**Ogden College of Science and Engineering**

**Office of the Dean**

**745-4449**

**REPORT TO THE UNIVERSITY CURRICULUM COMMITTEE**

Date: September 8, 2011

The Ogden College of Science and Engineering submits the following action items for consideration:

1. New Business

|  |  |
| --- | --- |
| **Type of item** | **Description of Item & Contact Information** |
| ActionWITHDRAWN | **Revise a Program**Ref. #361, Minor in Floodplain ManagementContact: Warren Campbell, warren.campbell@wku.edu, x58988 |
| Action | **Revise a Program**Ref. #677, Geology: Professional MajorContact: Michael May, michael.may@wku.edu, x56891 |
| Action` | **Revise a Program**Ref. #577, Geology: Professional Extended MajorContact: Michael May, michael.may@wku.edu, x56891 |
| Action | **Revise a Program**Ref. #674, GeographyContact: David Keeling, david.keeling@wku.edu, x54555 |
| Action | **Revise a Prgram**Ref. #576, Major in Geographic Information ScienceContact: Kevin B. Cary, kevin.cary@wku.edu,. x52981 |

Proposal Date: August 18, 2011

**Ogden College of Science and Engineering**

**Department of Geography and Geology**

**Proposal to Revise a Program**

**(Action Item)**

Contact Person: Michael May (Michael.may@wku.edu) 5-6891

**1. Identification of program:**

* 1. Current program reference number: 677
	2. Current program title: Geology: Professional Major
	3. Credit hours: 40

**2. Identification of the proposed program changes:**

* Change physics requirement from PHYS 250/251 to PHYS 180/181.
* Remove CS146 from the program.
* Reflect new credit hours for MATH 136.

**3. Detailed program description:**

|  |  |  |  |
| --- | --- | --- | --- |
| Courses | Hours | Courses | Hours |
| Core Required Courses | 20 | Core Required Courses | 20 |
| GEOL 111 The Earth | 3 | GEOL 111 The Earth | 3 |
| GEOL 112 Earth History | 3 | GEOL 112 Earth History | 3 |
| GEOL 113 The Earth Lab | 1 | GEOL 113 The Earth Lab | 1 |
| GEOL 114 Earth History Lab | 1 | GEOL 114 Earth History Lab | 1 |
| GEOL 308 Structural Geology | 4 | GEOL 308 Structural Geology | 4 |
| GEOL 380 Intro. Field Techniques | 3 | GEOL 380 Intro. Field Techniques | 3 |
| GEOL 460 Sed. / Strat. | 3 | GEOL 460 Sed. / Strat. | 3 |
| GEOL 499 Professional Prep. | 2 | GEOL 499 Professional Prep. | 2 |
|  |  |  |  |
| Additional Required Courses | 20 | Additional Required Courses | 20 |
| GEOL 270 Analytical Techniques | 3 | GEOL 270 Analytical Techniques | 3 |
| GEOL 330 Mineralogy | 4 | GEOL 330 Mineralogy | 4 |
| GEOL 350 Petrology | 4 | GEOL 350 Petrology | 4 |
| Approve Geology Electives | 9 | Approve Geology Electives | 9 |
|  |  |  |  |
|  Program Hours | 40 | Program Hours  | 40 |
|  |  |  |  |
| Other Requirements | 6 | Other Requirements | 6 |
| Geology Field Camp | 6 | Geology Field Camp | 6 |
| or |   | or |   |
| GIS Certificate | 6 | GIS Certificate | 6 |
|  |  |  |  |
| Requirements outside Geology | 31.5 | **Requirements outside Geology** | **28** |
| MATH 136 Calculus I | 4.5 | **MATH 136 Calculus I** | **4** |
| BIOL 122 Biological Concepts | 3 | BIOL 122 Biological Concepts | 3 |
| BIOL 123 Biological Concepts Lab | 1 | BIOL 123 Biological Concepts Lab | 1 |
| CHEM 120 College Chemistry I | 4 | CHEM 120 College Chemistry I | 4 |
| CHEM 121 College Chemistry I Lab | 1 | CHEM 121 College Chemistry I Lab | 1 |
| **~~PHYS 250 Intro. Mech.~~** | 3 | **PHYS 180 Intro. Physics** | **3** |
| **~~PHYS 251 Intro. Mech. Lab~~** | 1 | **PHYS 181 Intro. Phys. Lab** | **1** |
| CS 146 Intro. to Programming | 3 | **~~CS 146 Intro. to Programming~~** | **~~3~~** |
| GEOG 316 Fundamentals of GIS | 4 | GEOG 316 Fundamentals of GIS | 4 |
| GEOG 317 GIS | 4 | GEOG 317 GIS | 4 |
| GEOG 391 Data Analysis | 3 | GEOG 391 Data Analysis | 3 |

**4. Rationale for the proposed program change:**

* Physics 250/251 has a new corequisite of Math 227, which is higher than our program requires. University Physics I (PHYS 255) has a Math corequisite that is higher than our program requires.

Physics 180/181 was recommended as a substitute by the Dept. of Physics.

* The Computer Science course *Introduction to Programming* (CS146) no longer meets the computing needs of the Geology program.
* MATH 136 credit hours are reduced from 4.5 to 4 hours.

**5. Proposed term for implementation:** Fall 2012

**6. Dates of prior committee approvals:**

Department of Geography and Geology \_\_\_\_8/18/2011\_\_\_\_\_\_\_

 Ogden College Curriculum Committee \_\_\_\_9/1/2011\_\_\_\_\_\_\_\_

 Undergraduate Curriculum Committee \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 University Senate \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Attachment: Program Inventory Form**

Proposal Date: 8/18/2011

**Ogden College of Science and Engineering**

**Department of Geography and Geology**

**Proposal to Revise a Program**

**(Action Item)**

Contact Person: Michael May (Michael.may@wku.edu) 5-6891

**1. Identification of program:**

* 1. Current program reference number: 577
	2. Current program title: Geology: Professional Extended Major
	3. Credit hours: 52

**2. Identification of the proposed program changes:**

* Change physics requirement from PHYS 250/251 to PHYS 180/181.
* Remove CS146 from the program.
* Reflect change in credit hours for MATH 136.

**3. Detailed program description:**

|  |  |  |  |
| --- | --- | --- | --- |
| Courses | Hours | Courses | Hours |
| Core Required Courses | 20 | Core Required Courses | 20 |
| GEOL 111 The Earth | 3 | GEOL 111 The Earth | 3 |
| GEOL 112 Earth History | 3 | GEOL 112 Earth History | 3 |
| GEOL 113 The Earth Lab | 1 | GEOL 113 The Earth Lab | 1 |
| GEOL 114 Earth History Lab | 1 | GEOL 114 Earth History Lab | 1 |
| GEOL 308 Structural Geology | 4 | GEOL 308 Structural Geology | 4 |
| GEOL 380 Intro. Field Techniques | 3 | GEOL 380 Intro. Field Techniques | 3 |
| GEOL 460 Sed. / Strat. | 3 | GEOL 460 Sed. / Strat. | 3 |
| GEOL 499 Professional Prep. | 2 | GEOL 499 Professional Prep. | 2 |
|  |  |  |  |
| Additional Required Courses | 32 | Additional Required Courses | 32 |
| GEOL 270 Analytical Techniques | 3 | GEOL 270 Analytical Techniques | 3 |
| GEOL 310 Global Hydrology | 3 | GEOL 310 Global Hydrology | 3 |
| GEOL 330 Mineralogy | 4 | GEOL 330 Mineralogy | 4 |
| GEOL 350 Petrology | 4 | GEOL 350 Petrology | 4 |
| GEOL 415 Environmental Geol. | 3 | GEOL 415 Environmental Geol. | 3 |
| GEOL 485 Fossil Fuels | 3 | GEOL 485 Fossil Fuels | 3 |
| Approve Geology Electives | 12 | Approve Geology Electives | 12 |
|   |  |   |   |
|  Program Hours | 52 | Program Hours  | 52 |
|  |  |  |  |
| Other Requirements | 6 | Other Requirements | 6 |
| Geology Field Camp | 6 | Geology Field Camp | 6 |
| or |   | or |   |
| GIS Certificate | 6 | GIS Certificate | 6 |
|  |  |  |  |
| Requirements outside Geology | 31.5 | **Requirements outside Geology** | **28** |
| MATH 136 Calculus I | 4.5 | **MATH 136 Calculus I** | **4** |
| BIOL 122 Biological Concepts | 3 | BIOL 122 Biological Concepts | 3 |
| BIOL 123 Biological Concepts Lab | 1 | BIOL 123 Biological Concepts Lab | 1 |
| CHEM 120 College Chemistry I | 4 | CHEM 120 College Chemistry I | 4 |
| CHEM 121 College Chemistry I Lab | 1 | CHEM 121 College Chemistry I Lab | 1 |
| **~~PHYS 250 Introductory Mech.~~** | **3** | **PHYS 180 Intro. Modern Physics** | **3** |
| **~~PHYS 251 Introductory Mech. Lab~~** | **1** | **PHYS 181 Intro. Modern Physics Lab** | **1** |
| CS 146 Intro. to Programming | 3 | **~~CS 146 Intro. to Programming~~** | **~~3~~** |
| GEOG 316 Fundamentals of GIS | 4 | GEOG 316 Fundamentals of GIS | 4 |
| GEOG 317 GIS | 4 | GEOG 317 GIS | 4 |
| GEOG 391 Data Analysis | 3 | GEOG 391 Data Analysis | 3 |
|   |   |   |   |

