

**CALS Curriculum Committee Meeting**  
**January 19, 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, 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, M. Sowcik, A. Watson, J. Weeks, A. Wysocki

**Agenda and Index for Materials**

**Approve Minutes from the December 15th, 2023 meeting**

**Dr. Mathews: Update from UCC**

**Proposed Curriculum Change**

1. Proposed BSGEM: Geomatics – Geospatial Analysis Curriculum Change (req. #19361)
2. Proposed BSGEM: Geomatics – Surveying and Mapping Curriculum Change (req. #19423)

**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.

**Discussion Topic**

4. Campus Resources Tab in Canvas: Should a statement referring students to this tab replace the CALS boilerplate?

**CALS Curriculum Committee Meeting  
Minutes from December 15, 2023  
Submitted by James Fant**

**Members Present:** S. Ahn, J. Brendemuhl, D. Coenen, J. Czipulis, D. Gabriel, B. Kassas, T. Martin, H. McAuslane, J. Scheffler, B. Schutzman, M. Sowcik, A. Watson, J. Weeks

**Substitutes:** Steve Johnson for V. Hull, Kara Casy for R. Koenig

**Visitors:** Anne Mathews

**Call to Order:** The College of Agricultural and Life Sciences Curriculum Committee met in McCarty Hall D Rm. 1044/1045 on December 15, 2023. Dr. Coenen called the meeting to order at 1:02 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 by Dr. Martin to approve the minutes from the November 17, 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 for the December meeting of the CALS Curriculum Committee include items from the December 12, 2023, meeting of the UCC.

**Items APPROVED:**

- 1) Addition of the Agricultural Education and Communication major (specialization Communication and Leadership Development) to the UF Online offerings.
- 2) Addition of the Entomology and Nematology major (specializations Biological Science of Insects and Urban Pest Management) to the UF Online offerings.
- 3) Modifications to the Entomology minor.
- 4) Modifications to the Entomology major (all three specializations – Biological Science of Insects, Urban Pest Management and Preprofessional).

- 5) New Courses – WIS 2XXX-The Future of Tropical Rain Forests; ENY 4941-Practical Work Experience in Entomology and Nematology
- 6) Revised Courses – ENY 2890-Using Insect Research to Understand the Nature of Scientific Engagement; ENY 3005-Principles of Entomology; MCB 3023-Principles of Microbiology; AEB 3114L-Introduction to Agricultural Computer Applications; AOM 4455-Agricultural Operations and Systems; and AOM 4461-Sustainable Agricultural Systems

Additional updates included that work has begun regarding legislation to review General Education courses and the new regulations will be implemented for Fall 2024. A public speaking component must be incorporated into eleven courses at UF that meet a STATE CORE Gen Ed requirement. There will also be a requirement to self-audit all UF courses that currently have a gen ed designation.

Dr. Brendemuhl thanked everyone for their service and introduced Dr. Anne Mathews, his successor who will be taking over beginning in January 2024.

### **Undergraduate New Course Proposals**

1. EVS 1XXX – First Year Environmental Science (req. #19171)

**Please be sure to make all requested changes to both the UCC form and syllabus if necessary.** A motion was made by Dr. Martin to approve this item with changes required. The motion was approved. Dr. Schutzman provided the requested changes to Dr. Coenen via email.

2. EVS 3XXX – Environmental Science 2 (req. #19142)

**Please be sure to make all requested changes to both the UCC form and syllabus if necessary.** A motion was made by Dr. Martin to approve this item with changes required. The motion was approved. Consider removing “Exploration of” from the course description. Dr. Schutzman provided the requested changes to Dr. Coenen via email.

### **Undergraduate Course Revision Proposal**

3. AEB 3935 – Food and Resource Economics Seminar (req. #18384)

A motion was made by Dr. Weeks to approve this item with edits required. The motion was approved. Remove the portion in the rationale that refers to student input as a reason for the requested change. Focus on the additional content leading to the credit change request.

### **Certificate Modification**

4. Proposed Revision to the Ecological Restoration Graduate Certificate (req. #19137)

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

### **Proposed Curriculum Changes**

5. Proposed Revision to the Food and Resource Economics: Food and Agribusiness Marketing and Management Specialization (req. #19020)

A motion was made by Dr. Weeks to approve this item with an edit required. The motion was approved. Below the Academic Learning Compact in the section titled Before Graduating Students Must the specialization name is incorrect after complete AEB4325.

6. Proposed Revision to the Food and Resource Economics: International Food and Resource Economics Specialization (req. #19021)

A motion was made by Dr. Johnson to approve this item with the correction of a typing error required. The motion was approved. On the UCC form under proposed changes item #1 there should be no space between the prefix and course number for AEC3030C. This is just to be uniform with the rest of the courses listed on the page. Item #2 should state “moving from 1 credit hour to 2 credit hours.” In the Pedagogical Rationale/Justification “updating” should be changed to updated.

The meeting was adjourned at **2:00** p.m.

# Cover Sheet: Request 19361

1

## BSGEM: Geomatics\_Geospatial Analysis curriculum change

### Info

Process	Major Curriculum Modify Ugrad/Pro
Status	Pending at CALS - College of Agricultural and Life Sciences
Submitter	Jennifer Vogel alpha32605@ufl.edu
Created	12/6/2023 1:13:14 PM
Updated	1/5/2024 1:14:47 PM
Description of request	Request to expand course substitutions for Physics and Professional / Technical Writing requirements to include courses commonly taken by engineering students who change their major to Geomatics.

### Actions

Step	Status	Group	User	Comment	Updated
Department	Approved	SFRC - Geomatics 60466000	Terrell Baker III		12/6/2023
No document changes					
College	Pending	CALS - College of Agricultural and Life Sciences			12/6/2023
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					
Academic Assessment Committee Notified					
No document changes					
College Notified					
No document changes					

# Major|Modify\_Curriculum for request 19361

## Info

**Request:** BSGEM: Geomatics\_Geospatial Analysis curriculum change

**Description of request:** Request to expand course substitutions for Physics and Professional / Technical Writing requirements to include courses commonly taken by engineering students who change their major to Geomatics.

**Submitter:** Jennifer Vogel alpha32605@ufl.edu

**Created:** 1/5/2024 1:42:49 PM

**Form version:** 4

## Responses

**Major Name** Geomatics

**Major Code** GEM

**Degree Program Name** BSGEM

**Undergraduate Innovation Academy Program No**

**Effective Term** Earliest Available

**Effective Year** Earliest Available

**Current Curriculum for Major** There are two specializations within the major; Surveying and Mapping; Geospatial Analysis. The proposed changes are to both specializations. This request is for the Geospatial Analysis specialization. See Request # 19423 for the Surveying and Mapping specialization change.

**Proposed Curriculum Changes** 1. Add PHY2048 and PHY2048L as a substitution for PHY2053 and PHY2053L (currently PHY 2004 and PHY 2004L)

2. Add PHY2049 and PHY2049L as a substitution for PHY2054 and PHY2054L (currently PHY 2005 and PHY 2005L)

3. Add ENC3246 as one of the Technical Writing Electives (currently AEC3033/ENC2210/ENC3254)

**UF Online Curriculum Change No**

**Pedagogical Rationale/Justification** These changes are requested to better serve engineering students who change their major to Geomatics by recognizing coursework that is equivalent to existing course substitutions.

