be the statements of assessable outcomes. "Students will be able to...." language without using 'demonstrate' or 'understand'. These statements should match exactly what is on the request form 
4. As already mentioned, you will need to add examples (at least 5 or so) of the readings/articles (just citations) so people can see the types and ages of materials (some need to be last 5 years). 

5. As far as grading, if you change the % values for each assignment to points, the scale/system would be consistent and not need the decimal points that some people require.....points are always less ambiguous 
6. You should add more detail to the course schedule of topics so that the amount of time for each module/topic can be assessed. It doesn't have to be exact with dates, but most people use a week-by-week approach on this, and it must include timing for key course deliverables/exams/etc 
7. There is a lot of detail in the policies, e.g., attendance, late assignments, etc. that can cause some problems. I usually recommend just stick to required statements and give links for UF policies (less is more approach). When you teach you can always add back your personal statements, but for the approvals, it can get problematic when someone disagrees with your philosophy. 

Let me know if you have any questions, and if the last reviewer sends anything, I'll pass that along as well.

Best,

-PI

---

**Patrick W. Inglett**

Professor, Wetland and Aquatic Biogeochemistry

University of Florida, Department of Soil, Water and Ecosystem Sciences

2181 McCarty Hall-A, Gainesville, FL 32611 (352) 294-3170

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## SWS 6722 AI Modeling in Soil and Ecosystem Sciences

(AI: Artificial Intelligence)

Distance Education Course

### INSTRUCTOR:

Dr. Sabine Grunwald, Professor, Soil, Water and Ecosystem Sciences Department, University of Florida, 2181 McCarty Hall, PO Box 110290, Gainesville, FL 32611.

Faculty profile: <https://www.sgrunwald.org/>

### CONTACT:

- Email: [sabgru@ufl.edu](mailto:sabgru@ufl.edu)
- Phone: 352-294-3145

**TIMES:** Spring semester odd years

**CREDIT HOURS:** 3

**ENROLLMENT CAP:** 20

**FORMAT:** Lectures, readings, instructor facilitates class discussions, discovery and exploratory learning, and immersion in soil and ecosystem projects.

The course counts towards the ICGIS certificate (<http://web.uflib.ufl.edu/icgis>).

**TIME:** Wednesdays 6:15 – 8:10 pm U.S. Eastern time (11 Period and E1 Period); Zoom chat.

### PREREQUISITES:

A statistics or quantitative methods graduate course (e.g., STA 6166, GEO 6160), working knowledge in GIS (e.g., SWS 5721C), and basic coding skills (Python and/or R). If you do not fulfill these requirements seek permission from the instructor to enroll in this course.

### COURSE DESCRIPTION:

AI modeling to understand the properties and functions of soils and ecosystems.

### COURSE GOALS AND OBJECTIVES:

The goals of this class are to critically think about AI modeling approaches in soil and ecosystem sciences and evaluate and create AI models.

Objectives:

1. Discover AI modeling approaches applied to soils and ecosystems.
2. Discuss data and AI algorithms applied to soils and ecosystems.
3. Create your own AI model on a topic related to soils and/or ecosystem science.

After completing this course, students will be able to critically think about AI modeling approaches in soil and ecosystem sciences and evaluate and create AI models.

#### **What is AI Modeling:**

Data-driven AI modeling aims to predict, assess or optimize soil health, crop health, soil and ecosystem indicators, functions, processes, responses, interactions, and change in soil-ecosystems. The purpose of integrative soil-ecosystem modeling is rooted in finding better answers to the wicked environmental challenges of our time including adaptation and mitigation to global climate change, carbon and climate-smart agricultural management, multi-hazard eco-disasters (e.g., floods, droughts, erratic climate), food security, soil and public health, development of sustainable, resilient and regenerative agricultural systems, and many more. AI models are built from soil, spectral, and environmental geospatial data to model complex soil-water-crop-management-climate-human relationships. Data-driven AI has profound capacity to reshape our thinking of soil-ecosystems and how to sustain and regenerate them.