**4. Rationale for the proposed program change:**

* Physics 250/251 has a new co-requisite of Math 227 which is higher than our program requires. University Physics I (PHYS 255) also has a Math co-requisite that is higher than our program requires. Physics 180/181 was recommended as a substitute by the Dept. of Physics.
* The Computer Science course *Introduction to Programming* (CS146) no longer meets the computing needs of the Geology program.
* MATH 136 credit hours are reduced from 4.5 to 4 hours.

**5. Proposed term for implementation:** Fall 2012

**6. Dates of prior committee approvals:**

Department of Geography and Geology \_\_\_\_8/18/211\_\_\_\_\_\_\_\_

 Ogden College Curriculum Committee \_\_\_\_9/1/2011\_\_\_\_\_\_\_\_

 Undergraduate Curriculum Committee \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 University Senate \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Attachment: Program Inventory Form**

Proposal Date: August 18, 2011

**Ogden College of Science and Engineering**

**Department of Geography and Geology**

**Proposal to Revise a Program**

**(Action Item)**

Contact Person: David Keeling, david.keeling@wku.edu, 5-4555

**1. Identification of program:**

* 1. Current program reference number: 674
	2. Current program title: Geography
	3. Credit hours: 36

**2. Identification of the proposed program changes:**

* Add MATH 183 (Statistics) to the list of additional required courses for the Karst Geoscience option.
* Replace MATH 117 (Trig) as an additional required course with MATH 183 in the other options.
* Delete MATH 118 (Alg/Trig) as an additional required course in the other options.