The two Physics 1 with Calc courses and labs (PHY2048L/2049L) are equivalent to the current Physics courses with an additional Calculus component. The two courses are required by the engineering programs and have been historically accepted when engineering students change their major to Geomatics.

The ENC3246 course is Professional Communication for Engineers, which covers the technical writing requirement for the Geomatics program, similar to the existing options in the catalog. Again, engineering students transferring to the Geomatics program often had this course, and we traditionally have been accepting it as a substitute.

**Impact on Enrollment, Retention, Graduation** None expected. Formalizing a traditionally accepted substitution.

**Assessment Data Review** Not applicable

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

**Catalog Copy** Yes

# Geomatics

The Geomatics profession collects, manages, and analyzes geospatial data through ground surveying, photogrammetry, remote sensing, satellite positioning, inertial measurements, echosounding, and laser scanning. Geomatics students study geometry, statistics, boundary law, and surveying and mapping instrument usage.

## About this Program

- **College:** [Agricultural and Life Sciences](#)
- **Degree:** Bachelor of Science in Geomatics
- **Credits for Degree:** 120
- **Specializations:**

[Geospatial Analysis](#) | [Surveying and Mapping](#)

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

- [Overview](#)
- [Academic Learning Compact](#)

Geomatics students learn how land, infrastructure, and natural resources are measured, analyzed, and integrated into useable forms and systems. Students gain hands-on experience working with field equipment and in high-tech classrooms. Present land values, rates of urban development, and environmental concerns require a broad set of expertise to develop, manage, and apply geospatial information. Students majoring in Geomatics complete either the Surveying and Mapping specialization or the Geospatial Analysis specialization.

Both specializations within the Geomatics major are offered at the Fort Lauderdale Research and Education Center in Ft. Lauderdale, FL, and the Gulf Coast Research and Education Center in Plant City, FL (near Tampa).

## Geospatial Analysis

[Critical Tracking](#) | [Model Semester Plan](#)

The Geospatial Analysis specialization offers a broader set of courses in GIS and 3-D modeling.

## Critical Tracking

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

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

### **Semester 1**

- Complete at least 1 of 7 critical-tracking courses (excluding labs): [AEB 2014](#) or [ECO 2023](#) or [ECO 2013](#), [AEC 3030C](#) or [SPC 2608](#), [COP 2800](#) or advisor-approved course in computer programming, [MAC 2311](#), [PHY 2053/PHY 2053L](#), [PHY 2054/PHY 2054L](#) and [STA 2023](#)
- 2.5 GPA required for all critical-tracking courses
- 2.0 UF GPA required

### **Semester 2**

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

### **Semester 3**

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

### **Semester 4**

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

### **Semester 5**

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

### **Semester 6**

- Complete two of the remaining required major courses from [SUR 3103C](#), [SUR 3323](#), [SUR 3641](#), [GIS 3072C](#), [AEB 3133](#) or [MAN 3025](#), [AEB 4123](#) or [BUL 4310](#), [SUR 3331C](#), [SUR 4501C](#), [SUR 3520](#), [SUR 4949](#), [FNR 3131C](#) or [FOR 4934](#), [SUR 4530](#), [SUR 4911](#), [SUR 4380](#), [SUR 4912](#), and [SUR 4934](#) or [SWS 4244](#) or [AOM 4643](#) or [FNR 4343C](#) or [FNR 4660](#) or [GEO 3280](#)
- 2.0 upper division GPA required
- 2.0 UF GPA required



## Semester 7

- Complete three additional remaining required major courses from [SUR 3103C](#), [SUR 3323](#), [SUR 3641](#), [GIS 3072C](#), [AEB 3133](#) or [MAN 3025](#), [AEB 4123](#) or [BUL 4310](#), [SUR 3331C](#), [SUR 4501C](#), [SUR 3520](#), [SUR 4949](#), [FNR 3131C](#) or [FOR 4934](#), [SUR 4530](#), [SUR 4911](#), [SUR 4380](#), [SUR 4912](#), and [SUR 4934](#) or [SWS 4244](#) or [AOM 4643](#) or [FNR 4343C](#) or [FNR 4660](#) or [GEO 3280](#)
- 2.0 upper division GPA required
- 2.0 UF GPA required

## Semester 8

- Complete all remaining required major courses from [SUR 3103C](#), [SUR 3323](#), [SUR 3641](#), [GIS 3072C](#), [AEB 3133](#) or [MAN 3025](#), [AEB 4123](#) or [BUL 4310](#), [SUR 3331C](#), [SUR 4501C](#), [SUR 3520](#), [SUR 4949](#), [FNR 3131C](#) or [FOR 4934](#), [SUR 4530](#), [SUR 4911](#), [SUR 4380](#), [SUR 4912](#), and [SUR 4934](#) or [SWS 4244](#) or [AOM 4643](#) or [FNR 4343C](#) or [FNR 4660](#) or [GEO 3280](#)
- 2.0 upper division GPA required
- 2.0 UF GPA required

[Back to Top](#)

## Model Semester Plan

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
Quest 1 (Gen Ed Humanities)		3
Select one:		3-4
<a href="#">AEB 2014</a>	Economic Issues, Food and You ( <b>Critical Tracking</b> ; Gen Ed Social and Behavioral Sciences)	
<a href="#">ECO 2013</a>	Principles of Macroeconomics ( <b>Critical Tracking</b> ; Gen Ed Social and Behavioral Sciences)	

<a href="#">ECO 2023</a>	Principles of Microeconomics ( <b>Critical Tracking</b> ; Gen Ed Social and Behavioral Sciences)	
<a href="#">State Core Gen Ed Composition</a>	; Writing Requirement	3
	Gen Ed Biological or Physical Sciences <sup>1</sup>	3-4
	Elective <sup>2</sup>	3-4
	Credits	15-18

### Semester Two

	Select one:	3
<a href="#">COP 2800</a>	Computer Programming Using JAVA ( <b>Critical Tracking</b> )	
<a href="#">COP 2271</a> & <a href="#">2271L</a>	Computer Programming for Engineers and Computer Programming for Engineers Laboratory ( <b>Critical Tracking</b> )	
<a href="#">COP 3275</a>	Computer Programming Using C ( <b>Critical Tracking</b> )	
	Approved computer programming course ( <b>Critical Tracking</b> )	
<a href="#">MAC 2311</a>	Analytic Geometry and Calculus 1 ( <b>Critical Tracking</b> ; State Core Gen Ed Mathematics) <sup>3</sup>	4
	<a href="#">State Core Gen Ed Humanities</a>	3
	<a href="#">State Core Gen Ed Social and Behavioral Sciences</a>	3
	Elective	2
	Credits	15

### Semester Three

<a href="#">PHY 2053</a> & <a href="#">2053L</a>	Physics 1 and Laboratory for Physics 1 ( <b>Critical Tracking</b> ; State Core Gen Ed Biological Sciences and Physical Sciences) <sup>3</sup>	5
<a href="#">STA 2023</a>	Introduction to Statistics 1 ( <b>Critical Tracking</b> ; Gen Ed Mathematics)	3
	Gen Ed Composition; Writing Requirement	3
	Elective <sup>4</sup>	3-4
	Credits	14-15