#### **LEARNING APPROACH:**

A discovery style of leaning is used in this course to facilitate learning. This means to open your eyes and learn through deep understanding of the AI paradigm. We learn through dialogue, playful exploration, critical reflection and discussion. Students will immerse themselves in the course topics through reading, discussion of case studies (e.g., hot topics in soil and ecosystem sciences, AI model applications in soil and ecosystem sciences), and design and conduct their own AI soil-ecosystem modeling projects. The instructor uses coaching techniques to facilitate the learning process, including targeted Q&A sessions, unlocking self-motivation to study, learning as exploration, and class discussions that acknowledge multiple perspectives.

#### **COURSE ACTIVITIES:**

Each student will work on the following:

- 1) Case study discussion: You will explore and discuss various published AI soil-ecosystem modeling studies.
- 2) AI modeling project: You will (i) Select a hot topic in soil and ecosystem sciences and discuss its significance; (ii) Conduct a brief literature review on this topic: focus on AI modeling approaches that have been used to study the selected topic (read and cite a minimum of 10 peer-reviewed journal articles, books, and/or book chapters); (iii) Identify research objectives to investigate the selected soil-ecosystem topic; (iv) Acquire soil and environmental data to meet the project objectives; (v) Apply at least two AI methods to the data; describe the methods to train and validate the model; assess model performance, conduct error and uncertainty analyses; (vi)

**Commented [SG1]:** After semester experience with Packback.AI in another course I do not recommend to use it in any other course like this one. Packback.AI needs to be improved to facilitate student learning.

Document and discuss results, (vii) Present the AI modeling results in class and submit a project report.

The project encourages students to think critically and learn how to approach an unknown complex soil-ecosystem topic. Students have to demonstrate mastery, comprehension, application, and synthesis of a given set of data and concepts into a model framework.

Students can choose to conduct the AI modeling project individually. Each student will document their work progress in class in form of a personal development, health and well-being portfolio.

**COURSE WEB SITE:**

UF Canvas course management system (eLearning): <https://elearning.ufl.edu/>

**SOFTWARE AND CODING:**

ArcGIS Pro, Python, and R.

**READING MATERIAL:**

Reading material in this course is based on journal articles available through the UF library.

Reading examples

Diaz-Gonzalez, F. A., Vuelvas, J., Correa, C. A., Vallejo, V. E., & Patino, D. (2022). Machine learning and remote sensing techniques applied to estimate soil indicators – Review. *Ecological Indicators*, 135, 108517. <https://doi.org/10.1016/j.ecolind.2021.108517>

Grunwald, S. (2021). Grand challenges in pedometrics-AI research. *Frontiers in Soil Science - Pedometrics*, 1(Article 714323), 1–8. <https://doi.org/10.3389/fsoil.2021.714323>

Grunwald, S. (2022). Artificial intelligence and soil carbon modeling demystified: Power, potentials, and perils. *Carbon Footprints*, 1(5), 1–23. <https://doi.org/10.20517/cf.2022.03>

Khaledian, Y., & Miller, B. A. (2020). Selecting appropriate machine learning methods for digital soil mapping. *Applied Mathematical Modelling*, 81, 401–418. <https://doi.org/10.1016/j.apm.2019.12.016>

LeCun, Y., Bengio, Y., & Hinton, G. (2015). Deep learning. *Nature*, 521(7553), 436–444. <https://doi.org/10.1038/nature14539>

Liao, S. M. (Ed.). (2020). *Ethics of artificial intelligence*. Oxford University Press.

McBratney, A. B., Minasny, B., & Stockmann, U. (Eds.). (2018). *Pedometrics* (1st ed.). Springer.

Ng, W., Minasny, B., Montazerolghaem, M., Padarian, J., Ferguson, R., Bailey, S., & McBratney, A. B. (2019). Convolutional neural network for simultaneous prediction of several soil properties using visible/near-infrared, mid-infrared, and their combined spectra. *Geoderma*, 352, 251–267. <https://doi.org/10.1016/j.geoderma.2019.06.016>

Padarian, J., Minasny, B., & McBratney, A. B. (2019). Using deep learning for digital soil mapping. *SOIL*, 5(1), 79–89. <https://doi.org/10.5194/soil-5-79-2019>

Russell, S., & Norvig, P. (2020). *Artificial intelligence: A modern approach*. Pearson.