**3. Detailed program description:**

|  |  |
| --- | --- |
| Karst Geoscience■ Foundation Requirements 13 hoursGEOG 100 or GEOL 102  or GEOL 111 Physical Geo. (3)GEOG 110 World Regional Geog. (3)GEOG 280 Environmental Science (3) GEOG 475 Mammoth Cave Karst (3)  (Summer Field Course)GEOG 499 Professional Development (1)■ Thematic Requirements 9-10 hoursGEOG 310 Hydrology (3) ORGEOG 459 Physical Hydrology (3)GEOG 461 Karst Environments (3) GEOG 420 Geomorphology (4) ORGEOG 475 Mammoth Cave Karst (3)  (Summer Field Course)■ Technique Requirements 10 hoursGEOG 300 Research (3)GEOG 316 Foundations GIS (4)GEOG 391 Data Analysis (3) ■ Approved Electives 3-4 hoursGEOG 208 Floods and Droughts (1)GEOG 209 Natural Disasters (1)GEOG 317 GIS (4)GEOG 414 Remote Sensing (4)GEOG 417 GIS Analysis (3)GEOG 419 GIS Applications (3)GEOG 444 Environmental Ethics (3)GEOG 452 Field Methods (3)GEOG 455 Global Env. Change (3)GEOG 471 Resource Management (3)GEOG 474 Env. Planning (3)GEOG 489 Env. Law & Policy (3)GEOL 415 Env. Geology (3)GEOL 445 Aqueous Geochemistry (3)Program Total 36 hoursAdditional requirements: MATH 136, CHEM 120, and BIOL 120 OR PHYS 201 | Karst Geoscience■ Foundation Requirements 13 hoursGEOG 100 or GEOL 102  or GEOL 111 Physical Geo. (3)GEOG 110 World Regional Geog. (3)GEOG 280 Environmental Science (3) GEOG 475 Mammoth Cave Karst (3)  (Summer Field Course)GEOG 499 Professional Development (1)■ Thematic Requirements 9-10 hoursGEOG 310 Hydrology (3) ORGEOG 459 Physical Hydrology (3)GEOG 461 Karst Environments (3) GEOG 420 Geomorphology (4) ORGEOG 475 Mammoth Cave Karst (3)  (Summer Field Course)■ Technique Requirements 10 hoursGEOG 300 Research (3)GEOG 316 Foundations GIS (4)GEOG 391 Data Analysis (3) ■ Approved Electives 3-4 hoursGEOG 208 Floods and Droughts (1)GEOG 209 Natural Disasters (1)GEOG 317 GIS (4)GEOG 414 Remote Sensing (4)GEOG 417 GIS Analysis (3)GEOG 419 GIS Applications (3)GEOG 444 Environmental Ethics (3)GEOG 452 Field Methods (3)GEOG 455 Global Env. Change (3)GEOG 471 Resource Management (3)GEOG 474 Env. Planning (3)GEOG 489 Env. Law & Policy (3)GEOL 415 Env. Geology (3)GEOL 445 Aqueous Geochemistry (3)Program Total 36 hoursAdditional requirements: MATH 136, **MATH 183**, CHEM 120, and BIOL 120 OR PHYS 201 |
| Cultural Geography■ Foundation Requirements 14 hoursGEOG 100 or GEOL 102 Physical (3)GEOG 110 World Regional Geog. (3)GEOG 330 Intro to Cultural (3) GEOG 430 Topics in Cultural (3) GEOG 475 or 495 Practicum or Research (1) GEOG 499 Professional Development (1)■ Regional Requirements 6 hoursChoose two courses from:GEOG 200 Latin America (3)GEOG 360 North America (3)GEOG 451 Kentucky (3)GEOG 454 Middle America (3)GEOG 462 South America (3)GEOG 464 Europe (3)GEOG 465 Asia (3)GEOG 466 Africa (3)GEOG 467 Middle East (3)■ Thematic Requirements 6 hoursChoose two courses from:GEOG 350 Economic (3)GEOG 378 Food & Culture (3)GEOG 480 Urban (3)GEOG 481 Tourism (3)■ Technique Requirements 10 hoursGEOG 300 Research (3)GEOG 316 Foundations GIS (4)GEOG 391 Data Analysis (3) Program Total 36 hoursAdditional requirement: MATH 118 (or MATH 116 and MATH 117) | Cultural Geography■ Foundation Requirements 14 hoursGEOG 100 or GEOL 102 Physical (3)GEOG 110 World Regional Geog. (3)GEOG 330 Intro to Cultural (3) GEOG 430 Topics in Cultural (3) GEOG 475 or 495 Practicum or Research (1) GEOG 499 Professional Development (1)■ Regional Requirements 6 hoursChoose two courses from:GEOG 200 Latin America (3)GEOG 360 North America (3)GEOG 451 Kentucky (3)GEOG 454 Middle America (3)GEOG 462 South America (3)GEOG 464 Europe (3)GEOG 465 Asia (3)GEOG 466 Africa (3)GEOG 467 Middle East (3)■ Thematic Requirements 6 hoursChoose two courses from:GEOG 350 Economic (3)GEOG 378 Food & Culture (3)GEOG 480 Urban (3)GEOG 481 Tourism (3)■ Technique Requirements 10 hoursGEOG 300 Research (3)GEOG 316 Foundations GIS (4)GEOG 391 Data Analysis (3) Program Total 36 hours* **Additional requirements: MATH 116 (Algebra) and MATH 183 (Statistics)**
 |