### Semester Four

	Quest 2 (Gen Ed Social and Behavioral Sciences and Diversity or International)	3
	Select one:	3
<a href="#">AEC 3030C</a>	Effective Oral Communication ( <b>Critical Tracking</b> )	
<a href="#">SPC 2608</a>	Introduction to Public Speaking ( <b>Critical Tracking</b> )	
<a href="#">PHY 2054</a> & <a href="#">2054L</a>	Physics 2 and Laboratory for Physics 2 ( <b>Critical Tracking</b> ; Gen Ed Physical Sciences) <sup>3</sup>	5
	Gen Ed Diversity or International	3
	Elective	2
	Credits	16

### Semester Five

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 (Writing Requirement)	
<a href="#">ENC 3254</a>	Professional Writing in the Discipline (Writing Requirement)	
<a href="#">ENC3246</a>	<b><u>Professional Communication for Engineers</u></b>	<b><u>3</u></b>
<a href="#">SUR 3103C</a>	Geomatics <sup>5</sup>	3
<a href="#">SUR 3323</a>	Visualization of Spatial Information <sup>5</sup>	3
<a href="#">GIS 3072C</a>	Geographic Information Systems <sup>5</sup>	3
<a href="#">SUR 3641</a>	Survey Computations <sup>5</sup>	3
	Credits	15
<b>Semester Six</b>		
<a href="#">AEB 3133</a> or <a href="#">MAN 3025</a>	Principles of Agribusiness Management ( <b>Critical Tracking</b> ) or Principles of Management	3-4
<a href="#">AEB 4123</a> or <a href="#">BUL 4310</a>	Agricultural and Natural Resource Law ( <b>Critical Tracking</b> ) or The Legal Environment of Business	3-4
<a href="#">SUR 3331C</a>	Photogrammetry ( <b>Critical Tracking</b> ) <sup>5</sup>	3
<a href="#">SUR 4501C</a>	Foundations of UAS Mapping ( <b>Critical Tracking</b> ) <sup>5</sup>	3
<a href="#">SUR 3520</a>	Measurement Science ( <b>Critical Tracking</b> ) <sup>5</sup>	3
	Credits	15-17
<b>Summer After Semester Six</b>		
<a href="#">SUR 4949</a>	Co-op Work Experience ( <b>Critical Tracking</b> ) <sup>6</sup>	2
	Credits	2
<b>Semester Seven</b>		
Select one:		2-3
<a href="#">FNR 3131C</a>	Dendrology/Forest Plants ( <b>Critical Tracking</b> )	
<a href="#">FOR 4934</a>	Topics in Natural Resources (Florida Forest Communities; <b>Critical Tracking</b> )	
<a href="#">SUR 4350C</a>	Advanced Photogrammetry ( <b>Critical Tracking</b> ) <sup>5</sup>	3
<a href="#">SUR 4530</a>	Geodesy and Geodetic Positioning ( <b>Critical Tracking</b> ) <sup>5</sup>	3
<a href="#">SUR 4911</a>	Supervised Research in Geomatics ( <b>Critical Tracking</b> )	1
Select 6 approved credits:		6
Analysis electives		
Geomatics electives		
Geospatial Application electives		
	Credits	15-16
<b>Semester Eight</b>		
<a href="#">GIS 4121</a>	Geospatial Analysis <sup>5</sup>	3

<a href="#">SUR 4380</a> Remote Sensing ( <b>Critical Tracking</b> ) <sup>5</sup>	3
<a href="#">SUR 4912</a> Senior Project ( <b>Critical Tracking</b> ) <sup>5</sup>	1
Select 3 approved credits:	3
Analysis electives	
Geomatics electives	
Geospatial application electives	
Natural resources elective; <b>Critical Tracking</b>	3
Credits	13
Total Credits	120

<sup>1</sup> [FOR 3004](#) or [SWS 3022](#) and [SWS 3022L](#) recommended.

<sup>2</sup> [GEO 2200](#) or [GLY 2010C](#) recommended.

<sup>3</sup> May be used as substitutes:

- [MAC 1114](#) and [MAC 2233](#) for [MAC 2311](#)
- [PHY 2004](#) and [PHY 2004L](#) or [PHY2048](#) and [PHY2048L](#) for [PHY 2053](#) and [PHY 2053L](#)
- [PHY 2005](#) and [PHY 2005L](#) or [PHY2049](#) and [PHY2049L](#) for [PHY 2054](#) and [PHY 2054L](#)

<sup>4</sup> [GEO 2200](#) or [GLY 2010C](#) recommended, if not already taken.

<sup>5</sup> Minimum grade of C required.

<sup>6</sup> Must take two sections of [SUR 4949](#) concurrently.

Placement tests or prerequisites may be required to access certain courses.

Non-specified General Education courses may be selected from any approved course in the subject area. Selection of courses must consider satisfaction of the Writing Requirement and International and Diversity requirements.

[Back to Top](#)

# Cover Sheet: Request 19423

# 2

## BSGEM: Geomatics\_Surveying and Mapping curriculum change

### Info

Process	Major Curriculum Modify Ugrad/Pro
Status	Pending at CALS - College of Agricultural and Life Sciences
Submitter	Jennifer Vogel alpha32605@ufl.edu
Created	1/5/2024 1:41:53 PM
Updated	1/6/2024 12:59:39 AM
Description of request	Request to expand course substitutions for Physics and Professional / Technical Writing requirements to include courses commonly taken by engineering students who change their major to Geomatics.

### Actions

Step	Status	Group	User	Comment	Updated
Department	Approved	SFRC - Geomatics 60466000	Terrell Baker III		1/6/2024
curriculum_GEM catalog_Surveying and Mapping.docx					1/5/2024
College	Pending	CALS - College of Agricultural and Life Sciences			1/6/2024
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					
Academic Assessment Committee Notified					
No document changes					
College Notified					
No document changes					

## Major|Modify\_Curriculum for request 19423

### Info

**Request:** BSGEM: Geomatics\_Surveying and Mapping curriculum change

**Description of request:** Request to expand course substitutions for Physics and Professional / Technical Writing requirements to include courses commonly taken by engineering students who change their major to Geomatics.

**Submitter:** Jennifer Vogel alpha32605@ufl.edu

**Created:** 1/5/2024 1:38:03 PM

**Form version:** 1

### Responses

**Major Name** Geomatics

**Major Code** GEM

**Degree Program Name** BSGEM

**Undergraduate Innovation Academy Program** No

**Effective Term** Earliest Available

**Effective Year** Earliest Available

**Current Curriculum for Major** There are two specializations within the major; Surveying and Mapping; Geospatial Analysis. The proposed changes are to the major and affect both specializations. This request is for the Surveying and Mapping specialization. See Request # 19361 for the Geospatial Analysis specialization change.

**Proposed Curriculum Changes** 1. Add PHY2048 and PHY2048L as a substitution for PHY2053 and PHY2053L (currently PHY 2004 and PHY 2004L)

2. Add PHY2049 and PHY2049L as a substitution for PHY2054 and PHY2054L (currently PHY 2005 and PHY 2005L)

3. Add ENC3246 as one of the Technical Writing Electives (currently AEC3033/ENC2210/ENC3254)

**UF Online Curriculum Change** No

**Pedagogical Rationale/Justification** These changes are requested to better serve engineering students who change their major to Geomatics by recognizing coursework that is equivalent to existing course substitutions.

The two Physics 1 with Calc courses and labs (PHY2048L/2049L) are equivalent to the current Physics courses with an additional Calculus component. The two courses are required by the engineering programs and have been historically accepted when engineering students change their major to Geomatics.

