Fiscal Unit/Academic Org	Geography - D0733
Administering College/Academic Group	Social And Behavioral Sciences
Co-adminstering College/Academic Group	
Semester Conversion Designation	Converted with minimal changes to program goals and/or curricular requirements (e.g., sub-plan/specialization name changes, changes in electives and/or prerequisites, minimal changes in overall structure of program, minimal or no changes in program goals or content)
Current Program/Plan Name	Geography
Proposed Program/Plan Name	Geographic Information Science
Program/Plan Code Abbreviation	GEOG-BS
Current Degree Title	Bachelor of Science

Credit Hour Explanation

Program credit hour requirements		A) Number of credit hours in current program (Quarter credit hours)	B) Calculated result for 2/3rds of current (Semester credit hours)	C) Number of credit hours required for proposed program (Semester credit hours)	D) Change in credit hours
Total minimum credit hours required for completion of program		48	32.0	32	0.0
Required credit hours offered by the unit	Minimum	36	24.0	24	0.0
	Maximum	50	33.3	33	0.3
Required credit hours offered outside of the unit	Minimum	0	0.0	0	0.0
	Maximum	13.5	9.0	9	0.0
Required prerequisite credit hours not included above	Minimum	9	6.0	6	0.0
	Maximum	9	6.0	6	0.0

Program Learning Goals

Note: these are required for all undergraduate degree programs and majors now, and will be required for all graduate and professional degree programs in 2012. Nonetheless, all programs are encouraged to complete these now.

Program Learning Goals

- Students acquire fundamental concepts of geographic information science
- Students achieve proficiency with methods of geographic information science
- Students can represent complex technical information orally, visually, or in writing
- Students can apply geographic information science concepts and methods in experiential and/or research settings.

Assessment

Assessment plan includes student learning goals, how those goals are evaluated, and how the information collected is used to improve student learning. An assessment plan is required for undergraduate majors and degrees. Graduate and professional degree programs are encouraged to complete this now, but will not be required to do so until 2012.

Is this a degree program (undergraduate, graduate, or professional) or major proposal? Yes

Does the degree program or major have an assessment plan on file with the university Office of Academic Affairs? Yes

Summarize how the program's current quarter-based assessment practices will be modified, if necessary, to fit the semester calendar.

For our assessment, we use a variety of direct and indirect methods, none of which depend upon whether the program is run under quarters or semesters. As a result, we do not anticipate any changes to our assessment practices under the semester system.

Program Specializations/Sub-Plans

If you do not specify a program specialization/sub-plan it will be assumed you are submitting this program for all program specializations/sub-plans.

Pre-Major

Does this Program have a Pre-Major? No

Attachments

- Attachment 2_Undergrad GIS_110210.docx: Attachment 2

   (Program Proposal. Owner: Pernik,Juliana Christine)

- Attachment 3_Undergrad GIS_110210.docx: Attachment 3

   (Curricular Map(s). Owner: Pernik,Juliana Christine)

- Division Cover Letter for Geography.doc: Attachment 1

   (Letter from the College to OAA. Owner: Mumy,Gene Elwood)

Comments

- G. Mumy wishes to see this program again; program was sent to ASCCAO too soon. *(by Vankeerbergen,Bernadette Chantal on 11/12/2010 01:01 PM)*

