CALS Curriculum Committee Meeting
December 14, 2018
2:00 p.m.
1044 McCarty Hall D


Agenda and Index for Materials

Approve Minutes from November 16, 2018 meeting

Dr. Brendemuhl: Update from UCC

Graduate New Course Proposals

1. PLP 6XXX – Impact through Networks (req. #13382)

2. PLS 5XXX – Upland Invasive Plant Management (req. #13330)

3. SWS 6XXX – Modeling Land Biogeochemistry (req. #13378)
CALS Curriculum Committee Meeting
November 16, 2018
Submitted by James Fant


Substitutes: Rhiannon Pollard for S. Sager
Misti Sharp for D. Farnsworth

Guests: Chris Wilson and Emily Johnson

Call to Order: The College of Agricultural and Life Sciences Curriculum Committee met on November 16, 2018 in Rm. 1044 McCarty Hall D. Dr. Inglett called the meeting to order at 2:00 p.m.

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

Approval of Minutes: A motion was made by Dr. Johnson to approve the minutes from the October 12, 2018 meeting of the CALS CC. The motion was approved.

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


Update from UCC: Dr. Brendemuhl noted the following items were acted upon at the UCC meeting on October 16th: A) New UG courses: 1) HOS 4XXX-Capstone Planning in Horticultural Sciences (approved); 2) HOS 4XXX-Genetics and Breeding of Vegetable Crops Production (approved); 3) HOS 4XXX-Horticultural Sciences Capstone (approved); 4) HOS 4XXX-Supervised Teaching Experience in Horticultural Sciences (tabled); 5) PLS 3XXXC-Hydroponic Systems (approved); B) Certificate Termination: 1) Personal and Family Financial Planning (approved); C) Proposed changes to UG courses: 1) HOS 3020C-Principles of Horticultural Crop Production (approved); and D) Proposed new joint course: 1) SWS 4XXX-Aquatic Toxicology: Science and Applications (approved). Dr. Brendemuhl indicated that the following items were on the UCC November 20th agenda: A) Proposed new joint courses: 1) ENY 4XXX Ecology and Conservation of Pollinators; 2) HOS 4XXX Organic weed Management; and 3) MCB 4XXX Probiotics. Other updates were similar to last month and included the new Compass releases and correcting degree audits. Work continues on SIDA
(Student-Initiated Drop/Add) and this is especially critical as the drop deadline is Monday, November 19\textsuperscript{th}. He once again reminded members concerning trainings associated with various rollouts of UF COMPASS and to stay abreast and take the trainings. Lastly, there will be a call for course proposals for Quest 2 coming in the spring 2019.

Graduate Course Change Proposal

1. WIS 6557 – Wildlife Conservation Laws and Legislation (req. #12887) 
   A motion was made by Dr. Porter to approve this item with changes required. The motion was approved. The word “Policy” needs to be added to the title of the proposed syllabus. The course description in the syllabus must match the description on the UCC form and be limited to a maximum of 50 words. Any other information can be listed under a heading of About this Course or Course Information. In the first course goal listed in the syllabus plane needs to be changed to plan. Since the grading breakdown is given in points it was suggested that the grading scale be done in points as well. The makeup policy listed in the syllabus is not in line with university policy. For submission purposes it is best to refer only to the university policy (link already included in syllabus). This will help avoid the item being recycled at the next level of the approval process. The boilerplate including all required CALS syllabus statements needs to be included to replace the existing information at the back of the provided syllabus. This information can be found at: http://cals.ufl.edu/faculty-staff/docs/policies/CALS%20Syllabus%20Policy%202017-18.pdf.

Undergraduate Course Change Proposal

2. FYC 4941 – Practicum in Family, Youth, and Community Sciences (req. #13282) 
   A motion was made by Dr. Porter to approve this item with changes required. The motion was approved. The course description heading in the syllabus needs to be changed to course information. The proposed additional prerequisites need to be included in the syllabus. The late assignments policy listed in the syllabus is not in line with university policy. For submission purposes it is best to refer only to the university policy. This link needs to be included in the syllabus to address the issue: https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx. The most up to date version of the required CALS syllabus statements needs to be included in the syllabus. This can be found at: http://cals.ufl.edu/faculty-staff/docs/policies/CALS%20Syllabus%20Policy%202017-18.pdf.