The ENC3246 course is Professional Communication for Engineers, which covers the technical writing requirement for the Geomatics program, similar to the existing options in the catalog. Again, engineering students transferring to the Geomatics program often had this course, and we traditionally have been accepting it as a substitute.

**Impact on Enrollment, Retention, Graduation** None expected. Formalizing a traditionally accepted substitution.

**Assessment Data Review** Not applicable

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

**Catalog Copy** Yes

# Geomatics

The Geomatics profession collects, manages, and analyzes geospatial data through ground surveying, photogrammetry, remote sensing, satellite positioning, inertial measurements, echosounding, and laser scanning. Geomatics students study geometry, statistics, boundary law, and surveying and mapping instrument usage.

## About this Program

- **College:** [Agricultural and Life Sciences](#)
- **Degree:** Bachelor of Science in Geomatics
- **Credits for Degree:** 120
- **Specializations:**

[Geospatial Analysis](#) | [Surveying and Mapping](#)

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

- [Overview](#)
- [Academic Learning Compact](#)

Geomatics students learn how land, infrastructure, and natural resources are measured, analyzed, and integrated into useable forms and systems. Students gain hands-on experience working with field equipment and in high-tech classrooms. Present land values, rates of urban development, and environmental concerns require a broad set of expertise to develop, manage, and apply geospatial information. Students majoring in Geomatics complete either the Surveying and Mapping specialization or the Geospatial Analysis specialization.

Both specializations within the Geomatics major are offered at the Fort Lauderdale Research and Education Center in Ft. Lauderdale, FL, and the Gulf Coast Research and Education Center in Plant City, FL (near Tampa).

## Surveying and Mapping

[Critical Tracking](#) | [Model Semester Plan](#) | Approved Electives

The Surveying and Mapping specialization prepares students for entry into the Surveying and Mapping profession.

## Critical Tracking

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

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

### **Semester 1**

- Complete at least 1 of 7 critical-tracking courses (excluding labs): [AEB 2014](#) or [ECO 2023](#) or [ECO 2013](#), [AEC 3030C](#) or [SPC 2608](#), [COP 2800](#) or advisor-approved course in computer programming, [MAC 2311](#), [PHY 2053/PHY 2053L](#), [PHY 2054/PHY 2054L](#) and [STA 2023](#)
- 2.5 GPA required for all critical-tracking courses
- 2.0 UF GPA required

### **Semester 2**

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

### **Semester 3**

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

### **Semester 4**

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

### **Semester 5**

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

### **Semester 6**

- Complete two of the remaining required major courses from [SUR 3103C](#), [SUR 3323](#), [SUR 3641](#), [GIS 3072C](#), [AEB 3133](#) or [MAN 3025](#), [AEB 4123](#) or [BUL 4310](#), [SUR 3331C](#), [SUR 4501C](#), [SUR 3520](#), [SUR 4949](#), [FNR 3131C](#) or [FOR 4934](#), [SUR 4530](#), [SUR 4911](#), [SUR 4380](#), [SUR 4912](#), and [SUR 4934](#) or [SWS 4244](#) or [AOM 4643](#) or [FNR 4343C](#) or [FNR 4660](#) or [GEO 3280](#)
- 2.0 upper division GPA required
- 2.0 UF GPA required



## Semester 7

- Complete three additional remaining required major courses from [SUR 3103C](#), [SUR 3323](#), [SUR 3641](#), [GIS 3072C](#), [AEB 3133](#) or [MAN 3025](#), [AEB 4123](#) or [BUL 4310](#), [SUR 3331C](#), [SUR 4501C](#), [SUR 3520](#), [SUR 4949](#), [FNR 3131C](#) or [FOR 4934](#), [SUR 4530](#), [SUR 4911](#), [SUR 4380](#), [SUR 4912](#), and [SUR 4934](#) or [SWS 4244](#) or [AOM 4643](#) or [FNR 4343C](#) or [FNR 4660](#) or [GEO 3280](#)
- 2.0 upper division GPA required
- 2.0 UF GPA required

## Semester 8

- Complete all remaining required major courses from [SUR 3103C](#), [SUR 3323](#), [SUR 3641](#), [GIS 3072C](#), [AEB 3133](#) or [MAN 3025](#), [AEB 4123](#) or [BUL 4310](#), [SUR 3331C](#), [SUR 4501C](#), [SUR 3520](#), [SUR 4949](#), [FNR 3131C](#) or [FOR 4934](#), [SUR 4530](#), [SUR 4911](#), [SUR 4380](#), [SUR 4912](#), and [SUR 4934](#) or [SWS 4244](#) or [AOM 4643](#) or [FNR 4343C](#) or [FNR 4660](#) or [GEO 3280](#)
- 2.0 upper division GPA required
- 2.0 UF GPA required

[Back to Top](#)

## Model Semester Plan

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
Quest 1 (Gen Ed Humanities)		3
Select one:		3-4
<a href="#">AEB 2014</a>	Economic Issues, Food and You ( <b>Critical Tracking</b> ; Gen Ed Social and Behavioral Sciences)	
<a href="#">ECO 2013</a>	Principles of Macroeconomics ( <b>Critical Tracking</b> ; Gen Ed Social and Behavioral Sciences)	
<a href="#">ECO 2023</a>	Principles of Microeconomics ( <b>Critical Tracking</b> ; Gen Ed Social and Behavioral Sciences)	
<a href="#">State Core Gen Ed Composition</a> ; Writing Requirement		3
Gen Ed Biological or Physical Sciences <sup>1</sup>		3-4
Elective <sup>2</sup>		3-4

	Credits	15-18
<b>Semester Two</b>		
Select one:		3
<a href="#">COP 2800</a>	Computer Programming Using JAVA ( <b>Critical Tracking</b> )	
<a href="#">COP 2271</a> & <a href="#">2271L</a>	Computer Programming for Engineers and Computer Programming for Engineers Laboratory ( <b>Critical Tracking</b> )	
<a href="#">COP 3275</a>	Computer Programming Using C ( <b>Critical Tracking</b> )	
	Approved computer programming course ( <b>Critical Tracking</b> )	
<a href="#">MAC 2311</a>	Analytic Geometry and Calculus 1 ( <b>Critical Tracking</b> ; State Core Gen Ed Mathematics) <sup>3</sup>	4
	<a href="#">State Core Gen Ed Humanities</a>	3
	<a href="#">State Core Gen Ed Social and Behavioral Sciences</a>	3
Elective		2
	Credits	15
<b>Semester Three</b>		
<a href="#">PHY 2053</a> & <a href="#">2053L</a>	Physics 1 and Laboratory for Physics 1 ( <b>Critical Tracking</b> ; State Core Gen Ed Biological Sciences and Physical Sciences) <sup>3</sup>	5
<a href="#">STA 2023</a>	Introduction to Statistics 1 ( <b>Critical Tracking</b> ; Gen Ed Mathematics)	3
	Gen Ed Composition; Writing Requirement	3
	Elective <sup>4</sup>	3-4
	Credits	14-15
<b>Semester Four</b>		
	Quest 2 (Gen Ed Social and Behavioral Sciences AND Diversity or International)	3
Select one:		3
<a href="#">AEC 3030C</a>	Effective Oral Communication ( <b>Critical Tracking</b> )	
<a href="#">SPC 2608</a>	Introduction to Public Speaking ( <b>Critical Tracking</b> )	
<a href="#">PHY 2054</a> & <a href="#">2054L</a>	Physics 2 and Laboratory for Physics 2 ( <b>Critical Tracking</b> ; Gen Ed Physical Sciences) <sup>3</sup>	5
	Gen Ed Diversity or International (requirement not fulfilled by the Quest 2 course)	3
Elective		2
	Credits	16
<b>Semester Five</b>		
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 (Writing Requirement)	
<a href="#">ENC 3254</a>	Professional Writing in the Discipline (Writing Requirement)	

