

MEMORANDUM TO: Ogden College of Science and Engineering Curriculum Committee

Dr. Jack Rudolph	Dr. James Gary	Dr. Terry Leeper
Dr. Martin Stone	Dr. Zhonghang Xia	Dr. John Khouryieh
Dr. Bruce Schulte	Dr. Julie Ellis	Dr. Peter Hamburger
Dr. Scott Grubbs	Dr. Warren Campbell	Dr. Keith Andrew
Dr. Cathleen Webb	Dr. David Keeling	Dr. Attila Por
Dr. Hemali Rathnayake	Dr. Fred Siewers	Dr. Alex Barzilov
Dr. David Erbach		

FROM: Andrew Ernest, Chair

SUBJECT: Agenda for Thursday, September 1, 2011, 3:45 p.m. in COHH 4123

A. OLD BUSINESS:

- I. Consideration of the minutes of the May 5, 2011, meeting.

B. NEW BUSINESS:

Consent Items

1. Proposals to Delete a Course
 - a. CE 244, Engineering Statics, 3 hours
 - b. CE 366, Mechanical and Electrical Systems, 3 hours
 - c. CE 466, Contracts and Specifications, 3 hours
 - d. GEOG 197, Human Geography Recitation Laboratory, 1 hour
2. Proposal to Revise Course Prerequisites
 - d. GEOG 391, Data Analysis and Interpretation, 3 hours

Action Items

Department of Engineering

1. Proposal to Revise a Program
 - a. Ref. #361, Minor in Floodplain Management, 21 hours

Department of Geography and Geology

1. Proposal to Revise a Program
 - a. Ref.# 677, Geology: Professional Major, 40 hours
 - b. Ref. #674, Geography, 36
 - c. Ref. #577, Professional Extended Major, 52 hours
 - d. Ref. #576, Major in Geographic Information Science, 58 hours

C. OTHER BUSINESS

MEMBERS PRESENT:

Dr. Cathleen Webb
Dr. Kevin Williams
Dr. Huanjing Wang
Dr. Julie Ellis
Dr. Warren Campbell

Dr. David Keeling
Dr. Laura Leach
Dr. Ferhan Atici
Dr. Keith Andrew
Dr. Mike Carini

Dr. Albert Meier for Dr. Scott Grubbs

Visitors: Dr. Wieb van der Meer and Dr. Vladimir Dobrokhotov

FROM: Andrew Ernest, Chair

OLD BUSINESS:

Keeling/Campbell moved approval of the minutes of the April 7, 2011, meeting. Motion passed.

Department of Physics and Astronomy

Keeling/Campbell moved approval of the proposal to revise course prerequisites/corequisites, PHYS 410, Physics for Teachers. Motion passed.

NEW BUSINESS:

Consent Items

- Proposal to Revise Course Catalog Listing
 - a. CHEM 330, Quantitative Analysis

The consent item was accepted as presented on a Keeling/Andrew motion.

Action Items

Department of Physics and Astronomy

Keeling/Campbell moved approval of the proposal to create a new course, PHYS 350, Clinical Optics. Motion passed.

Keeling/Campbell moved approval of the proposal to create a new course, PHYS 379, Nanotechnology in Biophysics and Medicine. Motion passed.

Keeling/Campbell moved approval of the proposal to revise a minor, Ref. #329, Minor in Biophysics. Motion passed with amendment to add BIOL 495 to the list of electives.

OTHER BUSINESS

Scott Grubbs was elected as the representative to the UCC with Cathleen Webb as the alternate for 2011-2012. There being no other business the meeting was adjourned.

Proposal Date: 5/5/2011

**Ogden College of Science and Engineering
Department of Engineering
Proposal to Delete a Course
(Consent Item)**

Contact Person: Shane Palmquist, shane.palmquist@wku.edu, 745-2919

1. Identification of course:

- 1.1 Current course prefix (subject area) and number: CE 244
- 1.2 Course title: Engineering Statics
- 1.3 Credit hours: 3

2. Rationale for the course deletion:

This course has not been offered in many years. Civil engineering students take EM 221 (UK Statics) or EM 222 (WKU Statics) instead.