Wadoux, A. M. J.-C., Samuel-Rosa, A., Poggio, L., & Mulder, V. L. (2020). A note on knowledge discovery and machine learning in digital soil mapping. *European Journal of Soil Science*, 71(2), 133–136. <https://doi.org/10.1111/ejss.12909>

Zhao, B., Zhang, S., Xu, C., & Liu, X. (2020). Spoofing in geography: Can we trust artificial intelligence to manage geospatial data? In X. Ye & H. Lin (Eds.), *Spatial synthesis. Human dynamics in smart cities*. (pp. 325–338). Springer. [https://doi.org/10.1007/978-3-030-52734-1\\_19](https://doi.org/10.1007/978-3-030-52734-1_19)

#### RECOMMENDED TEXTBOOKS:

Select one of the books as supporting material to deepen your skills in the topical area of your AI modeling project: AI & agriculture (**AI-Ag**), AI general (**AI-G**), AI & environmental sensing (**AI-E**), AI & soils (**AI-S**), AI technical and coding skills of machine learning models (**AI-T**).

**AI-T:** Géron A. (2023). *Hands-On Machine Learning with Scikit-Learn, Keras & TensorFlow: Concepts, Tools, and Techniques to Build Intelligent Systems*. O'Reilly Media.

**AI-Ag:** Kose U., Prasath V.B.S., Mondal M.R.H., Podder P., & Bharati S. (Eds.) (1<sup>st</sup> Ed.) (2022). *Artificial Intelligence and Smart Agriculture Technology*. CRC Press.

**AI-S:** Malone B.P., Minasny B., & McBratney A.B. (2017). *Using R for Digital Soil Mapping*. Springer.

**AI-S:** McBratney A.B., Minasny B., & Stockman U. (Eds.) (2018). *Pedometrics* (1<sup>st</sup> Ed.). Springer.

**AI-E:** Mohsen A., Razmjou A., & Beheshti A. (Eds.) (2022). *Artificial Intelligence and Data Science in Environmental Sensing* (1<sup>st</sup> Ed.). Academic Press.

**AI-G:** Russell S. & Norvig P. (2021). *Artificial Intelligence – A Modern Approach* (4<sup>th</sup> Ed.). Pearson.

#### GRADING:

Case study discussion (four graded discussions) – AI modeling in soil and ecosystem sciences: 40%

AI modeling project:

- First part (15%): Design of project (selection of topic and description of significance, literature review, and proposal how to conduct the project: data and methods).
- Second part (15%): Conduct the project and present model results.
- Third part (15%): Submit AI modeling project report.

Personal development, health, and well-being portfolio (15%): See dimensions of wellness at UF <https://gatorwell.ufl.edu/health-topic/dimensions-of-wellness/>.

#### GRADING SCHEME:

Passing Letter Grade	Course Points	Grade Points
A	95-100	4.00



A-	90-95	3.67
B+	90-85	3.33
B	85-80	3.00
B-	80-75	2.67
C+	75-70	2.33
C	70-65	2.00
C-	65-60	1.67
D+	60-55	1.33
D	55-50	1.00
D-	50-45	0.67
F	45-below	0

Failing Grades	Course Points	Grade Points
E	0	0
WF	0	0
I	0	0
NG	0	0

Definitions

E = Failure  
H = Deferred grade assigned only in approved sequential courses or flexible learning  
I\* / I = Incomplete  
N\* / NG = No grade reported  
S = Satisfactory  
U = Unsatisfactory  
W = Withdrew  
WF = Withdrew failing

The grading policy of UF will be followed in this course as outlined at:  
<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx#repeat>

**EXPECTATIONS AND GRADING POLICY IN THIS COURSE:**

The AI modeling case studies will serve as examples to learn how AI is applied in soil and ecosystem sciences. The discussion of these case studies will stimulate critical thinking how to apply AI soil-ecosystem modeling. Different AI methods will be explored, and their pros and cons discussed. A generative language AI tool (Packback.AI) that helps you to critically think and write about a topic considering multiple perspectives will be provided.

Students are expected to work independently on their AI modeling projects. Properly cite and give credit to data and literature sources used in your projects. In this course the antiplagiarism software Turnitin is used. Late submissions of the project reports will result in 15% reduction of points within 12 hours late submission and 30% reduction of points between 24 hours late submission. After more than 24 hours late submission zero points will be assigned. All project reports need to be submitted through the UF course website. Submissions via email attachments will not be accepted.

The IT staff of the University of Florida provides the service to assist with technical problems (e.g., ArcGIS software, access to software via UF Apps). R and Python are free to use.