<a href="#">ENC3246</a>	<b>Professional Communication for Engineers</b>	<b>3</b>
<a href="#">SUR 3103C</a>	Geomatics <sup>5</sup>	3
<a href="#">SUR 3323</a>	Visualization of Spatial Information <sup>5</sup>	3
<a href="#">GIS 3072C</a>	Geographic Information Systems <sup>5</sup>	3
<a href="#">SUR 3641</a>	Survey Computations <sup>5</sup>	3
	Credits	15
<b>Semester Six</b>		
<a href="#">AEB 3133</a> or <a href="#">MAN 3025</a>	Principles of Agribusiness Management ( <b>Critical Tracking</b> ) or Principles of Management	3-4
<a href="#">AEB 4123</a> or <a href="#">BUL 4310</a>	Agricultural and Natural Resource Law ( <b>Critical Tracking</b> ) or The Legal Environment of Business	3-4
<a href="#">SUR 3331C</a>	Photogrammetry ( <b>Critical Tracking</b> ) <sup>5</sup>	3
<a href="#">SUR 4501C</a>	Foundations of UAS Mapping ( <b>Critical Tracking</b> ) <sup>5</sup>	3
<a href="#">SUR 3520</a>	Measurement Science ( <b>Critical Tracking</b> ) <sup>5</sup>	3
	Credits	15-17
<b>Summer After Semester Six</b>		
<a href="#">SUR 4949</a>	Co-op Work Experience ( <b>Critical Tracking</b> ) <sup>6</sup>	2
	Credits	2
<b>Semester Seven</b>		
Select one:		2-3
<a href="#">FNR 3131C</a>	Dendrology/Forest Plants ( <b>Critical Tracking</b> )	
<a href="#">FOR 4934</a>	Topics in Natural Resources (Florida Forest Communities; <b>Critical Tracking</b> )	
<a href="#">SUR 4201</a>	Route Geometrics and Design <sup>5</sup>	3
<a href="#">SUR 4350C</a>	Advanced Photogrammetry ( <b>Critical Tracking</b> ) <sup>5</sup>	3
<a href="#">SUR 4403</a>	Cadastral Principles <sup>5</sup>	3
<a href="#">SUR 4530</a>	Geodesy and Geodetic Positioning ( <b>Critical Tracking</b> ) <sup>5</sup>	3
<a href="#">SUR 4911</a>	Supervised Research in Geomatics ( <b>Critical Tracking</b> )	1
	Credits	15-16
<b>Semester Eight</b>		
<a href="#">SUR 4380</a>	Remote Sensing ( <b>Critical Tracking</b> ) <sup>5</sup>	3
<a href="#">SUR 4430</a>	Surveying and Mapping Practice <sup>5</sup>	3
<a href="#">SUR 4463</a>	Subdivision Design <sup>5</sup>	3
<a href="#">SUR 4912</a>	Senior Project ( <b>Critical Tracking</b> ) <sup>5</sup>	1
Natural resources elective; <b>Critical Tracking</b>		3
	Credits	13
	Total Credits	120

<sup>1</sup> [FOR 3004](#) or [SWS 3022](#) and [SWS 3022L](#) recommended.

<sup>2</sup> [GEO 2200](#) or [GLY 2010C](#) recommended.

<sup>3</sup> May be used as substitutes:

- [MAC 1114](#) and [MAC 2233](#) for [MAC 2311](#)
- [PHY 2004](#) and [PHY 2004L](#) or [PHY2048](#) and [PHY2048L](#) for [PHY 2053](#) and [PHY 2053L](#)
- [PHY 2005](#) and [PHY 2005L](#) or [PHY2049](#) and [PHY2049L](#) for [PHY 2054](#) and [PHY 2054L](#)

<sup>4</sup> [GEO 2200](#) or [GLY 2010C](#) recommended, if not already taken.

<sup>5</sup> Minimum grade of C required.

<sup>6</sup> Must take two sections of [SUR 4949](#) concurrently.

Placement tests or prerequisites may be required to access certain courses.

Non-specified General Education courses may be selected from any approved course in the subject area. Selection of courses must consider satisfaction of the Writing Requirement and International and Diversity requirements.

[Back to Top](#)

## Approved Electives

### Natural Resources Electives

Select one:

3

[AOM 4643](#) Environmental Hydrology: Principles and Issues

[FNR 4343C](#) Forest Water Resources

[FNR 4660](#) Natural Resource Policy and Economics

[GEO 3280](#) Principles of Geographic Hydrology

[SUR 4934](#) Topics in Geomatics (Marine Geomatics) <sup>1</sup>

[SWS 4244](#) Wetlands

### Analysis Electives

Select at least one:

3-4

[FNR 3410C](#) Natural Resource Sampling

[GEO 3162C](#) Introduction to Quantitative Analysis for Geographers

[QMB 3250](#) Statistics for Business Decisions

[STA 3024](#) Introduction to Statistics 2

[STA 3032](#) Engineering Statistics

### **Geospatial Application Electives**

Select at least one:

1-4

[AOM 4434](#) Precision Agriculture

[EES 4050](#) Environmental Planning and Design

[FNR 4461](#) Spatial Models and Decision Analysis

[GIS 3001C](#) Geovisualization and Map Design

[GIS 3420C](#) GIS Models for Public Health

[GIS 4037](#) Digital Image Processing

[GIS 4113](#) Introduction to Spatial Networks

[SUR 4940C](#) Practicum in UAS Mapping <sup>1</sup> 3

[SUR 4376](#) Geospatial Applications of UASs <sup>1</sup> 3

### **Geomatics Electives**

Select at most one:

3

[SUR 4201](#) Route Geometrics and Design <sup>1</sup>

[SUR 4403](#) Cadastral Principles <sup>1</sup>

[SUR 4430](#) Surveying and Mapping Practice <sup>1</sup>

[SUR 4463](#) Subdivision Design <sup>1</sup>

[SUR 4934](#) Topics in Geomatics <sup>1</sup>

<sup>1</sup> Minimum grade of C required

[Back to Top](#)

### **Related Geomatics Programs**

- [Geomatics certificate](#)
- [Mapping with Small Unmanned Aerial Systems certificate](#)

[Back to Top](#)

# Cover Sheet: Request 18552

# 3

## Change prerequisite for AOM 3734

### Info

Process	Course Modify Ugrad
Status	Pending at CALS - College of Agricultural and Life Sciences
Submitter	Jonathan Watson jaw7385@ufl.edu
Created	5/11/2023 8:04:33 AM
Updated	1/12/2024 12:11:26 PM
Description of request	Modify the Math prerequisites for enrolling in AOM 3734 - Irrigation Principles and Practices in Florida to reduce administrative burden on students, staff, and faculty.