Recycled items

3. HOS 3XXX – Viticulture for Table Grapes and Wine (req. #13128) 
   A motion was made by Dr. Johnson to approve this item with changes required. The motion was approved. In the grading scheme on both the UCC form and in the syllabus the quizzes section needs to include 2 points each and the problem solving section needs 7.5 points each. In the midterm exam section 60 minutes needs to be changed to 50 minutes. In the final exam section 60 minutes should be changed to 50 minutes unless the exam is given during exam week.
4. Environmental Microbiology Graduate Certificate (req. #12418)
   A motion was made by Dr. Porter to approve this item as submitted. The motion was approved.

Discussion item

5. Review of CALS Guidelines for Writing Learning Objectives
   It was decided that there will be a committee formed to review this policy and propose an updated version to be presented at a later meeting of the CALS CC. Members of this committee are as follows: Rhiannon Pollard, Gerardo Nunez, Jennifer Weeks, Kate Rose and Anne Mathews.

The meeting was adjourned at 2:50 p.m.
## Cover Sheet: Request 13382

**PLP6XXX Impact through Networks**

### Info

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### Actions

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**No document changes**
Course|New for request 13382

Info

Request: PLP6XXX Impact through Networks
Description of request: Creation of new course
Submitter: Karen Garrett karengarrett@ufl.edu
Created: 11/30/2018 2:04:19 PM
Form version: 1

Responses

Recommended Prefix PLP
Course Level 6
Number XXX
Category of Instruction Intermediate
Lab Code C
Course Title Impact through Networks
Transcript Title Impact thr Networks
Degree Type Graduate

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

Amount of Credit 2

S/U Only? No
Contact Type Regularly Scheduled
Weekly Contact Hours 2

Course Description This course focuses on networks and the impact of system changes in agriculture, natural ecosystems, and health care, with an introduction to network science in the R programming environment, and review of applications in biological and social sciences. Students develop projects that apply network analysis to their own study systems.

Prerequisites General knowledge of agricultural, ecological, or epidemiological systems, at least two graduate or advanced undergraduate courses applying quantitative concepts and tools

Co-requisites None

Rationale and Placement in Curriculum This course is designed to give graduate students experience in applying network analysis to biological topics broadly speaking: agriculture, public health, and more. It integrates biological and social applications of network analysis, for students who are studying systems where management decisions are important. Students come away from the course with a project that may become part of their theses, and experience in interdisciplinary thinking.

Course Objectives Participants who have completed this course will be able to...
- explain how networks are defined and applied in agriculture, ecology, and epidemiology
- explain basic principles of impact analysis in these systems
- broadly understand and discuss journal articles describing networks in these systems
- evaluate dynamic networks and study processes in networks
- collect data for characterizing networks and testing the fit of network models
- apply network analysis to ask questions about their own systems using R

Course Textbook(s) and/or Other Assigned Reading Optional books are:

Journal articles for discussion are identified in discussion with the class to match their interests, likely
including examples in plant disease epidemiology, human epidemiology, microbiomes, agricultural development, ecological networks, and seed systems

**Weekly Schedule of Topics**

1. Course overview, and examples of what can be done with skills from this class
2. Intro to R
3. Networks and adjacency matrices
5. Describing nodes in R. Microbiome networks
7. Networks of association in R. Networks and meta-populations in landscapes
8. Preparing project proposals. Statistical models of networks in R. Mathematical models of networks in R
9. Survey of other network types (‘omics, economics, ecology, communication, etc.)

10. Proposal presentations
11. Exponential random graph models (ERGMs) in R
13. Multilayer networks
15. Simulating scenarios
16. Bayesian networks in R
17. Final project presentations

**Links and Policies**

Attendance and make-up policies

This is a synchronous course, to make the most of interactions among participants. Discussion among course participants is an important part of the learning experience, so attendance is required. Three course meetings can be missed without explanation (with the exception of dates when the participant has a particular responsibility, such as leading discussions or presenting). Please alert the instructor if there is a serious health problem or other emergency.

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.

Accommodations 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 should first register with the Disability Resource Center at 0001 Reid Hall, 352-392-8565, www.dso.ufl.edu/drc/ and provide appropriate documentation.

On-line course evaluation

For this course, students will be asked to anonymously provide some more specific recommendations for making the course as useful and interesting as possible, in both a mid-term survey and a final survey. This will be in addition to the general UF course assessment.

UF Policy: 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.

Materials and supplies fees

None

UF Policy on 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.

UF Policy on 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.

Campus helping resources

The university's counseling resources are available for students experiencing personal problems that interfere with their general well-being and/or academic performance. The Counseling & Wellness Center provides confidential counseling services at no cost for students that are currently enrolled with the university.

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

- Career Resource Center, First Floor JWRU, 352-392-1601, www.crc.ufl.edu/

Student complaints

If there is an issue in the course, please bring it to the instructor's attention. UF policies about more serious complaints are described in these documents.