## **COURSE MODULES:**

### **1. Introduction to Soil and Ecosystem Modeling (Week 1 and 2)**

- a. Wicked soil and environmental problems
- b. Soil-landscape dimensions and conceptual models of soil-ecosystems
- c. Significance of spatial and temporal scales in ecosystem modeling
- d. Soil and environmental geodata and platforms to support AI modeling

Discussion 1 assignment due.

### **2. Digital twins in Pedometrics and Environmetrics (Week 3 and 4)**

- a. Digital soil twins: Digital soil mapping and modeling approaches
- b. Digital twins of the total environment

Discussion 2 assignment due.

### **3. AI Model Applications in Soil and Ecosystem Sciences (Week 5 to 7)**

- a. Soil carbon modeling, soil respiration and greenhouse gas emissions
- b. Soil health indicators
- c. Soil-ecosystem indices
- d. Smart agricultural systems
- e. Ecosystem functions and processes

Discussion 3 assignment due.

AI modeling project Part 1 due.

### **4. Overview AI Modeling in Soil and Ecosystem Sciences (Week 8 to 11)**

- a. What is AI?
- b. The power, myths, risks, and perils of AI?
- c. The foundation and history of AI in context of soil and ecosystem sciences
- d. Data-driven AI modeling vs. knowledge-based modeling
- e. AI vs. other modeling paradigms (statistical, geostatistical, fuzzy logic, probabilistic, Bayesian, state-budget, optimization, multi-agent, phenomenological, mechanistic process-based modeling)
- f. The human dimension in AI soil-ecosystem modeling
- g. Ethics of data-driven AI in soil science, ecosystem sciences, and agriculture and life sciences

Discussion 4 assignment due.

AI modeling project Part 2 due.

### **5. Specific AI Methods and Model Assessments (Week 11 to 14)**

- a. Types of AI approaches: Machine learning, deep learning, and reinforcement learning
- b. Empirical soil and environmental data and pseudo variables
- c. Feature selection methods
- d. AI model assessments (training/calibration, verification/validation, error metrics, and uncertainty assessment)
- e. Commonly used AI algorithms in soil and ecosystem sciences:
  - Classification and Regression Trees

- Bagged Regression Trees
  - Boosted Regression Trees
  - Random Forest
  - Quantile Regression Forest
  - Support Vector Machines
  - Support Vector Regression
  - Partial Least Square Regression
  - Cubist
  - Artificial Neural Networks, ANN (backpropagation ANN, recurrent neural networks, RNN; convolutional neural networks, CNN)
- f. Integration modeling (triangulation, hybrid modeling, coupled models, ensemble modeling, sequential modeling, meta-modeling)

AI modeling project Part 3 due.

## **ATTENDANCE AND MAKE-UP WORK**

### **Absences**

Students are responsible for satisfying all academic objectives as defined by the instructor. Absences count from the first class meeting.

In general, acceptable reasons for absence from or failure to participate in class include illness, serious family emergencies, special curricular requirements (e.g., judging trips, field trips, professional conferences), military obligation, severe weather conditions, religious holidays and participation in official university activities such as music performances, athletic competition or debate. Absences from class for court-imposed legal obligations (e.g., jury duty or subpoena) must be excused. Other reasons also may be approved.

You cannot participate in classes unless you are registered officially or approved to audit with evidence of having paid audit fees. The Office of the University Registrar provides official class rolls to instructors.

If you do not participate in at least one of the first two class meetings of a course or laboratory in which you are registered, and you have not contacted the department to indicate your intent, you can be dropped from the course. You must not assume that you will be dropped, however. The department will notify you if you have been dropped from a course or laboratory. You can request reinstatement on a space-available basis if you present documented evidence.

The university recognizes the right of the individual professor to make attendance mandatory. After due warning, professors can prohibit further attendance and subsequently assign a failing grade for excessive absences.

### **Religious Holidays**

The Florida Board of Education and state law govern university policy regarding observance of religious holidays. The following guidelines apply:

- Students, upon prior notification to their instructors, shall be excused from class or other scheduled academic activity to observe a religious holy day of their faith.
- Students shall be permitted a reasonable amount of time to make up the material or activities covered in their absence.

- Students shall not be penalized due to absence from class or other scheduled academic activity because of religious observances.

If a faculty member is informed of or is aware that a significant number of students are likely to be absent from class because of a religious observance, the faculty member should not schedule a major exam or other academic event at that time.

A student who is to be excused from class for a religious observance is not required to provide a second party certification of the reason for the absence. Furthermore, a student who believes that he or she has been unreasonably denied an education benefit due to religious beliefs or practices may seek redress through the student grievance procedure.

### **Illness Policy**

If you are absent from classes or examinations because of illness you should contact your instructors. You should contact your college by the deadline to drop a course for medical reasons. You can petition the [Dean of Students Office](#) to drop a course for medical reasons. The university's policy regarding [medical excuse](#) from classes is maintained by the Student Health Care Center.

### **Twelve-Day Rule**

Students who participate in athletic or extracurricular activities are permitted to be absent 12 scholastic days per semester without penalty. (A scholastic day is any day on which regular class work is scheduled.) Instructors must be flexible when scheduling exams or other class assignments.

The 12-day rule applies to individual students participating on athletic or scholastic teams. Consequently, a group's schedule that requires absence of more than 12 days should be adjusted so that no student is absent from campus more than 12 scholastic days.

If you previously have been warned about absences or unsatisfactory work you should not incur additional absences, even if you have not been absent 12 scholastic days. It is your responsibility to maintain satisfactory academic performance and attendance.

### **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>.

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluer.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-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>. The updated (2018) UF Student Honor and Student Code of Conduct can be found at: <http://gatortimes.ufl.edu/2018/08/20/updated-uf-student-honor-and-student-code-of-conduct/>.

#### **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/](http://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/](http://www.counseling.ufl.edu/cwc/)
  - Counseling Services
  - Groups and Workshops
  - Outreach and Consultation
  - Self-Help Library
  - Wellness Coaching

- *Career Resource Center, First Floor JWRU, 392-1601, [www.crc.ufl.edu/](http://www.crc.ufl.edu/)*

**RECORDINGS:**

Our class sessions may be audio visually recorded for students in the class to refer back and for enrolled students who are unable to attend live. Students who participate with their camera engaged or utilize a profile image are agreeing to have their video or image recorded. If you are unwilling to consent to have your profile or video image recorded, be sure to keep your camera off and do not use a profile image. Likewise, students who un-mute during class and participate orally are agreeing to have their voices recorded. If you are not willing to consent to have your voice recorded during class, you will need to keep your mute button activated and communicate exclusively using the "chat" feature, which allows students to type questions and comments live. The chat will not be recorded or shared. As in all courses, unauthorized recording and unauthorized sharing of recorded materials is prohibited.



## SWS 6722

# Soil-Landscape Modeling —

## Integrative Ecosystem Modeling

Distance Education Course

**INSTRUCTOR:**

Dr. Sabine Grunwald, Professor, Soil and Water Sciences Department, University of Florida, 2181 McCarty Hall, PO Box 110290, Gainesville, FL 32611.

**CONTACT:**

- Email: [sabgru@ufl.edu](mailto:sabgru@ufl.edu)
- Phone: 352-294-3145

**TIMES:** Spring semester odd years

**CREDIT HOURS:** 3

**ENROLLMENT CAP:** 20

**FORMAT:** Lectures, instructor facilitates class discussions, discovery and exploratory learning, self-motivated reading, and immersion in integrative ecosystem projects. The course counts towards the ICGIS certificate (<http://web.uflib.ufl.edu/icgis>).

**TIME:** Wednesdays 6:15 – 8:10 pm U.S. Eastern time (11 Period and E1 Period); Zoom chat.

**PREREQUISITES:**

A statistics or quantitative methods course at the graduate level (e.g., STA 6166, GEO 6160, ALS 5932, Introduction to Programming and Remote Sensing with R (GEO 6938)) and knowledge in GIS (e.g., SWS 5721C). If you do not fulfill these requirements seek permission from the instructor to enroll in this course.

**COURSE GOAL AND OBJECTIVES:**

*Soil-landscape* refers to the totality of an ecosystem—below-ground (soil and lithology) and above ground (climate, vegetation, land use, topography/landform) components, organisms (biota), and the human dimension (social systems, culture, people’s needs, beliefs, values, and opinions).