| Environmental Planning and Resource Management■ Foundation Requirements 13 hoursGEOG 100 or GEOL 102 Physical (3)GEOG 110 World Regional Geog. (3)GEOG 280 Environment (3)GEOG 475 or 495 Practicum or Research (3) GEOG 499 Professional Development (1)■ Thematic Requirements 9 hoursGEOG 328 Biogeography (3)GEOG 471 Natural Resources (3)GEOG 474 Env. Planning (3)■ Technique Requirements 10 hoursGEOG 300 Research (3)GEOG 316 Foundations GIS (4)GEOG 391 Data Analysis (3) ■ General Electives 4 hoursGEOG 208, 209, 310, 317, 350, 380, 414, 417, 419, 444, 452, 455, 459,461, 487, GEOL 415Program Total 36 hoursAdditional requirements: MATH 118 (or MATH 116 and MATH 117) and one Ethics course: PHIL 320 or GEOG 444 | Environmental Planning and Resource Management■ Foundation Requirements 13 hoursGEOG 100 or GEOL 102 Physical (3)GEOG 110 World Regional Geog. (3)GEOG 280 Environment (3)GEOG 475 or 495 Practicum or Research (3) GEOG 499 Professional Development (1)■ Thematic Requirements 9 hoursGEOG 328 Biogeography (3)GEOG 471 Natural Resources (3)GEOG 474 Env. Planning (3)■ Technique Requirements 10 hoursGEOG 300 Research (3)GEOG 316 Foundations GIS (4)GEOG 391 Data Analysis (3) ■ General Electives 4 hoursGEOG 208, 209, 310, 317, 350, 380, 414, 417, 419, 444, 452, 455, 459, 461, 487, GEOL 415Program Total 36 hoursAdditional requirements: **MATH 116 and MATH 183**, and one Ethics course: PHIL 320 or GEOG 444 |
| Land, Weather, and Climate■ Foundation Requirements 13 hoursGEOG 100 or GEOL 102 or GEOL 111 Physical/Earth (3)GEOG 110 World Regional Geog. (3)GEOG 121 Meteorology (3) GEOG 475 or 495 Practicum or Research (3) GEOG 499 Professional Development (1)■ Thematic Requirements 7 hoursGEOG 322 Global Climate Systems (4)GEOG 424 or 426Weather (3)■ Technique Requirements 10 hoursGEOG 300 Research (3)GEOG 316 Foundations GIS (4)GEOG 391 Data Analysis (3) ■ General Electives 6 hoursGEOG 122, 222, 310, 325, 328, 414, 420, 424 or 426, 482, 455, 459, 461, 471, GEOL 311, 325Program Total 36 hoursAdditional Requirements: MATH 118 (or 116/117), PHY 201 | Land, Weather, and Climate■ Foundation Requirements 13 hoursGEOG 100 or GEOL 102 or GEOL 111 Physical/Earth (3)GEOG 110 World Regional Geog. (3)GEOG 121 Meteorology (3) GEOG 475 or 495 Practicum or Research (3) GEOG 499 Professional Development (1)■ Thematic Requirements 7 hoursGEOG 322 Global Climate Systems (4)GEOG 424 or 426Weather (3)■ Technique Requirements 10 hoursGEOG 300 Research (3)GEOG 316 Foundations GIS (4)GEOG 391 Data Analysis (3) ■ General Electives 6 hoursGEOG 122, 222, 310, 325, 328, 414, 420, 424 or 426, 482, 455, 459, 461, 471, GEOL 311, 325Program Total 36 hoursAdditional Requirements: **MATH 116, MATH 183,** and PHY 201 |
| Planning and GIS■ Foundation Requirements 13 hoursGEOG 100 or GEOL 102 Physical (3)GEOG 110 World Regional Geog. (3)GEOG 240 Planning (3) GEOG 475 or 495 Practicum or Research (3) GEOG 499 Professional Development (1)■ Thematic Requirements 10 hoursGEOG 317 GIS (4)GEOG 474 Env. Planning (3)GEOG 484 Advanced Plan (3)■ Technique Requirements 10 hoursGEOG 300 Research (3)GEOG 316 Foundations GIS (4)GEOG 391 Data Analysis (3) ■ General Electives 3 hoursGEOG 350, 360, 414, 416, 417, 419, 423, 451, 477, 480, 487, 488, 497Program Total 36 hoursAdditional Requirements: MATH 118 (or MATH 116 and 117) AMS 163, CIS/CS 226 or CS 230 | Planning and GIS■ Foundation Requirements 13 hoursGEOG 100 or GEOL 102 Physical (3)GEOG 110 World Regional Geog. (3)GEOG 240 Planning (3) GEOG 475 or 495 Practicum or Research (3) GEOG 499 Professional Development (1)**■** Thematic Requirements 10 hoursGEOG 317 GIS (4)GEOG 474 Env. Planning (3)GEOG 484 Advanced Plan (3)■ Technique Requirements 10 hoursGEOG 300 Research (3)GEOG 316 Foundations GIS (4)GEOG 391 Data Analysis (3) **■** General Electives 3 hoursGEOG 350, 360, 414, 416, 417, 419, 423, 451, 477, 480, 487, 488, 497Program Total 36 hoursAdditional Requirements: **MATH 116, MATH 183**, AMS 163, CIS/CS 226 or CS 230 |
| Geography Honors* Program Requirements 30 hours