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

**Grading Scheme**

- 20% Class discussions
- 20% Weekly quizzes and assignments
- 20% Project proposal
- 10% Journal article presentation and discussion
- 30% Final project

Brief quizzes covering recent course topics are given most weeks, to help participants keep up with the course material. The lowest three quiz scores will be dropped from the grade, so there is no option to make up quizzes.

The project proposal will give students an opportunity to show how they can apply the course concepts and tools to an area of particular interest to them. The project proposal is presented in class (approximately 15 minutes per student, depending on course enrollment), and covers a topic of
particular interest to an individual student, drawing on course material about network analysis. The project proposal outlines the analysis that the student will later present as the final project. The project proposal is evaluated based on a course rubric for proposal presentation.

Each participant will lead or co-lead a journal article discussion for the group. The discussion is evaluated based on a course rubric for leading article discussions.

Final projects will be presented and discussed in the class (approximately 20 minutes per student, depending on course enrollment). The final project builds on the material presented in the project proposal, including analyses of real data or simulated data provided for students to analyze when appropriate real data are not yet available. (For example, if a student is planning to collect a particular type of data in future semesters, the student could temporarily work with a similar simulated data set for purposes of this class project.) The final project is evaluated based on a course rubric for project presentation.

If the grade on an assignment appears incorrect, the process for requesting reconsideration of the grade is to prepare a written statement describing where the error lies, to be turned into the instructor within one week of receiving the grade.

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

Grading scale: 94-100 A; 90-93 A-; 87-89 B+; 84-86 B; 80-83 B-; 77-79 C+; 74-76 C; 70-73 C-; 67-69 D+; 64-66 D; 60-63 D-

Instructor(s) Karen Garrett
Impact through Networks

PLP 6xxx

2 credit hours

Class meetings: Tuesday and Thursday, Period 5 (11:45-12:35), 2564 Fifield Hall

Fall semester, 2019 and alternate years

Prerequisites

General knowledge of agricultural, ecological, or epidemiological systems, and at least two graduate or advanced undergraduate courses applying quantitative concepts and tools (such as courses addressing statistics, mathematics, or engineering)

Instructor: Dr. Karen A. Garrett (garrettlab.com)
Plant Pathology, Institute for Sustainable Food Systems, Emerging Pathogens Institute
Office: 2411 Fifield Hall
Email: karengarrett@ufl.edu
Phone: 352-273-9110

Course materials access: http://elearning.ufl.edu/

Office hours

By appointment in advance, 2-4 Tuesday and 3-5 Wednesday, or additional times as needed

Course overview

Outcomes in systems such as agriculture, natural ecosystems, and health care are often determined by processes that act through networks. Networks can describe the spread of pathogens, invasive species, consumer goods, ideas, and technologies. Networks can also describe associations, interactions, and transactions among people, species, and other agents. This course addresses how to analyze the impact of system changes in networks, such as the introduction of new species or new management techniques. This course provides an introduction to network science in the R programming environment, and a review of applications in biological and social sciences, including current methods used to evaluate impact. The course includes a combination of lectures to provide background information, discussion of current literature, computational analysis workshops to illustrate concepts, and individual projects to allow participants to apply ideas to systems that particularly interest them.

The course emphasizes concepts and use of existing tools, while at the same time it will offer a basis for the development of new tools for participants interested in further steps.
Course learning objectives

Participants who have completed this course will be able to...

❖ explain how networks are defined and applied in agriculture, ecology, and epidemiology
❖ explain basic principles of impact analysis in these systems
❖ identify and discuss key points in journal articles describing networks in these systems
❖ evaluate dynamic networks and study processes in networks
❖ collect data for characterizing networks that enable testing the fit of network models
❖ apply network analysis to ask questions about their own systems using R

Course outline (as of October 9, 2018 – subject to change)

Course assignments to be turned in or presented by students are indicated in bold

<table>
<thead>
<tr>
<th>Week</th>
<th>Tues: often a short lecture and discussion of a paper</th>
<th>Thurs: often a short lecture and a workshop for network analysis in R</th>
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<tbody>
<tr>
<td>Week 1</td>
<td>Intro to R (quiz)</td>
<td>First class: Course overview, and examples of what can be done with skills from this class</td>
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<td>Week 3</td>
<td>Networks and adjacency matrices</td>
<td>Matrices and simple networks in R (quiz)</td>
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<td>Epidemic networks</td>
<td>Describing nodes in R (quiz)</td>
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<td>Week 4</td>
<td>Microbiome networks</td>
<td>Visualizing and describing networks in R, part 1 (quiz)</td>
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<tr>
<td>Week 5</td>
<td>Social networks</td>
<td>Visualizing and describing networks in R, part 2 (quiz)</td>
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<tr>
<td>Week 6</td>
<td>Networks of association in R</td>
<td>Networks and meta-populations in landscapes (quiz)</td>
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<tr>
<td>Week 7</td>
<td>Preparing project proposals</td>
<td>Revisiting applications of networks in R (quiz)</td>
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<tr>
<td>Week 8</td>
<td>Statistical models of networks in R</td>
<td>Mathematical models of networks in R, part 1 (quiz)</td>
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<td>Week 9</td>
<td>Survey of other network types</td>
<td>Mathematical models of networks in R, part 2 (quiz)</td>
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<td>Week 10</td>
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<td>Paper discussion &amp; Value of information</td>
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<td>Week 13</td>
<td>Paper discussion &amp; Processes in networks</td>
<td>Paper discussion &amp; Multilayer networks</td>
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Grading

20% Class discussions
20% Weekly quizzes and assignments
20% Project proposal
10% Journal article presentation and discussion
30% Final project

Class discussions. When scientific papers are discussed, all participants will be expected to contribute to the discussion (even when not leading the discussion). When project proposals are presented, all participants are expected to contribute feedback for the projects.

Brief quizzes covering recent course topics are given most weeks, to help participants keep up with the course material. The lowest three quiz scores will be dropped from the grade; there is no option to make up quizzes.

The project proposal will give students an opportunity to show how they can apply the course concepts and tools to an area of particular interest to them. The project proposal is presented in class (approximately 15 minutes per student, depending on course enrollment), and covers a topic of particular interest to an individual student, drawing on course material about network analysis. The project proposal outlines the analysis that the student will later present as the final project. The project proposal is evaluated based on a course rubric for proposal presentation.

Each participant will lead or co-lead a journal article discussion for the group. The discussion is evaluated based on a course rubric for leading article discussions.

Final projects will be presented and discussed in the class (approximately 20 minutes per student, depending on course enrollment). The final project builds on the material presented in the project proposal, including analyses of real data or simulated data provided for students to analyze when appropriate real data are not yet available. (For example, if a student is planning to collect a particular type of data in future semesters, the student could temporarily work with a similar simulated data set for purposes of this class project.) The final project is evaluated based on a course rubric for project presentation.

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**Required course materials**

There is no required textbook for this course. Journal articles for discussion will be provided to the class. The journal articles will be chosen in discussion with the participants who will be leading discussions, to represent the range of topics in the schedule above.

For network analysis in R, both of the following books are good references. It’s recommended that course participants use at least one of these two books as a reference.

1. This one takes more of a statistical perspective, with more careful mathematical definitions and denser information:


2. Luke has a lot of experience in public health applications, and writes more toward non-statisticians:


Participants might be interested in the following book for reference, which provides much more information about general network applications than will be covered in this course:


The following is a good reference on social networks, authored by UF’s own Jeffrey C. Johnson:


A good reference for data science in R is the following, with a lot of good information available at http://r4ds.had.co.nz/


A good general reference for R with many examples of statistical analysis:


**Garrett’s teaching philosophy**
I think of teaching as a process that occurs in a network (of course). An individual could create a pretty good learning experience by finding a good set of books and papers on a topic, and trying out some R code on their own. However, this course is designed to offer a fuller experience and more efficient learning by linking participants to key literature, to relevant R packages, and to each other and the instructors through discussions and feedback. Engaging with a group of people interested in a topic can also be a lot of fun and boost creativity.

The course is designed to support participants in engaging with projects, rather than emphasizing testing. The quizzes are intended to provide some structure to help keep people up to date and engaged in the discussions. Most of the course activities will engage knowledge and creativity in developing projects. I will work to help each student develop a project that they will find useful in their current or future research.

**Attendance and make-up policies**

This is a synchronous course, to make the most of interactions among participants. Discussion among course participants is an important part of the learning experience, so attendance is required. Three course meetings can be missed without explanation (with the exception of dates when the participant has a particular responsibility, such as leading discussions or presenting). Please alert the instructor if there is a serious health problem or other emergency.

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

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UFlorida Virtual Lab

This virtual lab is available to all University of Florida students at [https://evaluations.ufl.edu/results](https://evaluations.ufl.edu/results).

**Materials and supplies fees**

None

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**Campus helping resources**

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- 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
• Training Programs
• Community Provider Database

- U Matter We Care, www.umatter.ufl.edu/
- Career Connections Center, First Floor JWRU, 392-1601, https://career.ufl.edu/

Student complaints

If there is an issue in the course, please bring it to the instructor’s attention. UF policies about more serious complaints are described in these documents.

- Online Course: http://www.distance.ufl.edu/student-complaint-process
Cover Sheet: Request 13330

Proposed new course - Upland Invasive Plant Management (PLS 5XXX)

Info

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Description of request

The Agronomy department is revising curriculum in weed science for graduate students working in invasive plant management and this course material is currently not available. In addition, this course will support the weed science certificate program being developed by the department and the Center for Aquatic and Invasive Plants.

Actions

<table>
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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 13330

Info
Request: Proposed new course - Upland Invasive Plant Management (PLS 5XXX)
Description of request: The Agronomy department is revising curriculum in weed science for graduate students working in invasive plant management and this course material is currently not available. In addition this course will support the weed science certificate program being developed by the department and the Center for Aquatic and Invasive Plants
Submitter: Gregory Macdonald pineacre@ufl.edu
Created: 11/8/2018 10:43:12 AM
Form version: 1

Responses
Recommended Prefix PLS
Course Level 5
Number XXX
Category of Instruction Advanced
Lab Code None
Course Title Upland Invasive Plant Management
Transcript Title Upland Plant Mgmt
Degree Type Graduate

Delivery Method(s) Online
Co-Listing No
Co-Listing Explanation this course will not be co-listed
Effective Term Earliest Available
Effective Year Earliest Available
Rotating Topic? No
Repeatable Credit? No

Amount of Credit 3

S/U Only? No
Contact Type Regularly Scheduled
Weekly Contact Hours 3
Course Description This course will provide students with a better understanding of upland invasive plant management. Students will learn about upland plant ecosystems, focusing on the role and impacts of nuisance and exotic plants, and how to manage nuisance and invasive plants.
Prerequisites Botany (BOT 2010) and Plant Physiology (BOT 3503 or HOS 4304 or AGR 4512)
Co-requisites none
Rationale and Placement in Curriculum This course will valuable background information for our students working in natural area weed/invasive plant management. This course will also be a core component of the Weed Science certificate program that is currently under development through the Agronomy Department. It is envisioned that this course and certificate program will provide educational opportunities for students working in invasive plant management.
Course Objectives 1) Explain what differentiates an invasive plant from other species
2) Systematically assess the impact of invasive species on various upland habitats
3) Identify and differentiate several common invasive species and similar native species
4) Develop an appropriate management plan for invasive species and explain the process in a scientific and systematic approach


Weekly Schedule of Topics

Week:
1. Introduction to Course
2. Brief Overview of Invasion theory by plants
3. Invasive Characteristics and Competition
4. Invasive Biology - Phenology
5. Invasive Biology - Propagule Physiology
6. Invasive Plants and Impacts - Xeric Ecosystems
7. Invasive Plants and Impacts - Mesic Ecosystems
8. Invasive Plants and Impacts - Hydric Ecosystems
9. Invasive Plants and Impacts - Anthropogenic Ecosystems
10. Overview of Management - Prevention and Biological Management Strategies
11. Mechanical and Fire Methodologies for Invasive Plant Management
12. Cultural/Restorative Management
13. Chemical Management – Labels, Regulations
15. Integrated Management Approaches

Links and Policies

Course Evaluation: 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.

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  - Groups and Workshops
  - Outreach and Consultation
  - Self-Help Library
  - Wellness Coaching
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- Sexual Assault Recovery Services (SARS)
- Student Health Care Center, 392-1161
- University Police Department - 392-1111 (or 9-1-1 for emergencies). http://www.police.ufl.edu/

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


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

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


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Grading Scheme Assignment:

Percent of Grade:
Discussion Posts

10%
Weekly Assignments

15%
Assessment #1

15%
Assessment #2
17.5%
Assessment #3
17.5%
Term Paper
25%
Total:
100%
The following grading scale will be used in this class.

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Instructor(s) Gregory E. MacDonald & to be determined
November 8, 2018

CALS Curriculum Committee

Dear CALS Curriculum Committee,

The Agronomy Department is developing a weed science certificate program at the graduate level. As part of this effort it was decided at a recent teaching program retreat to modify courses in our department. We proposed new course (PLS 5xxx) entitled Upland Invasive Plant Management, which is a graduate level course. This course will also be critical component of the Weed Science certificate program that is currently under development by our department. Since we envision the certificate for graduate and post-baccalaureate, we propose a new course at the 5000 level.

