Cover Sheet: Request 11700

curriculum update - Geomatics major

Info

Process	Major Curriculum|Modify|Ugrad/Pro
Status	Pending
Submitter	Sager,Scott A sasager@ufl.edu
Created	5/30/2017 1:18:47 PM
Updated	8/31/2017 1:57:36 PM
Description of request	Update and clarification of upper-division coursework within GEOSPATIAL ANALYSIS specialization.

Actions

Step	Status	Group	User	Comment	Updated
Department	Approved	CALS - Forest Resources and Conservation 514946000	Lindberg, William J		5/30/2017
No document changes					
College	Approved	CALS - College of Agricultural and Life Sciences	Brendemuhl, Joel H	Approved at the CALS CC meeting on 8/18/17.	8/31/2017
Replaced curriculum_GEM catalog.docx Replaced curriculum_GEM catalog.docx Added curriculum_GEM catalog.docx					5/30/2017 6/1/2017 6/1/2017
University Curriculum Committee	Pending	PV - University Curriculum Committee (UCC)			8/31/2017
No document changes					
Office of the Registrar					
No document changes					
Student Academic Support System					
No document changes					
Catalog					
No document changes					
Academic Assessment Committee Notified					
No document changes					
College Notified					
No document changes					

Major|Modify_Curriculum for request 11700

Info

Request: curriculum update - Geomatics major
Description of request: Update and clarification of upper-division coursework within GEOSPATIAL ANALYSIS specialization.
Submitter: Sager,Scott A sasager@ufl.edu
Created: 5/30/2017 1:18:48 PM
Form version: 1

Responses

Major Name Geomatics
Major CodeGEM
Degree Program Name BSGEM
Undergraduate Innovation Academy Program No
Effective Term Earliest Available
Effective Year Earliest Available
Current Curriculum for Major Two specializations within the major - changes are only to the GEOSPATIAL ANALYSIS specialization.
Proposed Curriculum Changes Two specializations within the major - changes are only to the GEOSPATIAL ANALYSIS specialization.

Minor clean-up of curriculum requirements in Semester 7.

Updating of course numbers in Electives. Clarification of elective requirements.
Pedagogical Rationale/Justification Changes are simply updating and clarification.
Impact on Enrollment, Retention, Graduation None expected.
Assessment Data Review Not applicable.
Academic Learning Compact and Academic Assessment Plan None.

Geomatics

Geomatics is a Science, Technology, Engineering, and Mathematics (STEM) major that addresses spatial data collection, management, and analysis. Spatial data is collected through many techniques such as ground surveying, photogrammetry, remote sensing, satellite positioning, inertial measurements, echo-sounding, and laser scanning. Spatial information collected may then be integrated into a geographic information system or other graphical form and analyzed to support a broad range of applications.

About this Major

- **College:** Agricultural and Life Sciences
- **Degree:** Bachelor of Science in Geomatics
- **Credits for Degree:** 120
- **Specializations:**
  - Geospatial Analysis; Surveying and Mapping
- **Academic Learning Compact**
- **Additional Information**

- **Related Geomatics Programs**

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

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., the Gulf Coast Research and Education Center in Plant City, FL and at the Mid-Florida Research and Education Center in Apopka, FL.

Geospatial Analysis

Critical TrackingModel 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 2053/2053L, PHY 2054/2054L 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

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Model Semester Plan

To remain on track, students must complete the appropriate critical-tracking courses, which appear in bold.

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 1	Credits
AEB 2014 Economics Issues, Food and You, *3 credits, or* **ECO 2013 Principles of Macroeconomics**, *4 credits, or* **ECO 2023 Principles of Microeconomics**, *4 credits* *GE-S*	**3-4**
IUF 1000 What is the Good Life *GE-H*	3
Biological or Physical Science *GE-B/P; FOR 3004 Forests, Conservation and People or SWS 3022 Introduction to Soils in the Environment and SWS 3022L Introduction to Soils in the Environment Laboratory recommended*	3-4
Composition *State Core GE-C; WR*	3
Elective *GEO 2200 Physical Geography or GLY 2010C Physical Geology recommended*	3-4
	Total 15-18

Semester 2	Credits
COP 2800 Computer Programming Using JAVA *or* **COP 2271 and COP 2271L Computer Programming for Engineers and Computer Programming for Engineers Laboratory** *or* **COP 3275 Computer Programming Using C** *or* **COP 3229 Computer Programming Using C++** *or* **Advisor-approved computer programming course**	**3**
MAC 2311 Analytic Geometry and Calculus 1 ♦ *State Core GE-M*	**4**
Humanities *State Core GE-H*	3
Social and Behavioral Sciences *State Core GE-S*	3
Elective	2
	Total 15

Semester 3	Credits
PHY 2053 Physics 1, *3 credits, and* **PHY 2053L Laboratory for Physics 1**, *1 credit* ♦ *State Core GE-B/P*	**5**
STA 2023 Introduction to Statistics 1 *GE-M*	**3**
Composition *GE-C; WR*	3