### Actions

Step	Status	Group	User	Comment	Updated
Department	Approved	CALS - Agricultural and Biological Engineering 60070000	Kati Migliaccio		5/11/2023
No document changes					
College	Pending	CALS - College of Agricultural and Life Sciences			5/11/2023
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 18552

### Info

**Request:** Change prerequisite for AOM 3734

**Description of request:** Modify the Math prerequisites for enrolling in AOM 3734 - Irrigation Principles and Practices in Florida to reduce administrative burden on students, staff, and faculty.

**Submitter:** Jonathan Watson jaw7385@ufl.edu

**Created:** 5/11/2023 7:51:52 AM

**Form version:** 1

### Responses

**Current Prefix** AOM

**Course Level** 3

**Number** 734

**Lab Code** None

**Course Title** Irrigation Principles and Practices in Florida

**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?** 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?** No

**Change Course Objectives** No

**Change Prerequisites?** Yes

**Current Prerequisites** MAC 1147

**Proposed Prerequisites** MAC 1147 or MAC 1114 & MAC 1140 or MAC 2233

**Change Co-requisites?** No

**Rationale** This request seeks to modify the course AOM3734 by adding accepted Math courses as prereqs

(accepted as at least equivalent to or higher than MAC 1147) that many students, particularly transfer students and change of majors, have completed. Many students coming from 2-year institutions do not have MAC 1147 as an option so instead will take a set of equivalent or a higher level

MAC. We have always recognized these Math courses and are forced to frequently manually enroll them in the course; however, this creates additional work for students, advisors, and faculty. To minimize this administrative burden and to streamline the registration process for all parties, we request that the committees approve the request to modify these prereqs.



# 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.**

J.A.W. 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/>.

J.A.W. 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.

J.A.W. 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.

J.A.W. 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.

J.A.W. 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.

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

N/A 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.

N/A 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/>.

J.A.W. 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.

J.A.W. 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.

J.A.W. 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.

J.A.W. 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)

## AOM 3734

### Irrigation Principles and Practices in Florida

#### Summer 2023 Course Syllabus

**Catalog Description:** 3 credits. *Irrigation practice related to Florida agriculture. The course deals with irrigation system characteristics, management, maintenance, and economics. (Offered Summer).*

**Pre-requisites and Co-requisites:** MAC 1147: *Precalculus – Algebra and Trigonometry.*

#### Course Objectives:

Through lectures, laboratory experiences, field trips, and subject matter covered, the student is expected to gain rudimentary skill proficiencies and knowledge that will enable him/her to have basic understandings of the following:

- Introduction to the principles of plant-soil-water relation
- Comparison of various irrigation methods and their components
- Concepts of efficient water use in irrigation
- State of art irrigation systems and their use
- Principles of irrigation system management and maintenance
- Introduction to global issues in irrigation.

**Contribution of course to meeting the professional component:** This course contributes three (3) credit hours toward meeting the minimum 48 credit hours of basic-level curriculum for the Bachelor of Science Degree in Agricultural Operations Management.

**Relationship of course to program outcomes:** From the list of (1) through (4) program outcomes listed below, this course addresses outcomes (1) and (4). **Of these**, (1) will be assessed.

- **Program Outcomes:**
  1. an ability to select and apply a knowledge of mathematics, science, and technology to management challenges that require the application of principles and applied procedures or methodologies;
  2. an ability to function effectively as a member or leader on a technical team;
  3. an ability to apply written, oral, and graphical communication in both technical and non-technical environments; and an ability to identify and use appropriate technical literature;
  4. an ability to engage in, and to understanding of the need for professional development

**Instructor:** Richard V. Scholtz, III

1.

1.

1.

1. Office location: 107 Rogers Hall
2. Telephone: 352-294-6704
3. E-mail address: rscholtz@ufl.edu
4. Web site: <http://www.abe.ufl.edu/rscholtz>
5. Office hours: M-F 2:00 - 3:30 pm

**Teaching Assistant:** None.

**Lecture Meeting Times:** Monday thru Friday - Period 6 (3:30 PM - 4:45 PM)

**Meeting Location:** 110 Rogers Hall and on-line.

**Textbooks, Materials and Software Required:** *(no required text, notes will be provided on the course's web site and UF E-learning page)*

1.

1. Any scientific calculator.
2. Daily Calendar (e.g. Daytimer), PDA, phone or laptop computer w/ calendar application.
3. Access to Microsoft Office 2013 or compatible Office Suite (word processor, spreadsheet, presentation programs compatible with the \*.docx, \*.xlsx and \*.pptx formats)

**Source Materials:**

•

1. Butler, D. and J.W. Davies. 2004. Urban Drainage. Taylor & Francis, Inc. New York. 568 pages.
2. Fangmeier, D.D., W.J. Elliot, S.R. Workman, R.L. Huffman, and G.O. Schwab. 2006. Soil and Water Conservation Engineering, Fifth Edition. Thomson Delmar Learning. Clifton Park, NY. 552 pages.
3. James, L.G. 1988. Principles of Farm Irrigation System Design. John Wiley and Sons. New York. 480 pages.
4. Jensen, M.E., Editor. 1980. Design and Operation of Farm Irrigation Systems. ASAE Monograph No. 3. Amer. Soc. Agric. Engr. St. Joseph, MI. 829 pages
5. Hoffman, G.J., T.A. Howell and K.H. Soloman. 1990. Management of Farm Irrigation Systems. Amer. Soc. Agric. Engr. St. Joseph, MI. 1040 pages.
6. Keller, J. and R.D. Bliesner. 1990. Sprinkle and Trickle Irrigation. Van Nostrand Reinhold. New York. 652 pages.

7. Nakayama, F.S. and D.A. Bucks. 1986. Trickle Irrigation for Crop Production: Design, Operation and Management. Developments in Agric. Engr. 9. Elsevier Press. New York. 383 pages.
8. Pair, C.H., Editor-in-Chief. 1983. Irrigation. 5th Edition. The Irrigation Assoc. Silver Springs, MD. 686 pages.
9. S. Bureau of Reclamation. 2005. Drainage Manual: A Guide to Integrating Plant, Soil, and Water Relationships for Drainage of Irrigated Lands. University Press of the Pacific. Honolulu, HI. 308 pages.

## Outline:

### Lecture Topics:

- Historical Perspectives on Irrigation and its Importance
- The Hydrologic Cycle
- Florida Water Resources
- Plants
- Plant Physiology
- Evapotranspiration
- Soil Properties
- Measurement and Calibration of Soil Moisture
- Basic Hydraulics
- Water Measurement
- Water Wells
- Florida Irrigation Systems
- Sprinkler Irrigation Systems
- Surface Irrigation Systems
- Sub-surface Irrigation Systems
- Microirrigation
- Irrigation – Nozzles and Emitters
- Valves and Valve Closure
- Pumps
- Pump Curves and Pump Selection
- Pump Operation and Pump Curves
- Measures of Irrigation Application and Uniformity
- Measures of Irrigation Efficiency
- Irrigation – Purpose and Methodology
- Irrigation – Scheduling
- Chemical Injection Methods for Irrigation
- Chemical Injection Concentrations and Rates
- Salinity Control
- Frost Protection
- Water Quality Problems in Microirrigation
- Filtration

- Drainage
- Advanced Applications in Irrigation

**Course Schedule:** Please see *Course Summary* and/or your *Calendar* in Canvas.

**Attendance and Expectations:** Attendance is required – Lectures will cover material from various references, so it is imperative that students make every effort to attend classes and take good notes. Students are especially encouraged to ask questions during lectures.

The student is expected to manage their time efficiently, and should anticipate spending three times the length of lectures studying and preparing deliverables outside the classroom. The student should focus on the following: assignments, preparing both laboratory reports, review of notes and lecture materials, and any additionally assigned readings.

This class will predominately utilize USCS units, though there is some interaction with SI units. Mastery of both systems is strongly suggested.

**Announcement Policy:** Students will be held responsible for *all* announcements made in class, which includes *any and all* changes to this syllabus and the course lecture schedule. Students are expected to attend all lectures and laboratory periods scheduled.

**Grading Policy:** Official individual grades will only be available at the end of the semester.

**450 points – On-line Calculation Quizzes.**

*There will be two questions every week, for a total of twelve questions throughout the semester. Each will be worth between 30 and 45 points (results in 3 to 4.5% of final grade each) and prescribed its own individual due date, it is the student's responsibility to complete and submit each question by its deadline. One should think of each problem as a single submission quiz. These questions will consist of between three and six multiple part calculations; each question will focus on those concepts related to irrigation system management, in particular the key factors that influence production and performance.*

**450 points – On-line Nomenclature and Concept Quizzes**

*There will be six equally weighted on-line quizzes. These quizzes will consist of True/False, Matching, Fill in the blank and short answer questions; questions will test the students grasp of nomenclature, ability to identify equipment and components, and ability to identify concepts related to irrigation system management, in particular the key factors that influence production and performance. Students must complete these examinations by Friday before 11:00 PM EST, on the week they are assigned.*

**0 points – Homework Assignments.**

There will be several homework assignments that will guide students through the coursework and that will aid reinforcement. Answers are provided, but not the intermediate steps. Calculation quiz problems will come from combinations of the problems on these assignments.

**100 points – Class Attendance and Student (Virtual) Field Trip Report.**

Attendance will be taken periodically. Each student will prepare a three-page report on the field trips taken, and class attendance will be taken periodically. The three-page paper will be due electronically three business days by 11:00 PM EST after the last field trip taken. Papers are to have 1 inch margins, single spaced and are to be of a 12-point or smaller non-kerning font, all external reference should be cited appropriately.

**Grading Scale:**

A:	921-1000 Points
A-:	891-920 Points
B+:	861-890 Points
B:	821-860 Points
B-:	791-820 Points
C+:	761-790 Points
C:	721-760 Points
C-:	691-720 Points
D+:	661-690 Points
D:	621-660 Points
D-:	591-620 Points
E:	< 590 Points

**Make-up Grade Policy:** The arrangements for-make any assignments should be made before the date in question unless there is an emergency situation. In which, reviews will be on a case by case basis.

**Professionalism and Academic Honesty:** Students should also strive to think and act as professionals. Students should extend all guests both professional and common courtesy. The instructor reserves the right to assess penalty points toward the class, or toward individuals who have chosen to disregard these guidelines.

Students will be *strictly held* to the University of Florida's policy on Academic Honesty. Suspected violations will result in no points awarded (failure) for the deliverable, and the offending student will be referred to the Dean of Students Office and Office of Student Judicial Affairs. Dropping or replacing the lowest grade will not be an option under these

cases. Any and all disputes regarding the suspected infraction will be handled by the Student Judicial Affairs according to Regulations of the University of Florida.

The use of AI software should only be used to improve clarity of the student's final work product. Be advised that many AI packages will provide invalid, and in some cases fictitious results. Results that look authentic and even believable but should not be trusted.

In the process of enrolling and registering for classes at the University of Florida, every student has signed and presumably understands the following statement: "I understand that the University of Florida expects its students to be honest in all their academic work. I agree to adhere to this commitment to academic honesty and understand that failure to comply with this commitment may result in disciplinary action up to and including expulsion from the University." The following information will be placed on examinations. On my honor, I have neither given nor received unauthorized aid on this examination.

**Evaluation 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/> (Links to an external site.). 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/> (Links to an external site.). Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/> (Links to an external site.).

**Accommodation for Students with Disabilities:** Students requesting classroom accommodation must first register with the Dean of Students Office. That office will provide the student with documentation the level and type of accommodation of required to meet the student's disability.

**UF Counseling Services:** Resources are available on-campus for students having personal problems or lacking clear career and academic goals. The resources include:

- University Counseling Center, 301 Peabody Hall, 392-1575, Personal and Career Counseling.
- SHCC mental Health, Student Health Care Center, 392-1171, Personal and Counseling.
- Center for Sexual Assault/Abuse Recovery and Education (CARE), Student Health Care Center, 392-1161, sexual assault counseling.
- Career Resource Center, Reitz Union, 392-1601, career development assistance and counseling.

**Use of Library Materials:** These items are university property and should be utilized with other users in mind. Never remove, mark, modify nor deface resources that do not



belong to you. If you're in the habit of underlining text, do it only on your personal copy. It is inconsiderate, costly to others, and dishonest to use common references otherwise.

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

## AOM 3734

### Irrigation Principles and Practices in Florida

#### Summer 2024 Course Syllabus

#### 3 credits

**Catalog Description:** *Irrigation practice related to Florida agriculture. The course deals with irrigation system characteristics, management, maintenance, and economics.*

**Pre-requisites:** MAC 1147: *Precalculus – Algebra and Trigonometry*, or (MAC 1114: *Trigonometry & MAC 1140: Precalculus*), or MAC 2233: *Survey of Calculus I*

**Course Objectives:** By the end of the course students are expected to gain rudimentary skill proficiencies and knowledge that will enable them to:

- Employ principles of plant-soil-water relation to estimate crop water needs,
- Differentiate various irrigation methods and irrigation system components,
- Evaluate water use efficiency and irrigation distribution uniformity,
- Recognize state of art in irrigation systems and appropriate use,
- Use irrigation principles to manage and maintain irrigation systems, and
- Select appropriate irrigation systems and components based on global, economic, environmental, and societal constraints.

**Contribution of course to meeting the professional component:** This course contributes three (3) credit hours toward meeting the minimum 48 credit hours of basic-level curriculum for the Bachelor of Science Degree in Agricultural Operations Management.

**Relationship of course to program outcomes:** From the list of (1) through (4) program outcomes listed below, this course addresses outcomes (1) and (4). **Of these**, (1) will be assessed.

#### Program Outcomes:

1. an ability to select and apply a knowledge of mathematics, science, and technology to management challenges that require the application of principles and applied procedures or methodologies;
2. an ability to function effectively as a member or leader on a technical team;
3. an ability to apply written, oral, and graphical communication in both technical and non-technical environments; and an ability to identify and use appropriate technical literature;
4. an ability to engage in, and to understanding of the need for professional development

**Instructor:** Richard V. Scholtz, III

- Office location: 107 Rogers Hall
- Telephone: 352-294-6704
- E-mail address: [rscholtz@ufl.edu](mailto:rscholtz@ufl.edu)
- Web site:  
<http://www.abe.ufl.edu/rscholtz>
- Office hours: M-F 2:00 - 3:30 pm

**Teaching Assistant:** None.

**Lecture Meeting Times:** Monday thru Friday - Period 6 (3:30 PM - 4:45 PM)

**Meeting Location:** 110 Rogers Hall and on-line.

**Textbooks, Materials and Software**

**Required:** (no required text, notes will be provided on the course's web site and UF E-learning page)

1. Any scientific calculator.
2. Daily Calendar (e.g. Daytimer), PDA, phone or laptop computer w/ calendar application.
3. Access to Microsoft Office 365 or compatible Office Suite (word processor, spreadsheet, presentation programs compatible with the \*.docx, \*.xlsx and \*.pptx formats )

**Source Materials:**

1. Butler, D. and J.W. Davies. 2004. Urban Drainage. Taylor & Francis, Inc. New York. 568 pages.
2. Fangmeier, D.D., W.J. Elliot, S.R. Workman, R.L. Huffman, and G.O. Schwab. 2006. Soil and Water Conservation Engineering, Fifth Edition. Thomson Delmar Learning. Clifton Park, NY. 552 pages.

3. James, L.G. 1988. Principles of Farm Irrigation System Design. John Wiley and Sons. New York. 480 pages.
4. Jensen, M.E., Editor. 1980. Design and Operation of Farm Irrigation Systems. ASAE Monograph No. 3. Amer. Soc. Agric. Engr. St. Joseph, MI. 829 pages
5. Hoffman, G.J., T.A. Howell and K.H. Soloman. 1990. Management of Farm Irrigation Systems. Amer. Soc. Agric. Engr. St. Joseph, MI. 1040 pages.
6. Keller, J. and R.D. Bliesner. 1990. Sprinkle and Trickle Irrigation. Van Nostrand Reinhold. New York. 652 pages.
7. Nakayama, F.S. and D.A. Bucks. 1986. Trickle Irrigation for Crop Production: Design, Operation and Management. Developments in Agric. Engr. 9. Elsevier Press. New York. 383 pages.
8. Pair, C.H., Editor-in-Chief. 1983. Irrigation. 5th Edition. The Irrigation Assoc. Silver Springs, MD. 686 pages.
9. S. Bureau of Reclamation. 2005. Drainage Manual: A Guide to Integrating Plant, Soil, and Water Relationships for Drainage of Irrigated Lands. University Press of the Pacific. Honolulu, HI. 308 pages.

**Course Schedule:**

Week	Date	Lecture Topics	Assignment	Quizzes/Exams
1	5/13	Historical Perspectives on Irrigation and its Importance		
	5/14	Soil Properties &	Assignment 1	

		Measurement and Calibration of Soil Moisture		
	5/15	The Hydrologic Cycle		
	5/16	Evapotranspiration	Assignment 2	
	5/17	Florida Water Resources		On-line Quiz 1
<b>2</b>	5/20	Plants & Plant Physiology		
	5/21	Basic Hydraulics	Assignment 3	
	5/22	Water Measurement	Assignment 4*	
	5/23	Water Wells		Evening Exam 1
	5/24	Florida Irrigation Systems		On-line Quiz 2
<b>3</b>	5/27	NO CLASS		
	5/28	Sprinkler Irrigation Systems		
	5/29	Surface Irrigation Systems & Sub-surface Irrigation Systems		
	5/30	Microirrigation		
	5/31	Pumps & Pump Curves and Pump Selection	Assignment 5	On-line Quiz 3
<b>4</b>	6/3	Pump Operation		
	6/4	Irrigation – Nozzles and Emitters & Valves and Valve Closure	Assignment 6	
	6/5	<i>Meet in Water Resources Lab</i>		
	6/6	Measures of Irrigation Application and Uniformity	Assignment 7*	Evening Exam 2
	6/7	Measures of Irrigation Efficiency	Assignment 8	On-line Quiz 4
<b>5</b>	6/10	Field Trip 1		
	6/11	Irrigation – Purpose and Methodology & Irrigation – Scheduling		
	6/12	Chemical Injection Methods for Irrigation & Chemical Injection Concentrations and Rates	Assignment 9	
	6/13	Salinity Control	Assignment 10	
	6/14	Frost Protection	Assignment 11	On-line Quiz 5
<b>6</b>	6/17	Field Trip 2		
	6/18	Water Quality Problems in Microirrigation & Filtration		
	6/19	NO CLASS		
	6/20	Drainage		Evening Exam 3
	6/21	Advanced Applications in Irrigation		On-line Quiz 6

\* Material not covered on the immediate next Exam, but the following.

**Announcement Policy:** Students will be held responsible for *all* announcements made in class, which includes *any and all* changes to this syllabus and the course lecture schedule.

All will be posted in Canvas. Students are expected to attend all lectures and laboratory periods scheduled.

**Grading Policy:** Official individual grades will only be available at the end of the semester.

**450 points – Examinations.**

*There will be three examinations, one every other week during the evening composed of four to five calculation-based questions. Students may refer to any class related printed material on student notes during the exam. However no electronic devices are permitted, except for a calculator, preferable models should be capable of exponents and logarithms. Exams are not timed but are intended to be completed within one hour. Each question will be worth between 25 and 45 points (results in 2.5 to 4.5% of final grade each). Questions may consist of between two and six multiple steps; each question will focus on those concepts related to irrigation system management, in particular the key factors that influence production and performance.*

**420 points – On-line Nomenclature and Concept Quizzes**

*There will be six equally weighted on-line quizzes that cover that week's course notes. Quizzes are untimed and course notes can be used. These quizzes will consist of True/False, Matching, Fill in the blank and short answer questions; questions will test the student's grasp of nomenclature, ability to identify equipment and components, and ability to identify concepts related to irrigation system management, in particular the key factors that influence production and performance. Students must complete these examinations by Friday before 11:00 PM EST, on the week they are assigned. Students are encouraged to read ahead and take the quizzes as soon as they populate on Canvas.*

**0 points – Homework Assignments.**

*There will be several homework assignments that will guide students through the coursework and that will aid reinforcement. Answers are provided, but not the intermediate steps. Calculation exam problems will come from combinations of the problems on these assignments. Extra guidance on assignments is available as needed.*

**130 points – Class Attendance and Student Field Trip Reports.**

*Attendance will be taken randomly and periodically, for 50 points. Each student will prepare a two-page observational report on each field trip taken. The two-page papers will be due electronically three business days by 11:00 PM EST after the date of each field trip taken and will be worth 40 points each. Papers are to have 1-inch margins, single spaced and are to be of a 12-point or smaller non-kerning font, all external references used should be cited appropriately. A bibliography must be included for outside sources and does not toward the two-page write up. All tools may be used to improve word choice and help explanations, however observations must be true and those of each student.*

**Grading Scale:**

A:	921.00-1000 Points	C:	721.00-760.99 Points
A-:	891.00-920.99 Points	C-:	691.00-720.99 Points
B+:	861.00-890.99 Points	D+:	661.00-690.99 Points
B:	821.00-860.99 Points	D:	621.00-660.99 Points
B-:	791.00-820.99 Points	D-:	591.00-620.99 Points
C+:	761.00-790.99 Points	E:	≤ 590.99 Points

**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 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/>.

**Professionalism:** Students should also strive to think and act as professionals. Students should extend to all guests both professional and common courtesy. The instructor reserves the right to assess penalty points toward the class, or toward individuals who have chosen to disregard these guidelines.

**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>.

**Artificial Intelligence Use:** The use of AI software should only be used to improve clarity of the student's final work product. Be advised that many AI packages will provide invalid, and in some cases fictitious results. Results that look authentic and even believable but should not be trusted.

**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/>.

**Accommodation 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>

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

- 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 :

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

- Online Course: <https://pfs.tnt.aa.ufl.edu/state-authorization-status/#student-complaint>

**Software Use:** All faculty, staff and student 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.