3. Effect of course deletion on programs or other departments, if known: None

4. Proposed term for implementation: Fall 2012

5. Dates of prior committee approvals:

Department of Engineering: 5/11/11

Ogden Curriculum Committee _____

Undergraduate Curriculum Committee _____

University Senate _____

Attachment: Course Inventory Form

Proposal Date: 5/5/2011

**Ogden College of Science and Engineering
Department of Engineering
Proposal to Delete a Course
(Consent Item)**

Contact Person: Shane Palmquist, shane.palmquist@wku.edu, 745-2919

1. Identification of course:

- 1.1 Current course prefix (subject area) and number: CE 366
- 1.2 Course title: Mechanical and Electrical Systems
- 1.3 Credit hours: 3

2. Rationale for the course deletion:

This course has not been offered in many years, and there are no plans to offer this course in the future.

3. Effect of course deletion on programs or other departments, if known: None

4. Proposed term for implementation: Fall 2012

5. Dates of prior committee approvals:

Department of Engineering: 5/11/11

Ogden Curriculum Committee _____

Undergraduate Curriculum Committee _____

University Senate _____

Attachment: Course Inventory Form

Proposal Date: 5/5/2011

**Ogden College of Science and Engineering
Department of Engineering
Proposal to Delete a Course
(Consent Item)**

Contact Person: Shane Palmquist, shane.palmquist@wku.edu, 745-2919

1. Identification of course:

- 1.1 Current course prefix (subject area) and number: CE 466
- 1.2 Course title: Contracts and Specifications
- 1.3 Credit hours: 3

2. Rationale for the course deletion:

This course has not been offered in many years, and there are no plans to offer this course in the future.

3. Effect of course deletion on programs or other departments, if known: None

4. Proposed term for implementation: Fall 2012

5. Dates of prior committee approvals:

Department of Engineering: _____ 5/11/11

Ogden Curriculum Committee _____

Undergraduate Curriculum Committee _____

University Senate _____

Attachment: Course Inventory Form

Proposal Date: August 18, 2011

**Ogden College
Department of Geography and Geology
Proposal to Delete a Course
(Consent Item)**

Contact Person: Katie Algeo, Katie.algeo@wku.edu, 745-5922

1. Identification of course:

- 1.1 Current course prefix (subject area) and number: GEOG 197
- 1.2 Course title: Human Geography Recitation Laboratory
- 1.3 Credit hours: 1

2. Rationale for the course deletion: This course was linked to GEOG 101, Introduction to Cultural Geography, which has been deleted. Accordingly, there is no need for this course to remain in the inventory.

3. Effect of course deletion on programs or other departments, if known: No known effects.

4. Proposed term for implementation: Fall 2012

5. Dates of prior committee approvals:

Geography and Geology Department _____8/18/2011_____

Ogden Curriculum Committee _____

Undergraduate Curriculum Committee _____

University Senate _____

Attachment: Course Inventory Form

Proposal Date: 8/18/2011

**Ogden College of Science and Engineering
Department of Geography and Geology
Proposal to Revise Course Prerequisites
(Consent Item)**

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

- 1. Identification of course:**
 - 1.1 Course prefix (subject area) and number: GEOG 391
 - 1.2 Course title: Data Analysis and Interpretation
 - 1.3 Credit hours: 3

- 2. Current prerequisites: GEOG 100, GEOG 110, and MATH 116 or higher**

- 3. Proposed prerequisites: GEOG 100 or GEOL 102, GEOG 110, MATH 116 or higher, and MATH 183 (Statistics), or permission of the instructor.**

- 4. Rationale for the revision of prerequisites:**
 - **GEOL 102 (Intro Geology) is an introductory earth science course accepted as a substitute for GEOG 100 (Physical Geography) in all of the department's programs.**
 - **MATH 183 provides an introduction to descriptive statistics and elementary probability theory, which would enable GEOG 391 instructors to focus more attention on spatial statistics and the more advanced qualities of inferential statistics.**

- 5. Effect on completion of major/minor sequence: None**

- 6. Proposed term for implementation: Fall 2012**

- 7. Dates of prior committee approvals:**

Department of Geography and Geology:	_____8/18/2011_____
Ogden College Curriculum Committee	_____
Undergraduate Curriculum Committee	_____
University Senate	_____

Attachment: Course Inventory Form

Proposal Date: July 20, 2011

**Ogden College of Science and Engineering
Department of Engineering
Proposal to Revise A Program
(Action Item)**

Contact Person: Warren Campbell, warren.campbell@wku.edu, 5-8988

1. Identification of program:

- 1.1 Current program reference number: 361
- 1.2 Current program title: Minor in Floodplain Management
- 1.3 Credit hours: 21

2. Identification of the proposed program changes:

- Modification of two required courses
- Addition of one new course as an elective for the minor

3. Detailed program description:

Current Program		Revised	
Required Courses	Credit	Required Courses (Revised)	Credits
CE 160/161 Fundamentals of Surveying and Lab	4	CE 160/161 Principles of Surveying and Lab	4
CE 300 Floodplain Management	3	CE 300 Floodplain Management or	3
		CE/GEOG/GEOL 475 Selected Topics - Floodplain Management	3
GEOG 318 GIS for Engineers	3	GEOG 317 Geographic Information Systems or GEOG 318 GIS for Engineers	3
CE 461 or GEOG/GEOL 310 Hydrology	3	CE 461 or GEOG/GEOL 310 Hydrology	3
Elective Courses			
Elective Courses		Elective Courses	
GEOG 121 Meteorology	3	GEOG 121 Meteorology	3
GEOG 207 Hurricanes	1	GEOG 207 Hurricanes	1
GEOG 208 Floods and Droughts	1	GEOG 208 Floods and Droughts	1
GEOG 209 Natural Disasters	1	GEOG 209/GEOL 209C Natural Disasters	1
		GEOG 240 Intro to Planning	3
GEOG 391 Data Analysis and Interpretation	3	GEOG 391 Data Analysis and Interpretation	3
GEOG 414 Intro to Remote Sensing	4	GEOG 414 Remote Sensing Fundamentals	4
GEOG 416 Remote Sensing	3	GEOG 416 Remote Sensing	3
GEOG 417 GIS Analysis and Modeling	3	GEOG 417 GIS Analysis and Modeling	3
Geog 419 GIS Application Development	3	Geog 419 GIS Application Development	3
GEOG/GEOL 420 Geomorphology	4	GEOG/GEOL 420 Geomorphology	4
GEOG 422 Physical Climatology	4	GEOG 422 Physical Climatology	4
GEOG 424 Weather Analysis and Forecasting	3	GEOG 424 Weather Analysis and Forecasting	3
GEOG 426 Applied Meteorology/Climatology	3	GEOG 426 Applied Meteorology/Climatology	3
GEOG 427 Water Resources	3	GEOG 427 Water Resources	3
GEOG 431 Dynamic Meteorology	3	GEOG 431 Dynamic Meteorology	3
		GEOL 440 Hydrogeology	3
GEOL 445 Aqueous Geochemistry	3	GEOL 445 Aqueous Geochemistry	3
GEOG 455 Global Environmental Change	3	GEOG 455 Global Environmental Change	3