Elective *GEO 2200 Physical Geography or GLY 2010C Physical Geology recommended, if not already taken*	3-4
	Total 14-15

Semester 4	Credits
AEC 3030C Effective Oral Communication *or* **SPC 2608 Introduction to Public Speaking**	**3**
PHY 2054 Physics 2, *3 credits, and* **PHY 2054L Laboratory for Physics 2**, *1 credit* ♦ *GE-P*	**5**
Elective	2
Electives *(Gen Ed diversity, GE-D, and international, GE-N) and/or* Social and Behavioral Sciences *(GE-D, N, and/or S)*	6
Total 16	

♦ May be used as substitutes:
MAC 1114 and MAC 2233 for MAC 2311
PHY 2004 and PHY 2004L for PHY 2053 and PHY 2053L
PHY 2005 and PHY 2005L for PHY 2054 and PHY 2054L

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

Non-specified general education (GE) courses may be selected from any approved course in the subject area. Selection of courses must consider satisfaction of the writing requirement and international studies and diversity requirements

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Semester 5	Credits
AEC 3033C Research and Business Writing in Agricultural and Life Sciences *or* ENC 2210 Technical Writing *or* ENC 3254 Professional Communication *WR*	3
SUR 3103C Geomatics *Minimum grade of C required*	3
SUR 3323 Visualization of Spatial Information *Minimum grade of C required*	3
GIS 3072C Geographic Information Systems *Minimum grade of C required*	3
SUR 3641 Surveying Computations *Minimum grade of C required*	3
Total 15	

Semester 6	Credits

AEB 3133 Principles of Agribusiness Management, *3 credits, or* MAN 3025 Principles of Management, *4 credits*	3-4
AEB 4123 Agricultural and Natural Resource Law, *3 credits, or* BUL 4310 The Legal Environment of Business, *4 credits*	3-4
SUR 3331C Photogrammetry *Minimum grade of C required*	3
SUR 4501C ~~Spatial Measurement Systems and Spatial Measurement Systems Laboratory~~ Foundations of UAS Mapping *Minimum grade of C required*	3
SUR 3520 Measurement Science *Minimum grade of C required*	3
	Total 15-17

Summer	**Credits**
SUR 4949 Co-op Work Experience	2
	Total 2

Semester 7	**Credits**
FNR 3131C Dendrology/Forest Plants, *3 credits, or* FOR 4934 Topics in For. Res. and Conservation *(Florida Forest Communities), 2 credits*	2-3
SUR 4350C Advanced Photogrammetry *Minimum grade of C required*	3
SUR 4530 Geodesy and Geodetic Positioning *Minimum grade of C required*	3
SUR 4911 Supervised Research in Geomatics	1
Analysis elective *and/or* Geomatics elective *and/or* Geospatial Application elective	6
	Total 15-16

Semester 8	**Credits**
SUR 4380 Remote Sensing *Minimum grade of C required*	3
SUR 4912 Senior Project *Minimum grade of C required*	1
SUR4121 Geospatial Analysis *Minimum grade of C required*	3
Analysis elective *and/or* Geomatics elective *and/or* Geospatial Application and/elective	~~6~~3
Natural Resources elective	3
	Total 13

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Surveying and Mapping

Critical TrackingModel Semester Plan

The Surveying and Mapping specialization is accredited by ABET and 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 2053/2053L, PHY 2054/2054L 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

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Model Semester Plan

To remain on track, students must complete the appropriate critical-tracking courses, which appear in bold.

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Semester 1	Credits
AEB 2014 Economics Issues, Food and You, *3 credits, or* **ECO 2013 Principles of Macroeconomics**, *4 credits, or* **ECO 2023 Principles of Microeconomics**, *4 credits* *GE-S*	**3-4**
IUF 1000 What is the Good Life *GE-H*	3
Biological or Physical Science *GE-B/P; FOR 3004 Forests, Conservation and People or SWS 3022 Introduction to Soils in the Environment and SWS 3022L Introduction to Soils in the Environment Laboratory recommended*	3-4
Composition *State Core GE-C; WR*	3
Elective *GEO 2200 Physical Geography or GLY 2010C Physical Geology recommended*	3-4
	Total 15-18

Semester 2	Credits
COP 2800 Computer Programming Using JAVA *or* **COP 2271 and COP 2271L Computer Programming for Engineers and Computer Programming for Engineers Laboratory** *or* **COP 3275 Computer Programming Using C** *or* **COP 3229 Computer Programming Using C++** *or* **Advisor-approved computer programming course**	**3**
MAC 2311 Analytic Geometry and Calculus 1 ♦ *State Core GE-M*	**4**
Humanities *State Core GE-H*	3
Social and Behavioral Sciences *State Core GE-S*	3
Elective	2
	Total 15

Semester 3	Credits
PHY 2053 Physics 1, *3 credits, and* **PHY 2053L Laboratory for Physics 1**, *1 credit* ♦ *State Core GE-B/P*	**5**
STA 2023 Introduction to Statistics 1 *GE-M*	**3**
Composition *GE-C; WR*	3
Elective *GEO 2200 Physical Geography or GLY 2010C Physical Geology recommended, if not already taken*	3-4
	Total 14-15