GEOG 100 (Honors), 110 (Honors), 300, 316, 391, HONS 300, HONS 301, HEEC courses (10 hours), 499* Program Electives 6 hours

HONS 403 Thesis for 6 hours, or 475 or 495* Program Total 36 hours

Additional requirements: MATH 118 (or MATH 116 and MATH 117) and one Ethics course: PHIL 320 or GEOG 444 | Geography Honors* Program Requirements 30 hours

GEOG 100 (Honors), 110 (Honors), 300, 316, 391, HONS 300, HONS 301, HEEC courses (10 hours), 499* Program Electives 6 hours

HONS 403 Thesis for 6 hours, or 475 or 495* Program Total 36 hours

Additional requirements: **MATH 116, MATH 183**, and one Ethics course: PHIL 320 or GEOG 444 |

**4. Rationale for the proposed program changes:**

* MATH183 (Statistics) has been added as a prerequisite for GEOG 391 (Data Analysis). As a result, MATH 117 (Trig) is no longer necessary as an additional requirement for the major (except for the Karst Geoscience concentration, where it is a prerequisite for MATH 136), as MATH 183 is now required. This also eliminates the need to offer MATH 118 as an additional requirement option.

**5. Proposed term for implementation and special provisions (if applicable):** Fall 2012

**6. Dates of prior committee approvals:**

Department of Geography and Geology \_\_\_\_\_\_\_8/18/2011\_\_\_\_

 Ogden Curriculum Committee \_\_\_\_\_\_\_9/1/2011\_\_\_\_\_

 Undergraduate Curriculum Committee \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 University Senate \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Attachment: Program Inventory Form**

Proposal Date: August 18, 2011

**Ogden College of Science and Engineering**

**Department of Geography and Geology**

**Proposal to Revise Program**

**(Action Item)**

Contact Person: **Kevin B. Cary, M.Sc., GISP** e-mail: **kevin.cary@wku.edu** Phone: **5-2981**

**1. Identification of program:**

* 1. Current program reference number: **576**
	2. Current program title: Major in Geographic Information Science
	3. Credit hours: 58

**2. Identification of the proposed program changes:**

* Delete CS 145 and AMS 163 from required foundation courses
* Add GEOL 111 as a Physical course option in the Foundation courses.
* Change title of GEOG 419 to reflect current description.
* Add GEOG 423 as an acceptable substitute for GEOG 477
* Reduce number of required hours from 58 to 52.
* Delete ENG 307 and MATH 136 from required supporting courses.
* Add MATH 183 as a required supporting course.