Current Program		Revised Program	
Required Courses	Credit	Required Courses (Revised)	Credits
GEOG 474 Environmental Planning	3	GEOG 474 Environmental Planning	3
GEOG 477 Special Topics in GIS	3	GEOG 477 Special Topics in GIS	3
CE 351 Intro to Environmental Engineering	3	CE 351 Intro to Environmental Engineering	3
CE 378/379 Boundary Surveying and Lab	4	CE 378/379 Route Surveying and Lab	4
CE 380/381 Boundary Surveying and Lab	4	CE 380/381 Boundary Surveying and Lab	4
CE 462 Hydraulic Engineering Systems	3	CE 462 Hydraulic Engineering Systems	3

4. Rationale for the proposed program change:

In the table, green cells represent a name change only and reflect changes in catalog names. Items in blue cells are more significant changes. The change in required courses from CE 300 to CE 300 or CE/GEOG/GEOL 475 allows more flexibility in the program. CE 300 focuses on national floodplain regulations and is geared toward helping students pass the national certification exam for floodplain managers. CE/GEOG/GEOL 475 is a selected topics class that can be offered as a floodplain practicum that is more scientifically based and allows interaction with floodplain professionals. The floodplain version is being developed as a Study Away course. Another reason for this change is that the National Certification Board for Floodplain Managers may add an experience requirement for certification. If this occurs, the benefit of CE 300 would be reduced because students could not obtain certification by simply passing an exam. Because of this, the requirement for a more scientifically based course would be increased.

The change in the required GIS course recognizes that few students register for GEOG 318, so this course has not been offered in the past two years. GIS 317 covers the same basic material as GEOG 318. This change will likely increase the number of students seeking the minor.

GEOG 240 Planning is being added in response to suggestions by the floodplain management community. One of the best ways to reduce flood losses is to keep people from building in the floodplain. This approach falls into the realm of urban planning.

GEOL 440 Hydrogeology was added because it deals with groundwater. In Bowling Green most of our flooding problems are associated with sinkhole flooding. For example, the Unitarian Church flooded in March 2010. The worst flooding occurred 24 to 48 hours after rain stopped. Only 40 acres drain directly to the sinkhole where the church is located. Surface runoff here would peak in less than 1 hour. However, Lost River below drains an area of 70 square miles. Most of the flooding came from below, that is, from groundwater.

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

6. Dates of prior committee approvals:

Engineering Department/Division:	<u>August 23, 2011</u>
Ogden College Curriculum Committee	_____
Professional Education Council (if applicable)	<u>N/A</u>
General Education Committee (if applicable)	<u>N/A</u>
Undergraduate Curriculum Committee	_____

University Senate



Attachment: Program Inventory Form

**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:

- 1.1 Current program reference number: 677
- 1.2 Current program title: Geology: Professional Major
- 1.3 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
<u>Core Required Courses</u>	<u>20</u>	<u>Core Required Courses</u>	<u>20</u>
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
<u>Additional Required Courses</u>	<u>20</u>	<u>Additional Required Courses</u>	<u>20</u>
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
<u>Program Hours</u>	<u>40</u>	<u>Program Hours</u>	<u>40</u>
<u>Other Requirements</u>	<u>6</u>	<u>Other Requirements</u>	<u>6</u>
Geology Field Camp	6	Geology Field Camp	6
or		or	
GIS Certificate	6	GIS Certificate	6
<u>Requirements outside Geology</u>	<u>31.5</u>	<u>Requirements outside Geology</u>	<u>28</u>
MATH 136 Calculus I	4.5	MATH 136 Calculus I	4

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:

- 1.1 Current program reference number: 674
- 1.2 Current program title: Geography
- 1.3 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:

<p>Karst Geoscience</p> <p>■ Foundation Requirements 13 hours</p> <p>GEOG 100 or GEOL 102 or GEOL 111 Physical Geo. (3)</p> <p>GEOG 110 World Regional Geog. (3)</p> <p>GEOG 280 Environmental Science (3)</p> <p>GEOG 475 Mammoth Cave Karst (3) (Summer Field Course)</p> <p>GEOG 499 Professional Development (1)</p> <p>■ Thematic Requirements 9-10 hours</p> <p>GEOG 310 Hydrology (3)</p> <p>OR</p> <p>GEOG 459 Physical Hydrology (3)</p> <p>GEOG 461 Karst Environments (3)</p> <p>GEOG 420 Geomorphology (4)</p> <p>OR</p> <p>GEOG 475 Mammoth Cave Karst (3) (Summer Field Course)</p> <p>■ Technique Requirements 10 hours</p> <p>GEOG 300 Research (3)</p> <p>GEOG 316 Foundations GIS (4)</p> <p>GEOG 391 Data Analysis (3)</p> <p>■ Approved Electives 3-4 hours</p>	<p>Karst Geoscience</p> <p>■ Foundation Requirements 13 hours</p> <p>GEOG 100 or GEOL 102 or GEOL 111 Physical Geo. (3)</p> <p>GEOG 110 World Regional Geog. (3)</p> <p>GEOG 280 Environmental Science (3)</p> <p>GEOG 475 Mammoth Cave Karst (3) (Summer Field Course)</p> <p>GEOG 499 Professional Development (1)</p> <p>■ Thematic Requirements 9-10 hours</p> <p>GEOG 310 Hydrology (3)</p> <p>OR</p> <p>GEOG 459 Physical Hydrology (3)</p> <p>GEOG 461 Karst Environments (3)</p> <p>GEOG 420 Geomorphology (4)</p> <p>OR</p> <p>GEOG 475 Mammoth Cave Karst (3) (Summer Field Course)</p> <p>■ Technique Requirements 10 hours</p> <p>GEOG 300 Research (3)</p> <p>GEOG 316 Foundations GIS (4)</p> <p>GEOG 391 Data Analysis (3)</p> <p>■ Approved Electives 3-4 hours</p>
---	---

<p>GEOG 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)</p> <p>Program Total 36 hours Additional requirements: MATH 136, CHEM 120, and BIOL 120 OR PHYS 201</p>	<p>GEOG 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)</p> <p>Program Total 36 hours Additional requirements: MATH 136, MATH 183, CHEM 120, and BIOL 120 OR PHYS 201</p>
<p>Cultural Geography</p> <p>■ Foundation Requirements 14 hours GEOG 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)</p> <p>■ Regional Requirements 6 hours Choose 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)</p> <p>■ Thematic Requirements 6 hours Choose two courses from: GEOG 350 Economic (3) GEOG 378 Food & Culture (3) GEOG 480 Urban (3) GEOG 481 Tourism (3)</p> <p>■ Technique Requirements 10 hours GEOG 300 Research (3)</p>	<p>Cultural Geography</p> <p>■ Foundation Requirements 14 hours GEOG 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)</p> <p>■ Regional Requirements 6 hours Choose 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)</p> <p>■ Thematic Requirements 6 hours Choose two courses from: GEOG 350 Economic (3) GEOG 378 Food & Culture (3) GEOG 480 Urban (3) GEOG 481 Tourism (3)</p> <p>■ Technique Requirements 10 hours GEOG 300 Research (3)</p>

<p>GEOG 316 Foundations GIS (4) GEOG 391 Data Analysis (3)</p> <p>Program Total 36 hours Additional requirement: MATH 118 (or MATH 116 and MATH 117)</p>	<p>GEOG 316 Foundations GIS (4) GEOG 391 Data Analysis (3)</p> <p>Program Total 36 hours • Additional requirements: MATH 116 (Algebra) and MATH 183 (Statistics)</p>
<p>Environmental Planning and Resource Management</p> <ul style="list-style-type: none"> ■ Foundation Requirements 13 hours GEOG 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 hours GEOG 328 Biogeography (3) GEOG 471 Natural Resources (3) GEOG 474 Env. Planning (3) ■ Technique Requirements 10 hours GEOG 300 Research (3) GEOG 316 Foundations GIS (4) GEOG 391 Data Analysis (3) ■ General Electives 4 hours GEOG 208, 209, 310, 317, 350, 380, 414, 417, 419, 444, 452, 455, 459, 461, 487, GEOL 415 <p>Program Total 36 hours Additional requirements: MATH 118 (or MATH 116 and MATH 117) and one Ethics course: PHIL 320 or GEOG 440</p>	<p>Environmental Planning and Resource Management</p> <ul style="list-style-type: none"> ■ Foundation Requirements 13 hours GEOG 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 hours GEOG 328 Biogeography (3) GEOG 471 Natural Resources (3) GEOG 474 Env. Planning (3) ■ Technique Requirements 10 hours GEOG 300 Research (3) GEOG 316 Foundations GIS (4) GEOG 391 Data Analysis (3) ■ General Electives 4 hours GEOG 208, 209, 310, 317, 350, 380, 414, 417, 419, 444, 452, 455, 459, 461, 487, GEOL 415 <p>Program Total 36 hours Additional requirements: MATH 116 and MATH 183, and one Ethics course: PHIL 320 or GEOG 440</p>
<p>Land, Weather, and Climate</p> <ul style="list-style-type: none"> ■ Foundation Requirements 13 hours GEOG 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 hours GEOG 322 Global Climate Systems (4) GEOG 424 or 426 Weather (3) ■ Technique Requirements 10 hours GEOG 300 Research (3) GEOG 316 Foundations GIS (4) GEOG 391 Data Analysis (3) 	<p>Land, Weather, and Climate</p> <ul style="list-style-type: none"> ■ Foundation Requirements 13 hours GEOG 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 hours GEOG 322 Global Climate Systems (4) GEOG 424 or 426 Weather (3) ■ Technique Requirements 10 hours GEOG 300 Research (3) GEOG 316 Foundations GIS (4) GEOG 391 Data Analysis (3)

<p>■ General Electives 6 hours GEOG 122, 222, 310, 325, 328, 414, 420, 424 or 426, 482, 455, 459, 461, 471, GEOL 311, 325</p> <p>Program Total 36 hours Additional Requirements: MATH 118 (or 116/117), PHY 201</p>	<p>■ General Electives 6 hours GEOG 122, 222, 310, 325, 328, 414, 420, 424 or 426, 482, 455, 459, 461, 471, GEOL 311, 325</p> <p>Program Total 36 hours Additional Requirements: MATH 116, MATH 183, and PHY 201</p>
<p>Planning and GIS</p> <p>■ Foundation Requirements 13 hours GEOG 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)</p> <p>■ Thematic Requirements 10 hours GEOG 317 GIS (4) GEOG 474 Env. Planning (3) GEOG 484 Advanced Plan (3)</p> <p>■ Technique Requirements 10 hours GEOG 300 Research (3) GEOG 316 Foundations GIS (4) GEOG 391 Data Analysis (3)</p> <p>■ General Electives 3 hours GEOG 350, 360, 414, 416, 417, 419, 423, 451, 477, 480, 487, 488, 497</p> <p>Program Total 36 hours Additional Requirements: MATH 118 (or MATH 116 and 117) AMS 163, CIS/CS 226 or CS 230</p>	<p>Planning and GIS</p> <p>■ Foundation Requirements 13 hours GEOG 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)</p> <p>■ Thematic Requirements 10 hours GEOG 317 GIS (4) GEOG 474 Env. Planning (3) GEOG 484 Advanced Plan (3)</p> <p>■ Technique Requirements 10 hours GEOG 300 Research (3) GEOG 316 Foundations GIS (4) GEOG 391 Data Analysis (3)</p> <p>■ General Electives 3 hours GEOG 350, 360, 414, 416, 417, 419, 423, 451, 477, 480, 487, 488, 497</p> <p>Program Total 36 hours Additional Requirements: MATH 116, MATH 183, AMS 163, CIS/CS 226 or CS 230</p>
<p>Geography Honors</p> <ul style="list-style-type: none"> • 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 440 	<p>Geography Honors</p> <ul style="list-style-type: none"> • 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 440