Semester 4	Credits
AEC 3030C Effective Oral Communication *or* **SPC 2608 Introduction to Public Speaking**	**3**
PHY 2054 Physics 2, *3 credits, and* **PHY 2054L Laboratory for Physics 2**, *1 credit* ♦ *GE-P*	**5**
Elective	2
Electives *(Gen Ed diversity, GE-D, and international, GE-N) and/or* Social and Behavioral Sciences *(GE-D, N, and/or S)*	6
Total 16	

♦ May be used as substitutes:
MAC 1114 and MAC 2233 for MAC 2311
PHY 2004 and PHY 2004L for PHY 2053 and PHY 2053L
PHY 2005 and PHY 2005L for PHY 2054 and PHY 2054L

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AEC 3033C Research and Business Writing in Agricultural and Life Sciences *or* ENC 2210 Technical Writing *or* ENC 3254 Professional Communication *WR*	3
SUR 3103C Geomatics *Minimum grade of C required*	3
SUR 3323 Visualization of Spatial Information *Minimum grade of C required*	3

GIS 3072C Geographic Information Systems *Minimum grade of C required*	3
SUR 3641 Surveying Computations *Minimum grade of C required*	3
	Total 15

Semester 6	**Credits**
AEB 3133 Principles of Agribusiness Management, *3 credits, or* MAN 3025 Principles of Management, *4 credits*	3-4
AEB 4123 Agricultural and Natural Resource Law, *3 credits, or* BUL 4310 The Legal Environment of Business, *4 credits*	3-4
SUR 3331C Photogrammetry *Minimum grade of C required*	3
SUR 4501C ~~Spatial Measurement Systems and Spatial Measurement Systems Laboratory~~ Foundations of UAS Mapping *Minimum grade of C required*	3
SUR 3520 Measurement Science *Minimum grade of C required*	3
	Total 15-17

Summer	**Credits**
SUR 4949 Co-op Work Experience	2
Total	2

Semester 7	**Credits**
FNR 3131C Dendrology/Forest Plants, *3 credits, or* FOR 4934 Topics in For. Res. and Conservation *(Florida Forest Communities), 2 credits*	2-3
SUR 4201 Route Geometrics and Design *Minimum grade of C required*	3
SUR 4350C Advanced Photogrammetry *Minimum grade of C required*	3
SUR 4403 Cadastral Principles *Minimum grade of C required*	3
SUR 4530 Geodesy and Geodetic Positioning *Minimum grade of C required*	3
SUR 4911 Supervised Research in Geomatics	1
	Total 15-16

Semester 8	**Credits**
SUR 4380 Remote Sensing *Minimum grade of C required*	3
SUR 4430 Surveying and Mapping Practice *Minimum grade of C required*	3

SUR 4463 Subdivision Design *Minimum grade of C required*	3
SUR 4912 Senior Project *Minimum grade of C required*	1
Natural Resources elective	3
	Total 13

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Electives

Course	Credits
Natural Resources Electives *Choose one*	
AOM 4643 Environmental Hydrology: Principles and Issues	3
FNR 4343C Forest Water Resources	3
FNR 4660 Natural Resource Policy and Economics	3
GEO 3280 Principles of Geologic Hydrology	3
SUR 4934 Topics in Geomatics (Marine Geomatics) *Minimum grade of C required*	3
SWS 4244 Wetlands	3
Analysis Electives *Choose at least one*	
FNR 3410C Natural Resource Sampling	3
GEO 3162C Introduction to Quantitative Analysis for Geographers	4
QMB 3250 Statistics for Business Decisions	4
STA 3024 Introduction to Statistics 2	3
STA 3032 Engineering Statistics	3
Geospatial Application Electives *Choose at least one*	
AOM 4434 Precision Agriculture	3
EES 4050 Environmental Planning and Design	3
FNR4461 Spatial Models and Decision Analysis	1
GIS 3420C GIS Models for Public Health	3
GIS 4001C Maps and Graphs	4
GIS 4037 Digital Image Processing	4
GIS 4113 Introduction to Spatial Networks	3
~~SUR 4934 Topics in Geomatics (~~SUR4940C Practicum in UAS Mapping~~)~~ *Minimum grade of C required*	3
~~SUR 4934 Topics in Geomatics (~~SUR4376 Geospatial Application of UAS~~)~~ *Minimum grade of C required*	3

Geomatics Electives	
Choose ~~at least~~at most one	
SUR 4201 Route Geomatics and Design *Minimum grade of C required*	3
SUR 4403 Cadastral Principles *Minimum grade of C required*	3
SUR 4430 Surveying & Mapping Practice *Minimum grade of C required*	3
SUR 4463 Subdivision Design *Minimum grade of C required*	3
SUR 4934 Special Topics in Geomatics *Minimum grade of C required*	3

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Related Geomatics Programs

- Geomatics certificate
- Mapping with Small Unmanned Aerial Systems certificate

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