Workflow Information

Status	User(s)	Date/Time	Step
Submitted	Pernik,Juliana Christine	09/30/2010 03:01 PM	Submitted for Approval
Approved	Mansfield,Becky Kate	09/30/2010 03:22 PM	Unit Approval
Revision Requested	Mumy,Gene Elwood	10/14/2010 11:58 AM	College Approval
Submitted	Pernik,Juliana Christine	11/02/2010 11:24 AM	Submitted for Approval
Approved	Mansfield,Becky Kate	11/02/2010 12:46 PM	Unit Approval
Approved	Vanarsdale,Sonya Renee	11/02/2010 02:37 PM	College Approval
Revision Requested	Vankeerbergen,Bernadette Chantal	11/12/2010 01:01 PM	ASCCAO Approval
Submitted	Pernik,Juliana Christine	11/15/2010 02:49 PM	Submitted for Approval
Approved	Mansfield,Becky Kate	11/15/2010 04:37 PM	Unit Approval
Approved	Mumy,Gene Elwood	11/15/2010 05:13 PM	College Approval
Pending Approval	Hanlin,Deborah Kay Vankeerbergen,Bernadette Chantal Meyers,Catherine Anne Jenkins,Mary Ellen Bigler Nolen,Dawn	11/15/2010 05:13 PM	ASCCAO Approval

College of Arts and Sciences

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November 10,

Professor Larry Krissek
Chair, Arts and Sciences CCI

Dear Professor Krissek:

At the <u>undergraduate level</u> the Department of Geography has six major programs:

1. Environment and Society (BA)
2. Climatology and Physical Geography Specialization (BS)
3. Spatial Analysis (BS)
4. Urban, Regional and Global Studies (BA)
5. Geographic Information Science (BS) Tagged Major, pending
6. Atmospheric Science (BS) Tagged Major, pending

Atmospheric Science and Geographic Information Science are new degrees approved early this year at the University level but have not yet been given final approval by the Board of Regents. We are fairly confident that they will receive BOR approval and Geography has presented semester transition plans with only minor changes except for a reduction of sequences in the GIS major to eliminate possible transition programs in sequenced courses.

At the time the new degrees were being developed Geography also revised the entire Geography major and its specializations. These revisions were also approved by CAA early this year so the semester conversion plans contain minimal changes.

These conversion plans were reviewed by me and the Social Sciences Disciplinary Advisory Panel (SS DAP). The SS DAP and I support Geography's conversion plans and submit them to you for CCI's consideration.

Sincerely,

Gene E. Mumy
Associate Dean of Arts and Sciences/Social and Behavioral Sciences

To: OAA
Date: 6/14/2010

Cover Letter for Proposals from the Department of Geography

This is the transmittal cover letter to the Office of Academic Affairs that reflects the efforts by the Department of Geography under Quarter to Semester Conversion.

The department used a series of committee and special purpose task forces to review programs and courses. Having recently proposed substantial revisions to our majors, we were in relatively good position to begin the Q to S process.

There has been a tremendous effort to accomplish these planned changes, with commendable input from Professor Becky Mansfield (Undergraduate), Jay Hobgood (Atmospheric Science), and Darla Munroe (Graduate). The graduate level documents are still being finalized.

The department recommends approval of these changes, which by and large are converted with minimal changes to program goals and/or curricular requirements at the undergraduate level. A recently approved set of revisions to the Majors has been incorporated into our planned semester version.
[There are minimal name changes, changes in electives and/or prerequisites, minimal changes in overall structure of program, minimal or no changes in program goals or content.]

The graduate courses are minimally changed, but there is expected to be a complete re-write of our graduate manual to organize these classes in a way that conveys greater advisor flexibility. The department will seek appropriate approval for any substantive track or programs changes built around our existing graduate courses.

The following are the programs in the department:

a. Undergraduate bachelors degree programs and/or majors

1. Environment and Society (BA)
2. Climatology and Physical Geography Specialization (BS)
3. Spatial Analysis (BS)
4. Urban, Regional and Global Studies (BA)
5. Geographic Information Science (BS) Tagged Major, pending
6. Atmospheric Science (BS) Tagged Major, pending

b. Undergraduate minors

A minor in geography is available to any Arts and Sciences student who is not already majoring in geography.

