COLLEGE of LIBERAL ARTS and SCIENCES
PROPOSAL

Proposal and Rationale for Requested change:
The PSM-GIS Program and the Certificate in GIS have been in desperate need of revision for several years.

First, department personnel decided to revise, update and increase the difficulty of an undergraduate course, GEO 3800, Introduction to Cartography. The new version, GEO 4810 Cartography and Visualization, will be able to be used in both the undergraduate Geography and graduate programs, maximizing faculty efforts across the department. This new course, GEO 4810, was passed by CLASCC (with minor revisions) in the February 3rd meeting.

Second, this new class, GEO 4810, is intended to replace GEO 5810 Introduction to GIS in this department's programs. As such, GEO 4810 needs to be exchanged for GEO 5810 in the required courses for both the PSM-GIS as well as the Certificate in GIS.

Third, GEO 5810 will be retained for use in other programs outside of Geology and Geography. GEO 5810, however, should not be able to be taken for credit for the PSM-GIS or the Certificate in GIS. This restriction needs to be added to GEO 5810.

Fourth, in an effort to make the PSM-GIS program as attractive as possible, the program is requested to have the option to be offered completely online.

Fifth, GEO 5825 Lidar was proposed and accepted as a new course last Fall. It should be added to the section entitled "Electives Set II" to broaden the offerings in the PSM-GIS.

Last, GEO 5000 GIScience Seminar was proposed and passed by CLASCC in the February 3rd meeting. This class needs to be added to the required list of courses for the PSM-GIS. This will result in a slight shift of credit hours between the required courses and the Electives Set II.

Note: Chairs and program directors of all impacted programs were contacted and have approved the proposed changes.

Effective Term/Year:
Fall, 2021

Current Versions and Proposed Revisions

CURRENT CATALOG ENTRY: Geographic Information Sciences (Professional Science Master's)

Students will enroll in the following core courses. Credits: 12
GEO 5810 - Introduction to Geographic Information Science Credits: 3
GEO 5820 - Remote Sensing I Credits: 3
MBA 5001 - Business Operations in Sustainable Energy Facilities Credits: 3

OR
MBA 5010 - Accounting from a Management Perspective. Credits: 3
MBA 5680 - Organizational Behavior and Group Dynamics. Credits: 3

Elective Set I

Students will complete one of the following statistics and modeling courses.
Credits: 3 to 4
BIO 4750 - Statistical Analysis of Scientific Data Credits: 4
BIO 4820 - Spatial Analysis for Environmental Sciences Credits: 4
BIO 5381 - Advanced Biostatistics. Credits: 3
GEO 5880 - Geospatial Data Models Credits: 3
MAT 5151 - Probability. Credits: 4

Elective Set II

Students will complete minimally 14 credit hours from the following list.
Credits: 14
BIO 4820 - Spatial Analysis for Environmental Sciences Credits: 4
BIO 4840 - Resource Management and Environmental Assessment Credits: 3
BIO 5380 - Landscape Ecology. Credits: 3
CIT 4823 - Big Data and Cloud Computing Credits: 3
GEO 4910 - GIS Programming Credits: 4
GEO 5830 - GIS: Building Geodatabases Credits: 3
GEO 5870 - Remote Sensing II Credits: 3
GEO 5880 - Geospatial Data Models Credits: 3
OSC 4820 - Business Analytics and Data Mining Credits: 3
PLS 4793 - Civic and Nonprofit Leadership Credits: 3
PLS 4893 - Budgeting in Government and Nonprofit Organizations Credits: 3
PLS 5543 - Proseminar in Public Administration Credits: 3
TEC 5323 - Advanced Database Technology. Credits: 3
TEC 5970 - Special Topics in Technology Credits: 1 to 3
GIS 5970 - Special Topics in Geographic Information Sciences Credits: 3

Experiential (Internship) Component

Minimum of 3 credit hours of internship.
BIO 5980A - Graduate Internship in Biological Sciences. Credits: 1-6
ECN 5980 - Internship in Economics. Credits: 1 to 3
GEO 5980 - Geography Internship Credits: 6
PLS 5980 - Administrative Internship. Credits: 1 to 6
TEC 5980 - Industrial Internship in the Technologies. Credits: 1 to 10
MBA 5980 - Internship in Business Administration. Credits: 1 to 12

REVISED CATALOG ENTRY: Geographic Information Sciences (Professional Science Master's) (~~deletions~~ and additions) 32 Credit Hours

Students will enroll in the following core courses. Credits: ~~12~~ 13
~~GEO 5810 - Introduction to Geographic Information Science Credits: 3~~
GEO 4810 - Cartography and Geographic Data Visualization. Credits: 3
GEO 5000 – Geographic Information Science Seminar. Credits: 1
GEO 5820 - Remote Sensing I Credits: 3
MBA 5001 - Business Operations in Sustainable Energy Facilities Credits: 3
OR
MBA 5010 - Accounting from a Management Perspective. Credits: 3