The goal of this class is to explore various concepts, qualitative, and quantitative methods to model and understand soil-landscape systems considering its biological and chemical composition, physical environment, social dimension, as well as values, needs, beliefs, and perceptions of people and

stakeholders. Understanding the totality of an ecosystem facilitates to better infer on environmental consequences (e.g., carbon dynamics, fate of nutrients, environmental induced trauma of people, environmental justice and gentrification, degradation of ecosystems and well-being of people). The specific course objectives are to:

- (1) Analyze and understand relationships between various dimensions of the soil-landscape system as an integrated whole.
- (2) Explore model approaches to assess, predict, simulate, and understand behaviors and responses to changes from an integrative ecosystem perspective.
- (3) Synthesize understanding of the totality of soil-landscapes into complex models.

The purpose of integrative ecosystem modeling is rooted in finding better answers to the wicked environmental problems of our time including global climate change, multi-hazard eco-disasters, food security, soil and public health. Diverse ecosystems exist with natural non-managed ecosystems in decline, conservation management systems, and tightly managed agro-forest and urban ecosystems to benefit people and provide ecosystem services.

Integral ecology/ies provide a whole system perspective that aim to integrate social and environmental system dimensions. The course is focused to broaden understanding of the totality of an integrated social-environmental system that considers people, stakeholders, and cultural sensibilities as important as biogeochemical processes. To solve environmental crises and specific problems (e.g., soil carbon losses or well-being and health of people) requires not only to study and understand the ecological, chemical, or physical processes but also the participation and thinking of people and decision-makers. This course aims to connect science facts and understanding and people.

#### **LEARNING APPROACH:**

A discovery style of leaning is used in this course as foundation to facilitate learning. This means to open your eyes and learn through deep understanding, rather than pre-prepared fixed/rigid class modules and assignments. We learn through dialogue, playful exploration, and critical reflection and discussion. Students will emerge themselves in the course topics through reading, critique of case studies (selected hot topic cases), and designing and creating their own projects to investigate an integral ecological topic.

The instructor uses coaching techniques to facilitate the learning process, including targeted Q&A sessions, unlocking self-motivation to study, learning as exploration, and multi-perspectival class discussions.

The course blends subjective and objective, knowledge-based (discussion and interpretation) and quantitative approaches (modeling). Note that the emphasis in this course is not as much on learning the specific technical nuts-and-bolts (step-by-step instructions) of specific quantitative methods. Rather the emphasis is on understanding in *what context* to apply a specific method to an ecosystem question/problem/crisis, *how to select* and *integrate* various qualitative and quantitative methods, *how scale* influences your models, *how to data mine* and *fuse* data and methods to address a complex ecosystem problem of interest. Environmental facts, empirical data, people's values and beliefs, and social needs are part of integrative ecological models.

#### **COURSE PROJECTS:**

Each student will work on two projects: (1) Literature project and (2) Integrative ecosystem modeling project. These projects are focused on the following:



- Literature project: (i) Select a topic related to integrative ecosystem modeling; (ii) Conduct a literature review based on a minimum of 10 peer-reviewed journal articles, textbook chapters, and/or proceeding papers; (iii) Submit a project report; and (iv) Present results of the project in class.
- Integrative ecosystem modeling project: (i) Define the significance of a specific ecosystem problem/crisis, (ii) Identify objectives and research questions how to study this specific ecosystem problem/crisis (hypotheses are optional), (iii) Select a study area, (iv) Identify method(s) how to investigate the ecosystem problem/crisis, (v) Produce a prototype integrative model and document results, (vi) Interpret and critically discuss findings, (vii) Submit a project report; and (viii) Present project findings in class.

The projects encourage students to think critically and learn how to approach an unknown complex soil-landscape topic. Students have to demonstrate mastery, comprehension, application, and synthesis of a given set of concepts into a model framework.

**COURSE WEB SITE:**

UF Canvas course management system: <https://elearning.ufl.edu/>

**SOFTWARE:**

ArcGIS; R, and statistical software packages available by CALS, UF apps.

**READING MATERIAL:**

Reading material in this course is based on journal articles and select book chapters available through the UF library.