The omission of a matching minor for the two new majors (5-6 above) was a technical oversight and we plan to correct this once the majors themselves are approved. Even without that correction, a student wishing to minor in areas related to atmospheric science or geographic information science has similar options in cognate fields (items 2 & 3: Climatology and Physical Geography Specialization (BS) and Spatial Analysis (BS) respectively).

c. Undergraduate associate degree programs

n/a

d. Graduate degree programs

1. M.A. in Geography
2. Ph.D. in Geography
3. M.S. in Atmospheric Science
4. Ph.D. in Atmospheric Science

e. Graduate minors

n/a

f. Graduate certificate programs

n/a

g. Graduate interdisciplinary specializations

Graduate Interdisciplinary Specialization in Geo-Spatial Data Analysis.

Since the interdisciplinary specialization requires elements from many other degree programs, we plan to finalize these syllabi and arrangements after the initial round of graduate degree courses has been screened.

h. Professional degree programs

n/a

i. Combined programs (e.g., BS/MS, Ph.D./ MD)

n/a

For the record, no programs are being withdrawn. The details in the balance of the template are incorporated by reference, and are being revised to ensure technical compliance with the templates.

Thank you for attention to these proposals

Morton O'Kelly
Professor & Chair
Department of Geography

Rationale for program changes and a description of how changes will benefit students and enhance program quality. [include date of last program revision]

This is a new tagged major, in its last stages of approval (Board of Regents approval expected in the 2010-2011 Academic Year). Because it has not yet been approved and implemented, very few changes are being made to the curriculum for semesters except where necessary to address sequencing concerns and ensure timely graduation for our students. To address sequencing while maintaining the same number of courses, we reduced the courses in the core by one, added one more elective, and changed the prerequisite structure on the core courses.

List of semester courses in the program

Segment of Major Program and nature of conversion	Semester #	Semester course name	Units
Required Prerequisites			
	CSE 1222 OR CSE 1223	Introduction to Computer Programming in C++ for Engineers and Scientists OR Introduction to Computer Programming in Java	3
	STAT 2450	Introduction to Statistical Analysis	3
Core Requirements (24 hours)			
	5100	Quantitative Geographical Methods	3
	5200	Elements of Cartography	3
	5201	Computer Cartography and Geographic Visualization	3
	5220	Fundamentals in Geographic Information Systems	3
	5221	Spatial Simulation and Modeling in GIS	3
	5222	GIS Applications in Social Science and Business	3
	5223	Design and Implementation of GIS	3
	5270	Geographic Applications of Remote Sensing	3
Electives (8-9 hours) Choose three of the following courses:			
	4101	Undergraduate Research and Professionalization Seminar	3
	5224	Emerging topics in GIS	3
	5275	Locational Analysis	3
	5300	Geography of Transportation	3
	5402	Land Use Geography	3
	CSE 1232	Data Structures Using C++	3
	CSE 1233	Data Structures Using Java	3
	CSE 4221	Introduction to Object-Oriented Programming	3
	CSE 5241	Introduction to Database Systems	2
Successor to	ES	Earth Systems Data Collection and Analysis	3

Semester Advising Sheet

GIS BS Advising Sheet SEMESTERS			
Segment of Major Program and Course Number	**Course name**	**Credit hours**	**Grade**
Required Prerequisites or Supplements to the Major			
CSE 1222 OR CSE 1223	Introduction to Computer Programming in C++ for Engineers and Scientists; Introduction to Computer Programming in Java	3	
STAT 2450	Introduction to Statistical Analysis	3	
Core Requirements (24 hours)			
5100	Quantitative Geographical Methods	3	
5200	Elements of Cartography	3	
5201	Computer Cartography and Geographic Visualization	3	
5220	Fundamentals in Geographic Information Systems	3	
5221	Spatial Simulation and Modeling in GIS	3	
5222	GIS Applications in Social Science and Business	3	
5223	Design and Implementation of GIS	3	
5270	Geographic Applications of Remote Sensing	3	
Electives (8-9 hours) Choose three of the following courses:			
4101	Undergraduate Research and Professionalization Seminar	3	
5224	Emerging topics in GIS	3	
5275	Locational Analysis	3	
5300	Geography of Transportation	3	
5402	Land Use Geography	3	
CSE 1232	Data Structures Using C++	3	
CSE 1233	Data Structures Using Java	3	
CSE 4221	Introduction to Object-Oriented Programming	3	
CSE 5241	Introduction to Database Systems	2	
Successor to ES	Earth Systems Data Collection and Analysis	3	
	Total Program Hours		
	Minimum Program Hours	32-33	
	Prerequisite Hours	5	
Advisor Signature and Date:			
Name:			
Major/Specialization:			
Campus ID:			

Quarter Advising Sheet

GIS BS Advising Sheet QUARTERS			
Segment of Major Program and Course Number	**Quarter course name**	**Credit hours**	**Grade**
Required Prerequisites or Supplements to the Major			
CSE 201 or 202	CS&E 201 (Elementary Computer Programming; Java is taught) <u>or</u> 202 (Introduction to Programming and Algorithms for Engineers and Scientists; C++ is taught)	5	
STATS 245	Statistics 245	5	
Core Requirements (45 credit hours)			
480	Map Reading and Interpretation	5	
580	Elements of Cartography	5	
607	Fundamentals in Geographic Information Systems	5	
680	Computer Cartography and Geographic Visualization	5	
683	Quantitative Geographical Methods	5	
684	Geographic Applications of Remote Sensing	5	
685	Intermediate Geographic Information Systems	5	
686	GIS Applications in Social Science and Business	5	
687	GIS Design and Implementation	5	
Electives. Choose two of the following courses (6-10 credit hours)			
645	Geography of Transportation	5	
647	Locational Analysis	5	
655	Land Use Geography	5	
688	Emerging topics in GIS	5	
787	Seminar in GIS	5	
695	Undergraduate Research and Professionalization Seminar	5	
CSE 214	CS&E Data Structures for Information Systems (4 credits)	4	
CSE 230	CS&E Introduction to C++ Programming(4 credits)	4	
CSE 502	CS&E Object-Oriented Programming for Engineers and Scientists (3 credits)	3	
CSE 670	CS&E Introduction to Database Systems I(3 credits)	3	
	For the above courses, CS&E suggests that students who have taken 201 for their prerequisite take 214, while those who have taken 202 should choose 230 or 502. The prerequisite for 670 is 502.		
ES 310	Earth Sci Earth Systems Data Collection and Analysis	5	
	Total Program Hours		
	Minimum Program Hours (including prereqs)	**51-55**	
	Prerequisite Hours	**10**	
Advisor Signature and Date:			
Name:			
Major/Specialization:			
Campus ID:			

Transition policy:

Students who began their degree under quarters will not be penalized as we move to semesters, either in terms of progress towards their degree or their expected date of graduation. The sequence of classes in the major is largely very flexible, and we have reduced sequences with our current revisions. We do not see the need for any bridge courses in Geographic Information Sciences.

Curriculum map, indicating how program goals are accomplished via specific courses

	KEY:	1=Beg.	2=Int.	3=Adv.
	Learning outcome A	**Learning outcome B**	**Learning outcome C**	**Learning outcome D**
Required Prerequisites (8 credit hours)				
CSE 1222 OR CSE 1223	1	1		
STAT 2450	1	1		
Core Requirements (24 hours)				
5100	2	2		
5200	1	1	2	1
5201	2	2	3	
5220	1	1		
5221		2	2	3
5222		2	2	3
5223	3	2		3
5270	2	2		2
Electives (8-9 hours) Choose three of the following courses:				
4101		3	3	3
5224	3	3		
5275	3	2		
5300	3	2		
5402	3	2	2	2
CSE 1232		3		
CSE 1233		3		
CSE 4221		3		
CSE 5241		3		
Successor to ES 310		2		

Learning Outcome A: Students acquire fundamental concepts of geographic information science
Learning Outcome B: Students achieve proficiency with methods of geographic information science
Learning Outcome C: Students can represent complex technical information orally, visually, or in writing
Learning Outcome D: Students can apply geographic information science concepts and methods in experiential and/or research settings.