**3. Detailed program description:**

|  |  |
| --- | --- |
| Current Program  | **Proposed Program**  |
| B.Sc. Geographic Information Science | B.Sc. Geographic Information Science |
| The major in geographic information science (reference number 576) focuses on the concepts and principles of GISystems, along with its four components: (1) input, corrections, and collection of geospatial data; (2) storage and retrieval of geospatial data; (3) manipulation and analysis of geospatial data; and (4) maps and other forms of presentation of geospatial data. The major in geographic information science (reference number 576) requires **a minimum of 58 semester hours** of GIS courses. Foundation Courses (22 hours):CS 145 (Intro to Computers)     3 AMS 163  Architectural Drafting      3GEOG 100 or GEOL 102 Physical 3 GEOG 110 World Regional Geog. 3CS 170 Intro. to Programming    3 GEOG 475 or 495 (Practicum            6 and/or Internship)GEOG 499 Prof. Development 1Technique Requirements (14 hours):GEOG 300 Research Methods          3GEOG 316 Foundations of GIS 4GEOG 317 GIS 4GEOG 391 Data Analysis 3Professional Requirements (22 hours):GEOG 414 Remote Sensing 4 GEOG 417 GIS Analysis     3 GEOG 418 Internet GIS 3 GEOG 419 GIS App. Dev.               3 GEOG 443 GIS Databases 3GEOG 477 GIS Special Topics         3 GEOG 492 Advance Spatial 3Required Support Courses (19.5 – 20.5) (not part of the major hours):CE 160/161 Surveying 4CS 180 Java 3ENG 307 Tech. Writing 3MATH 118 (or 116 + 117)       5 - 6  Algebra and Trig.MATH 136 Calculus I                    4.5 | The major in geographic information science (reference number 576) focuses on the concepts and principles of GISystems, along with its four components: (1) input, corrections, and collection of geospatial data; (2) storage and retrieval of geospatial data; (3) manipulation and analysis of geospatial data; and (4) maps and other forms of presentation of geospatial data. The major in geographic information science (reference number 576) requires **a minimum of 52 semester hours** of GIS courses. **Foundation Courses** **(16 hours)**:**~~CS 145 (Intro to Computers)    3~~** **~~AMS 163 Architectural Drafting 3~~**GEOG 100 or GEOL 102 **or GEOL 111** Physical 3 GEOG 110 World Regional     3CS 170 Intro. to Programming 3 GEOG 475 or 495 (Practicum            6 and/or Internship)GEOG 499 Prof. Development 1Technique Requirements (14 hours):GEOG 300 Research Methods   3GEOG 316 Foundations of GIS 4GEOG 317 GIS 4GEOG 391 Data Analysis 3Professional Requirements (22 hours):GEOG 414 Remote Sensing             4 GEOG 417 GIS Analysis                  3 GEOG 418 Internet GIS     3 **GEOG 419 GIS Programming    3** GEOG 443 GIS Databases 3GEOG 477 GIS Special Topics 3**or GEOG 423 Urban GIS**GEOG 492 Advance Spatial 3**Required Support Courses** **(16 –17)** (not part of the major hours):CE 160/161 Surveying 4CS 180 Computer Science I 4**~~ENG 307 Tech. Writing 3~~**MATH 118 (or 116 + 117)     5 – 6  Algebra and Trig.**~~MATH 136 Calculus I                  4.5~~****MATH 183 Intro to Statistics 3** |
| PROGRAM TOTAL: 58 Hours | **PROGRAM TOTAL: 52 Hours** |

**4. Rationale for the proposed program change:**

* **CS 145** (Intro. to Computing) is not necessary. This is a computer literacy course.
* **AMS 163** (Architectural Drafting) is no longer necessary. This is a CADD-based course introducing the student to CADD software. The GIS industry has migrated largely from CAD(D) software(s), and it is rarely used in professional GIS. Therefore, architectural drafting is no longer a necessary skill for GIS majors.
* The deletion of **CS 145 and AMS 163** from the list of foundation courses **decreases** the overall number of semester hours required to complete the program from 58 to 52.
* The title of **GEOG 419** has been changed to GIS Programming.
* **GEOG 423** (Urban GIS) is added as an acceptable substitute for GEOG 477 (Special Topics), as several students pursue an interest in city and regional planning.
* **ENG 307** (Technical Writing) is no longer needed since both GEOG 417 and GEOG 300 contain writing components that address the concerns of technical writing in GIS.
* **MATH 136** (Calculus I) is not necessary. Calculus is used rarely in the GIS industry or professional GIS.
* **MATH 183** (Intro to Statistics) is added as a required supporting course, as itprovides a statistical foundation for the advanced GIS courses and is a prerequisite for GEOG 391 (Data Analysis).

**5. Proposed term for implementation and special provisions (if applicable):**

* **Term:** Fall 2012

**6. Dates of prior committee approvals:**

Department of Geography and Geology 8/18/2011 \_\_\_\_\_\_\_\_\_\_

Ogden College Curriculum Committee \_\_\_\_\_\_\_\_\_9/1/2011\_\_\_\_\_\_\_\_\_\_\_\_\_

University Curriculum Committee \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

University Senate \_\_\_\_\_\_

**Attachment:** [**Program Inventory Form**](http://www.wku.edu/Dept/Support/AcadAffairs/Registrar/ProgramInventoryForm.doc)