**RECOMMENDED TEXTBOOKS and CHAPTERS:**

Esbjörn-Hargens, S., & Zimmerman, M.E. (2009). *Integral ecology: Uniting multiple perspectives on the natural world*. Integral Books. (chapters 2, 5-8)

Grunwald, S. (Ed.). (2006). *Environmental soil-landscape modeling - Geographic information technologies and pedometrics*. CRC Press. (chapters 1 and 3)

Grunwald, S., Clingensmith, C. M., Gavilan, C. P., Mizuta, K., Kastner-Wilcox, R. K., Pinheiro, E. F. M., Cedia, M. B., & Ross, C. W. (2017). Integrating new perspectives to address global soil security: Ideas from integral ecology. In D. J. Field, C. L. S. Morgan, & A. B. McBratney (Eds.), *Global soil security* (pp. 319–330). Springer Nature Publ.

Landa, E. R., & Feller, C. (Eds.). (2010). *Soil and Culture*. Springer. (chapters 13 and 14)

McBratney, A. B., Minasny, B., & Stockman, U. (Eds.). (2018). *Pedometrics* (1st ed.). Springer. (or similar quantitative oriented soil-landscape or environmental modeling book)

Mickey, S., Kelly, S., & Robbert, A. (Eds.). (2017). *The variety of integral ecologies: Nature, culture, and knowledge of the planetary era*. State University of New York Press.

**GRADING:**

Literature project: 30%

Quantitative modeling project: 30%

Discussion posts: 30%

Participation in discussion: 10%

**GRADING SCHEME:**

<b>Passing Letter Grade</b>	<b>Course Points</b>	<b>Grade Points</b>
A	95-100	4.0
A-	90-95	3.67
B+	90-85	3.33
B	85-80	3.0
B-	80-75	2.67
C+	75-70	2.33
C	70-65	2.0
C-	65-60	1.67
D+	60-55	1.33
D	55-50	1.0
D-	50-45	0.67
S	45-below	0

<b>Failing Grades</b>	<b>Course Points</b>	<b>Grade Points</b>
E	0	0
WF	0	0
I	0	0
NG	0	0

**Definitions**

E = Failure

H = Deferred grade assigned only in approved sequential courses or flexible learning

I\* / I = Incomplete

N\* / NG = No grade reported

S = Satisfactory

U = Unsatisfactory

W = Withdrew

WF = Withdrew failing

The grading policy of UF will be followed in this course as outlined at:

<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx#repeat>

**EXPECTATIONS AND GRADING POLICY IN THIS COURSE:**

It is expected that students attend the Zoom chat and study the assigned learning material provided on the course web site and reading material. The participation grade is based on active participation in class discussions. This means to engage and pro-actively participate in class discussions. Students are expected to work independently on their projects. Copying of results (reports) from other students will be considered as plagiarism. In this course the antiplagiarism software Turnitin is used.

Late submissions of the project reports will result in 15% reduction of points within 24 hours late submission and 30% reduction of points between 24-48 hours late submission. After more than 48 hours late submission zero points will be assigned. All exam and project reports need to be submitted through the UF course website. Submissions via email attachments will not be accepted.

The IT staff of the University of Florida provides the service to assist with technical problems (e.g., ArcGIS software, access to statistical software). The CALS virtual computer lab (VCL) is available for students in class to work on projects.

## **COURSE MODULES:**

### **1. Introduction to Integrative Soil-Landscape Modeling**

- a. Soil-landscape dimensions
- b. Spatial and temporal scales
- c. Wicked environmental problems

### **2. Integrative Ecosystem Modeling**

- a. Quantitative ecosystem modeling: Data, data relations, artificial intelligence (machine learning and deep learning)
- b. Is the human a node in the system or an active participating agent that shapes the future of ecosystems?
- c. One model or multiple models to solve ecosystem problems?
- d. How do we know things?
- e. What role memes play in soil-landscapes?
- f. Integral theory, integral ecology, and integral ecologies

### **3. Modeling Approaches and Philosophies**

- a. Tacit models: Expert-/knowledge-based models (e.g., soil surveys)
- b. Empirical models: State-budget models (e.g., carbon or nutrient stock assessments)
- c. Geospatial and geostatistical models (e.g., remote sensing supported modeling of terrestrial carbon)
- d. Stochastic and probabilistic models (e.g., soil carbon stock assessment)
- e. Fuzzy logic models (e.g., vague models of ecosystem health)
- f. Efficiency index models (e.g., efficiencies of net primary productivity of ecosystems based on Data Envelopment Analysis)
- g. Deterministic/mechanistic models: Process-based simulation models (e.g., Earth simulation modeling of global climate change)
- h. Autopoietic models: Multi-agent models
- i. Phenomenological models (e.g., inner soil, nature experiences, subjective ways of knowing)
- j. Survey models: Quantitative research models to understand people's beliefs, values, needs, and perceptions
- k. Bayesian Belief Networks (models that integrate people's beliefs into the modeling of ecosystems)
- l. Artificial intelligence modeling (machine learning and deep learning)
- m. Metaphors: Symbolic models (cultural memes)