MBA 5680 - Organizational Behavior and Group Dynamics. Credits: 3

Elective Set I

Students will complete one of the following statistics and modeling courses.
Credits: 3 to 4

BIO 4750 - Statistical Analysis of Scientific Data Credits: 4
BIO 4820 - Spatial Analysis for Environmental Sciences Credits: 4
BIO 5381 - Advanced Biostatistics. Credits: 3
GEO 5880 - Geospatial Data Models Credits: 3
MAT 5151 - Probability. Credits: 4

Elective Set II

Students will complete ~~minimally 14~~ **12 – 13** credit hours from the following list.
Credits: ~~14~~ **12 – 13**

BIO 4820 - Spatial Analysis for Environmental Sciences Credits: 4
BIO 4840 - Resource Management and Environmental Assessment Credits: 3
BIO 5380 - Landscape Ecology. Credits: 3
CIT 4823 - Big Data and Cloud Computing Credits: 3
GEO 4910 - GIS Programming Credits: 4
GEO 5825 – Advanced Lidar Mapping. Credits: 3
GEO 5830 - GIS: Building Geodatabases Credits: 3
GEO 5870 - Remote Sensing II Credits: 3
GEO 5880 - Geospatial Data Models Credits: 3
OSC 4820 - Business Analytics and Data Mining Credits: 3
PLS 4793 - Civic and Nonprofit Leadership Credits: 3
PLS 4893 - Budgeting in Government and Nonprofit Organizations Credits: 3
PLS 5543 - Proseminar in Public Administration Credits: 3
TEC 5323 - Advanced Database Technology. Credits: 3
TEC 5970 - Special Topics in Technology Credits: 1 to 3
GIS 5970 - Special Topics in Geographic Information Sciences Credits: 3

Experiential (Internship) Component

Minimum of 3 credit hours of internship.

BIO 5980A - Graduate Internship in Biological Sciences. Credits: 1-6
ECN 5980 - Internship in Economics. Credits: 1 to 3
GEO 5980 - Geography Internship Credits: 6
PLS 5980 - Administrative Internship. Credits: 1 to 6
TEC 5980 - Industrial Internship in the Technologies. Credits: 1 to 10
MBA 5980 - Internship in Business Administration. Credits: 1 to 12

CURRENT CATALOG ENTRY – Geology/Geography: Certificate in Geographic Information Sciences

The GiSci Certificate requires 18 semester hours of study including both required and elective courses. Specific requirements are as follows:
Required Courses

Students must complete the following core courses. Credits: 6

GEO 5810 - Introduction to Geographic Information Science Credits: 3
GEO 5820 - Remote Sensing I Credits: 3

Elective Courses

Students must complete 12 hours in the following elective courses to fulfill credit requirements. Credits: 12

Maximum of 3 credits at the 4750-4999 level will apply.

BIO 4820 - Spatial Analysis for Environmental Sciences Credits: 4
BIO 4840 - Resource Management and Environmental Assessment Credits: 3
GEO 4910 - GIS Programming Credits: 4
BIO 5380 - Landscape Ecology. Credits: 3
GEO 5870 - Remote Sensing II Credits: 3
GEO 5830 - GIS: Building Geodatabases Credits: 3
GEO 5880 - Geospatial Data Models Credits: 3

REVISED CATALOG ENTRY – Geology/Geography: Certificate in Geographic Information Sciences (~~deletions~~ and additions)

The GiSci Certificate requires 18 semester hours of study including both required and elective courses. Specific requirements are as follows:
Required Courses

Students must complete the following core courses. Credits: 6

~~**GEO 5810 - Introduction to Geographic Information Science Credits: 3**~~
GEO 4810 - Cartography and Geographic Data Visualization. Credits: 3
GEO 5820 - Remote Sensing I Credits: 3

Elective Courses

Students must complete 12 hours in the following elective courses to fulfill credit requirements. Credits: 12

Maximum of 3 credits at the 4750-4999 level will apply.

BIO 4820 - Spatial Analysis for Environmental Sciences Credits: 4
BIO 4840 - Resource Management and Environmental Assessment Credits: 3
GEO 4910 - GIS Programming Credits: 4
GEO 5825 – Advanced Lidar Mapping. Credits: 3
BIO 5380 - Landscape Ecology. Credits: 3
GEO 5870 - Remote Sensing II Credits: 3
GEO 5830 - GIS: Building Geodatabases Credits: 3
GEO 5880 - Geospatial Data Models Credits: 3

Date approved by the department or school: January 29, 2021
Date approved by the college curriculum committee: February 17, 2021
Date approved by CGS: