Cover Sheet: Request 13545

CE Curriculum Change - Addition of BIM Options to Existing Elective

Info

Process	Major Curriculum|Modify|Ugrad/Pro
Status	Pending at PV - University Curriculum Committee (UCC)
Submitter	Robert Thieke robert.thieke@essie.ufl.edu
Created	1/27/2019 12:01:37 PM
Updated	2/15/2019 7:46:20 AM
Description of request	Add two Building Information Modeling classes in Architecture (ARC 4310C, ARC 4511) to list of existing GIS/Surveying electives in Civil Engineering major.

Actions

Step	Status	Group	User	Comment	Updated
Department	Approved	ENG - Civil and Coastal Engineering 011904000	Robert Thieke	Approved by CCE Department	1/27/2019
Civil Engineering BS Curriculum Change 2019 - BIM Class Options in Architecture.docx Consult Email on BIM Courses - Dr. Nawari Architecture.pdf					1/27/2019 1/27/2019
College	Approved	ENG - College of Engineering	Heidi Dublin	Approved by HWCOE Curriculum Committee and at HWCOE Faculty Meeting	2/12/2019
No document changes					
Associate Provost for Undergraduate Affairs	Approved	PV - APUG Review	Casey Griffith		2/15/2019
No document changes					
University Curriculum Committee	Pending	PV - University Curriculum Committee (UCC)			2/15/2019
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 13545

Info

Request: CE Curriculum Change - Addition of BIM Options to Existing Elective
Description of request: Add two Building Information Modeling classes in Architecture (ARC 4310C, ARC 4511) to list of existing GIS/Surveying electives in Civil Engineering major.
Submitter: Robert Thieke robert.thieke@essie.ufl.edu
Created: 1/27/2019 11:44:45 AM
Form version: 1

Responses

Major Name Civil Engineering
Major Code CE
Degree Program Name BS Civil Engineering
Undergraduate Innovation Academy Program No
Effective Term Fall
Effective Year 2019
Current Curriculum for Major Current requirements include an elective class (3 credits) in spatial information technology which provides an option of four courses outside the civil engineering department in the areas of Surveying or GIS:
SUR 3103C Geomatics
URP 4273 Survey of Planning Information Systems
SWS 4720C GIS in Soil and Water Science
GIS 3072C Geographic Information Systems
Proposed Curriculum Changes We seek to add two additional course options to this elective list in the area of Building Information Modeling, (taught in Architecture):
ARC 4310C Building Information Modeling
ARC 4511 Structural Modeling

Pedagogical Rationale/Justification Students will be afforded greater flexibility in their choice of a technical elective; Building Information Modeling is a widely used tool in the areas of construction engineering and structural engineering, which are two of the most widely elected specialty areas in the Civil Engineering major.
Impact on Enrollment, Retention, Graduation No major impact on enrollment, retention or graduation is anticipated, Students may find it easier to proceed to graduation because of the greater availability of elective courses. The greatest impact is expected in student career readiness and satisfaction in the areas of construction and structural engineering.
Assessment Data Review Changes were largely motivated by feedback obtained from Senior Exit Surveys, Employer Surveys and our External Advisory Board
Academic Learning Compact and Academic Assessment Plan No changes

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

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

Plan of Study Grid

Semester One		**Credits**
CGN 2002	Introduction to Civil Engineering	1
Select one:		3
CHM 2045	General Chemistry 1 (**Critical Tracking**; Gen Ed Physical Sciences) [1]	
CHM 2095	Chemistry for Engineers 1 (**Critical Tracking**; Gen Ed Physical Sciences)	
CHM 2045L	General Chemistry 1 Laboratory (Gen Ed Physical Sciences)	1
ENC 1101	Expository and Argumentative Writing (State Core Gen Ed Composition; Writing Requirement: 6,000 words) [1]	3
IDS 1161	What is the Good Life (Gen Ed Humanities) [1]	3
MAC 2311	Analytic Geometry and Calculus 1 (**Critical Tracking**; Gen Ed Mathematics) [1]	4
	Credits	**15**
Semester Two		
ENC 3246	Professional Communication for Engineers (Gen Ed Composition; Writing Requirement: 6,000 words) [1]	3
MAC 2312	Analytic Geometry and Calculus 2 (**Critical Tracking**; State Core Gen Ed Mathematics) [1]	4
PHY 2048	Physics with Calculus 1 (**Critical Tracking**; State Core Gen Ed Physical Sciences) [1]	3
PHY 2048L	Laboratory for Physics with Calculus 1 (Gen Ed Physical Sciences)	1
State Core Gen Ed Humanities [1]		3
State Core Gen Ed Social and Behavioral Sciences [1]		3
	Credits	**17**

Semester Three

COP 2271	Computer Programming for Engineers	2
MAC 2313	Analytic Geometry and Calculus 3 (**Critical Tracking**; Gen Ed Mathematics) [1]	4
PHY 2049	Physics with Calculus 2 (**Critical Tracking**; Gen Ed Physical Sciences) [1]	3
PHY 2049L	Laboratory for Physics with Calculus 2	1
STA 3032	Engineering Statistics	3
Gen Ed Social and Behavioral Sciences with International; Writing Requirement: 6,000 words		3
	Credits	**16**

Semester Four

CGN 2328	Technical Drawing and Visualization	3
CGN 3710	Experimentation and Instrumentation in Civil Engineering	3
EGM 2511	Engineering Mechanics: Statics [1]	3
MAP 2302	Elementary Differential Equations (**Critical Tracking**; Gen Ed Mathematics) [1]	3
Science elective		3
	Credits	**15**

Semester Five

CGN 3421	Computer Methods in Civil Engineering	3
CGN 4160	Civil Engineering Practice	3
CGN 3510	Introduction to Sustainable Engineering	3
EGM 3400	Elements of Dynamics [1]	2
EGM 3520	Mechanics of Materials [1]	3
Select one:		3
GIS 3072C	Geographic Information Systems	
SUR 3103C	Geomatics	
SWS 4720C	GIS in Soil and Water Science	

URP 4273	Survey of Planning Information Systems	
ARC 4310C	Building Information Modeling	
ARC 4511	Structural Modeling	
	Credits	**17**

Semester Six

CES 3102	Mechanics of Engineering Structures	4
CGN 3501C	Civil Engineering Materials	4
CWR 3201	Hydrodynamics	4
TTE 4004C	Transportation Engineering	4
	Credits	**16**

Semester Seven

CEG 4011	Soil Mechanics	4
EGS 4034	Engineering Ethics and Professionalism	1
Second-Level Core courses		9
Technical elective		3
	Credits	**17**

Semester Eight

Second-Level Core course		3
CGN 4806 or CGN 4910	Transportation-Water-Materials Design or Structures-Geotechnical-Construction Comprehensive System Design	3
Design elective		3
Technical electives		6
	Credits	**15**
	Total Credits	**128**

[1] Minimum grade of C required.

Thieke,Robert J

Subject: FW: Request For UCC External Consult

From: Nawari,Nawari <nnawari@ufl.edu>
Sent: Friday, January 25, 2019 4:18 PM
To: Thieke,Robert J <robert.thieke@essie.ufl.edu>
Subject: RE: Request For UCC External Consult

Dear Dr. Thieke,

Yes, the two classes should be great options for all undergraduate engineering students.

ARC 4310C Building Information Modeling
ARC 4511 Structural Modeling

As a matter of fact, every semester I have had engineering students taking these courses.

Please let me know, would you need any additional information.

Best regards,

N. Nawari, Ph.D., P.E., F.ASCE
Assistant Dean for Graduate Education, UF Term Professor
College of Design, Construction & Planning | University of Florida,
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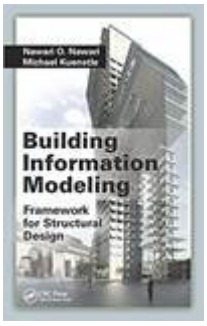

From: Thieke,Robert J
Sent: Friday, January 25, 2019 3:28 PM
To: Nawari,Nawari <nnawari@ufl.edu>
Subject: FW: Request For UCC External Consult

Dear Dr. Nawari:

I am trying to follow-up on a message that I sent (probably unwisely) shortly before the holiday break in December regarding a consult from your department over the possibility of adding one or both of your classes on Building Information Modeling as elective options in our Civil Engineering BS curriculum.

There has been one development during the intervening time; the Construction Management Department has indicated that our students could not take BCN 4254 without first taking an earlier BIM class, which probably precludes that option for most of our students.

Please let me know whether your classes might be a viable option.

Best regards,

Bob Thieke

From: Thieke,Robert J
Sent: Thursday, December 13, 2018 1:03 PM
To: Nawari,Nawari <nnawari@ufl.edu>
Subject: Request For UCC External Consult

Dear Dr. Nawari:

I am writing you as a result of a potential curriculum change in the Bachelor of Science Degree in Civil Engineering that would possibly involve one or two of your courses, namely:

ARC 4310C	Building Information Modeling
ARC 4511	Structural Modeling

Background: In our current curriculum we have a requirement involving an option of several classes across campus that focus on spatial information technology:

GIS 3072C	Geographic Information Systems
SUR 3103C	Geomatics
SWS 4720C	GIS in Soil and Water Science
URP 4273	Survey of Planning Information Systems

Proposal: Our plan would be to add the two above ARC classes to that list, and perhaps also the Building Information Modeling class from the Rinker School of Construction Management (BCN 4252 Introduction to Building Information Modeling), so that our students would choose one class from the following list:

ARC 4310C	Building Information Modeling
ARC 4511	Structural Modeling
BCN 4254	Building Information Modeling
SUR 3103C	Geomatics
URP 4273	Survey of Planning Information Systems
SWS 4720C	GIS in Soil and Water Science
GIS 3072C	Geographic Information Systems

Goal: The goal of this approach would be twofold:

1) By spreading the CE students among 7 class choices rather than only 4, we would minimize the impact on any one class's size.
2) Our students who are aiming to specialize in Water Resources, Transportation, or Geotechnical Engineering find great utility in the list of current spatial information electives. However our students seeking to specialize in Construction, and particularly those seeking an emphasis in Structures, find considerably less utility in the current arrangement. These students would no doubt get far more out of a class in Building Information Modeling.

Impact: The Civil Engineering program current produces about 130 students per year. However only about 20% of these select a specialization in Structures, and fewer still in Construction. So we would anticipate that about 30-40 students per year might seek the courses in DCP, so there might be an impact of a 10-15 student increase in each class. While this is not enormous, it is not insignificant either, and so we cannot pursue this curriculum change without approval from your department (I will likewise send a separate request for consult to the Rinker School of Construction Management).

At present it appears that one of the undergraduate students in ARC 4511 is a CE major, and 7 of the graduate students in the combined ARC 6512 are also CE majors. Likewise there is one CE undergrad in next Spring's ARC 4310C. So it seems as though there has already been some crossing over of interested students. We would like to expand that if possible.

Thanks and best regards,

Bob Thieke

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