The Agronomy Department supports this proposed course, and would like it to be considered by the CALS Curriculum Committee.

Sincerely,

Dr. Robert Gilbert
Professor and Chair
Agronomy Department
The Center for Aquatic & Invasive Plants fully supports the new course entitled "Upland Invasive Plant Management". This course will be a core component of the Weed Science certificate program that is currently under development through the Agronomy Department and the center. It is envisioned that this course and certificate program will provide educational opportunities to state and federal stakeholders that work closely with invasive plant management.

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<tr>
<td>Center for Aquatic &amp; Invasive Plants</td>
<td>Jason Ferrell - Professor and Director</td>
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<tr>
<td>352-392-9613</td>
<td><a href="mailto:jferrell@ufl.edu">jferrell@ufl.edu</a></td>
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Comments

The Center for Aquatic & Invasive Plants fully supports the new course entitled "Upland Invasive Plant Management". This course will be a core component of the Weed Science certificate program that is currently under development through the Agronomy Department and the center. It is envisioned that this course and certificate program will provide educational opportunities to state and federal stakeholders that work closely with invasive plant management.
Upland Invasive Plant Management
PLS 5xxx
Agronomy Department - University of Florida
Fall Semesters

Instructors: Greg MacDonald
Office - 2059 McCarty Hall-D
Email - pineacre@ufl.edu
Office phone - 352-294-1594
Cell - 352-262-8393

Class Schedule: This is an online course, but **NOT** a go-at-your-own-pace course. Students are expected to watch the lectures and complete the accompanying assignments during their assigned week. Weekly assignments (quizzes, discussion posts, etc.) will be due by 11:55 PM on Sunday of each week.

Course Website: Course material and communication will be provided through the Canvas site at [http://lss.at.ufl.edu](http://lss.at.ufl.edu)

Course Description: This **3 credit** course will provide students with a better understanding of invasive plant management in upland environments. Students will learn about upland ecosystems, the biology and ecology of invasive plant species, and how to manage invasive species using chemical, mechanical, cultural, biological, and preventative methods. This online course has a lecture and lab component. In the lab component of the course, students will learn methods of invasive plant control and plant identification through video demonstrations and interviews.

Course Prerequisites: Required - Botany (BOT 2010) and Plant Physiology (BOT 3503, HOS 4304 or AGR 4512). Introductory ecology (PCB 4043c) helpful but not required.

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

1) Explain what differentiates an invasive plant from other species
2) Systematically assess the impact of invasive species on various upland habitats
3) Identify and differentiate several common invasive species and similar native species
4) Develop an appropriate management plan for invasive species and explain the process in a scientific and systematic approach.
Office Hours: By appointment – send an email to schedule a time. For those students located off-campus, phone or video conference will be arranged.

Class Participation: Students are expected to participate in discussion boards with other students and the instructors/TA’s. For every discussion assignment, students will be expected to respond to two other classmates.

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/ugrad/current/regulations/info/attendance.aspx.

Textbooks: No textbook required, but required readings will include:


Assessments and Grading: There will be three broad categories of graded assignments in this course:

1. Weekly Assignments: These assignments build on the content of that week’s lectures and/or lab, and will primarily take the form of short-
answer questions or class discussions. For the weeks where plant identification and calibration are discussed, assignments will take the form of multiple-choice quizzes.

2. **Exams:** There will be three exams.

3. **Term Paper:** A term paper will be required where students will be given an upland invasive plant scenario and are required to develop a management plan. More information on project requirements and grading will be provided through the course website on Canvas.

### Assignment: Percent of Grade:

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### Class Outline:

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<td>Sources of Introduction</td>
<td>Discussion Post</td>
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<td>3</td>
<td>Invasive Characteristics and Competition</td>
<td>Mechanisms of Competition/Spread</td>
<td>Competition Assignment</td>
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<td>Invasive Biology - Phenology</td>
<td>Introduction to Invasive Plant ID and Sources</td>
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<td>Invasive Biology – Propagule Physiology</td>
<td>Annuals and Short-lived Perennials</td>
<td>Plant Identification Quiz</td>
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<td>Invasive Plants and Impacts - Xeric Ecosystems</td>
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<td>Mechanical and Fire Methodologies for Invasive Plant Management</td>
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<td>Case Studies - Theoretical vs. Practical</td>
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Cover Sheet: Request 13378

SWS 6XXX - Modeling Land Biogeochemistry

Info

Process: Course|New|Grad
Status: Pending at CALS - College of Agricultural and Life Sciences
Submitter: Michael Sisk mlsisk@ufl.edu
Created: 11/29/2018 3:28:14 PM
Updated: 11/29/2018 3:44:57 PM
Description of request: New Graduate Course in Soil and Water Sciences Department

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<td>11/29/2018</td>
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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 13378

Info

Request: SWS 6XXX - Modeling Land Biogeochemistry
Description of request: New Graduate Course in Soil and Water Sciences Department
Submitter: Michael Sisk mjsisk@ufl.edu
Created: 11/29/2018 3:17:34 PM
Form version: 1

Responses

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

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

Amount of Credit 3

S/U Only? No
Contact Type Regularly Scheduled
Weekly Contact Hours 3
Course Description A modeling course that addresses the flow of water, carbon and nutrients from an Earth system perspective
Prerequisites BSC 3307C or COP 3272 or MAC 2233 or PHY 2048 or SWS 4180 or ABE 5643C or PCB 5358 or SWS 5182 or SWS 5224
Co-requisites N/A

Rationale and Placement in Curriculum Large scale models are critical tools to address global environmental challenges from climate change, water resources and eutrophication. This course provides insights into these modeling tools for students who want to pursue environmental modeling in the future and for students who are interested in aligning their research to further develop and improve these earth system models. This course will be complementary to other courses in the SWSD curriculum, filling an emerging need for a more global focus within our discipline.

Course Objectives By the end of this course, students will be able to
• Describe processes represented in a dynamic global land model
• Apply and evaluate global land models for global change and biogeochemistry research
• Describe linkages between land carbon cycles, water cycles, and climate
• Assess restrictions and limitations of mechanistic land surface model

Course Textbook(s) and/or Other Assigned Reading Course text:
Reading assignments will be available on the course website https://elearning.ufl.edu/ in form of scientific papers (see also references below the course schedule). Optional, further reading include the following titles
• Climate Change 2013 - The Physical Science Basis Contribution of Working Group I to the Fifth Assessment Report of the IPCC (available online www.ipcc.ch)
• Jacobson M.C. et al., 2000, Earth System Science from Biogeochemical Cycles to Global Change
Weekly Schedule of Topics

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

Week Topic Technical Work Assignments Reading
1-2 Introduction / scope of land surface model Programming in Linux Environment
   Programming Structures - Program “Hello World”
   - Concept Map “global change on the land surface” Beedlow et al., 2004
   Friedlingstein, 2014
3 Flow of carbon in the land surface Development cycle (coding, compiling, and testing)
   - Track carbon in a complex land surface model
   - Evaluate your carbon cycle model Sitch et al., 2003
   Lentz et al., 2000
4-5 Photosynthesis theory and models Learning to apply a complex land surface model and working with its output - Derive mathematical formulation of C4 photosynthesis
   - Modify photosynthesis code using alternate mathematical formulation Farquhar et al., 1980
   Haxeltine and Prentice, 1996
6 Canopy carbon, water, and energy balance Parameter sensitivity testing
   - Group Work: modify parameter in Earth System Model to find maximum rate of plant photosynthesis
   Leuning 1995
7-8 Water balance Analyzing, and displaying 3D data - Flipped Class: teach the concepts of water flow in a land surface model
   - Group Work: minimize modeled runoff globally Gerten et al., 2004
   Lloyd and Taylor, 1994
9-10 Soil organic matter Data - model comparison - Discuss residence times of carbon in terrestrial systems
   - Group work: minimize data-model mismatch in soil organic carbon Parton et al., 2007
   Lloyd and Taylor, 1994
11-12 Plant Traits and Functional Types / Fire - Group Work: engineer a hyper successful plant Fisher et al, 2018
   Thonicke et al, 2001
Links and Policies

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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.

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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

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

Counseling Services

• Outreach and Consultation
• Self-Help Library
• Wellness Coaching

• U Matter We Care, www.umatter.ufl.edu/
Student Complaints:
- Residential Course: https://sccr.dso.ufl.edu/
- Online Course: http://www.distance.ufl.edu/student-complaint-process

**Grading Scheme**

<table>
<thead>
<tr>
<th>Letter Grade</th>
<th>Sum of % Points (p)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>95</td>
</tr>
<tr>
<td>A-</td>
<td>90 p &lt; 95</td>
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<tr>
<td>B+</td>
<td>85 p &lt; 90</td>
</tr>
<tr>
<td>B</td>
<td>80 p &lt; 85</td>
</tr>
<tr>
<td>B-</td>
<td>75 p &lt; 80</td>
</tr>
<tr>
<td>C+</td>
<td>70 p &lt; 75</td>
</tr>
<tr>
<td>C</td>
<td>65 p &lt; 70</td>
</tr>
<tr>
<td>C-</td>
<td>60 p &lt; 65</td>
</tr>
<tr>
<td>D+</td>
<td>55 p &lt; 60</td>
</tr>
<tr>
<td>D</td>
<td>50 p &lt; 55</td>
</tr>
<tr>
<td>D-</td>
<td>45 p &lt; 50</td>
</tr>
<tr>
<td>E</td>
<td>&lt; 45</td>
</tr>
</tbody>
</table>

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

**Instructor(s)** Stefan Gerber
3179 McCarty Hall
Phone: 352-294-3174
sgerber@ufl.edu
External Consultation Results (departments with potential overlap or interest in proposed course, if any)

<table>
<thead>
<tr>
<th>Department</th>
<th>Name and Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Engineering Sciences</td>
<td>Chang-Yu Wu, Professor &amp; Dept Head</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Phone Number</th>
<th>E-mail</th>
</tr>
</thead>
<tbody>
<tr>
<td>352-392-0845</td>
<td><a href="mailto:cywu@ufl.edu">cywu@ufl.edu</a></td>
</tr>
</tbody>
</table>

Comments

Environmental Engineering Sciences Department supports this new course. We do not see overlap with our existing courses.
**SWS 6XXX - Modeling Land Biogeochemistry**

**Catalogue Description**  A modeling course that addresses the flow of water, carbon and nutrients from an Earth system perspective

**Term**  Spring 2019

**Meeting Time**
- Tuesday Period 4-5 (10:40am – 12:35pm); MCCB 3086 (Computer Lab)
- Thursday Period 4 (10:40am – 11:30 pm); MCCB 3086 (Computer Lab)

**Credits**  3

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

**Office hours**  Thursday 12:30pm to 2:30 pm or by appointment

**Course Prerequisite:** A course that addresses ecosystem ecology, quantitative ecology/biogeochemistry and/or theory of carbon water and nutrient flow in a terrestrial system is required at 3000 level or higher (e.g. SWS 4180, SWS 5182, SWS 5224, PCB 5358, BSC 3307C, ABE 5643C, etc.) A minimal proficiency of calculus (e.g. MAC 2233: Survey of Calculus 1; PHY 2048 Physics with Calculus 1, or similar), as well as some programming experience in a basic computer language such as C or FORTRAN (e.g. COP3272: Programming using C) is advantageous but not a requirement.

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

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

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

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

**Course text:**
Reading assignments will be available on the course website https://elearning.ufl.edu/ in form of scientific papers (see also references below the course schedule). Optional, further reading include the following titles
- Climate Change 2013 - The Physical Science Basis Contribution of Working Group I to the Fifth Assessment Report of the IPCC (available online www.ipcc.ch)
- Jacobson M.C. et al., 2000, Earth System Science from Biogeochemical Cycles to Global Change

**Course Parts and Schedule**
Note that the schedule is approximate, and pace may vary.

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Technical Work</th>
<th>Assignments</th>
<th>Reading</th>
</tr>
</thead>
</table>
| 1-2  | Introduction / scope of land surface model | Programming in Linux Environment Programming Structures | - Program “Hello World”  
- Concept Map “global change on the land surface” | Beedlow et al., 2004 Friedlingstein, 2014 |
| 3    | Flow of carbon in the land surface | Development cycle (coding, compiling, and testing) | - Track carbon in a complex land surface model  
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| 4-5  | Photosynthesis theory and models | Learning to apply a complex land surface model and working with its output | - Derive mathematical formulation of C4 photosynthesis  
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| 6    | Canopy carbon, water, and energy balance | Parameter sensitivity testing | - Group Work: modify parameter in Earth System Model to find maximum rate of plant photosynthesis | Leuning 1995 |
| 7-8  | Water balance | Analyzing, and displaying 3D data | - Flipped Class: teach the concepts of water flow in a land surface model | Gerten et al., 2004 |
Group Work: minimize modeled runoff globally

9-10
Soil organic matter
Data – model comparison
Discuss residence times of carbon in terrestrial systems
Group work: minimize data-model mismatch in soil organic carbon
Parton et al., 2007
Lloyd and Taylor, 1994

11-12
Plant Traits and Functional Types / Fire
- Group Work: engineer a hyper successful plant
Fisher et al, 2018
Thonicke et al, 2001

13-14
Final Project
- Final oral presentation
- Final paper

**Full reference of reading (papers)**

Grading System

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

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

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  Self-Help Library
  Wellness Coaching

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

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

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