### **4. Integrative Ecosystem Modeling**

- a. Data mining

- b. Data fusion
- c. Triangulation
- d. Hybrid/mixed models
- e. Meta modeling (ensemble / multi-models, coupled and sequential models)
- f. Synthesis
- g. Models in context of politics and diverse socio-cultural systems

## **ATTENDANCE AND MAKE-UP WORK**

### **Absences**

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Students are responsible for satisfying all academic objectives as defined by the instructor. Absences count from the first class meeting.

In general, acceptable reasons for absence from or failure to participate in class include illness, serious family emergencies, special curricular requirements (e.g., judging trips, field trips, professional conferences), military obligation, severe weather conditions, religious holidays and participation in official university activities such as music performances, athletic competition or debate. Absences from class for court-imposed legal obligations (e.g., jury duty or subpoena) must be excused. Other reasons also may be approved.

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### **Religious Holidays**

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- Students, upon prior notification to their instructors, shall be excused from class or other scheduled academic activity to observe a religious holy day of their faith.
- Students shall be permitted a reasonable amount of time to make up the material or activities covered in their absence.
- Students shall not be penalized due to absence from class or other scheduled academic activity because of religious observances.

If a faculty member is informed of or is aware that a significant number of students are likely to be absent from class because of a religious observance, the faculty member should not schedule a major exam or other academic event at that time.

A student who is to be excused from class for a religious observance is not required to provide a second party certification of the reason for the absence. Furthermore, a student who believes that he or she has

been unreasonably denied an education benefit due to religious beliefs or practices may seek redress through the student grievance procedure.

### **Illness Policy**

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If you are absent from classes or examinations because of illness you should contact your instructors. You should contact your college by the deadline to drop a course for medical reasons. You can petition the Dean of Students Office to drop a course for medical reasons. The university's policy regarding medical excuse from classes is maintained by the Student Health Care Center.

### **Twelve-Day Rule**

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Students who participate in athletic or extracurricular activities are permitted to be absent 12 scholastic days per semester without penalty. (A scholastic day is any day on which regular class work is scheduled.) Instructors must be flexible when scheduling exams or other class assignments.

The 12-day rule applies to individual students participating on athletic or scholastic teams. Consequently, a group's schedule that requires absence of more than 12 days should be adjusted so that no student is absent from campus more than 12 scholastic days.

If you previously have been warned about absences or unsatisfactory work you should not incur additional absences, even if you have not been absent 12 scholastic days. It is your responsibility to maintain satisfactory academic performance and attendance.

### **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>.

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-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>. The updated (2018) UF Student Honor and Student Code of Conduct can be found at: <http://gatortimes.ufl.edu/2018/08/20/updated-uf-student-honor-and-student-code-of-conduct/>.

#### **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/](http://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/](http://www.counseling.ufl.edu/cwc/)*
  - Counseling Services
  - Groups and Workshops
  - Outreach and Consultation
  - Self-Help Library
  - Wellness Coaching
- *Career Resource Center, First Floor JWRU, 392-1601, [www.crc.ufl.edu/](http://www.crc.ufl.edu/)*

#### **RECORDINGS:**

Our class sessions may be audio visually recorded for students in the class to refer back and for enrolled students who are unable to attend live. Students who participate with their camera engaged or utilize a profile image are agreeing to have their video or image recorded. If you are unwilling to consent to have your profile or video image recorded, be sure to keep your camera off and do not use a profile image. Likewise, students who un-mute during class and participate orally are agreeing to have their voices recorded. If you are not willing to consent to have your voice recorded during class, you will need to

keep your mute button activated and communicate exclusively using the "chat" feature, which allows students to type questions and comments live. The chat will not be recorded or shared. As in all courses, unauthorized recording and unauthorized sharing of recorded materials is prohibited.