4. Rationale for the proposed program changes:

- MATH 183 (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 _____

Undergraduate Curriculum Committee _____

University Senate _____

Attachment: Program Inventory Form

**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:

- 1.1 Current program reference number: 577
- 1.2 Current program title: Geology: Professional Extended Major
- 1.3 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
<u>Core Required Courses</u>	<u>20</u>	<u>Core Required Courses</u>	<u>20</u>
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
<u>Additional Required Courses</u>	<u>32</u>	<u>Additional Required Courses</u>	<u>32</u>
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
<u>Program Hours</u>	<u>52</u>	<u>Program Hours</u>	<u>52</u>
<u>Other Requirements</u>	<u>6</u>	<u>Other Requirements</u>	<u>6</u>
Geology Field Camp	6	Geology Field Camp	6
or		or	

GIS Certificate	6	GIS Certificate	6
<u>Requirements outside Geology</u>	<u>31.5</u>	<u>Requirements outside Geology</u>	<u>28</u>
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 _____

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:

- 1.1 Current program reference number: **576**
- 1.2 Current program title: Major in Geographic Information Science
- 1.3 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.	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.
<u>Foundation Courses (22 hours):</u>	<u>Foundation Courses (16 hours):</u>
CS 145 (Intro to Computers) 3	CS 145 (Intro to Computers) 3
AMS 163 Architectural Drafting 3	AMS 163 Architectural Drafting 3
GEOG 100 or GEOL 102 Physical 3	GEOG 100 or GEOL 102

GEOG 110 World Regional Geog.	3	or GEOL 111 Physical	3
CS 170 Intro. to Programming	3	GEOG 110 World Regional	3
GEOG 475 or 495 (Practicum and/or Internship)	6	CS 170 Intro. to Programming	3
GEOG 499 Prof. Development	1	GEOG 475 or 495 (Practicum and/or Internship)	6
		GEOG 499 Prof. Development	1
<u>Technique Requirements (14 hours):</u>		<u>Technique Requirements (14 hours):</u>	
GEOG 300 Research Methods	3	GEOG 300 Research Methods	3
GEOG 316 Foundations of GIS	4	GEOG 316 Foundations of GIS	4
GEOG 317 GIS	4	GEOG 317 GIS	4
GEOG 391 Data Analysis	3	GEOG 391 Data Analysis	3
<u>Professional Requirements (22 hours):</u>		<u>Professional Requirements (22 hours):</u>	
GEOG 414 Remote Sensing	4	GEOG 414 Remote Sensing	4
GEOG 417 GIS Analysis	3	GEOG 417 GIS Analysis	3
GEOG 418 Internet GIS	3	GEOG 418 Internet GIS	3
GEOG 419 GIS App. Dev.	3	GEOG 419 GIS Programming	3
GEOG 443 GIS Databases	3	GEOG 443 GIS Databases	3
GEOG 477 GIS Special Topics	3	GEOG 477 GIS Special Topics	3
GEOG 492 Advance Spatial	3	or GEOG 423 Urban GIS	
		GEOG 492 Advance Spatial	3
<u>Required Support Courses (19.5 – 20.5)</u> (not part of the major hours):		<u>Required Support Courses (15 –16)</u> (not part of the major hours):	
CE 160/161 Surveying	4	CE 160/161 Surveying	4
CS 180 Java	3	CS 180 Java	3
ENG 307 Tech. Writing	3	ENG 307 Tech. Writing	3
MATH 118 (or 116 + 117) Algebra and Trig.	5 - 6	MATH 118 (or 116 + 117) Algebra and Trig.	5 – 6
MATH 136 Calculus I	4.5	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 it provides 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	<u>8/18/2011</u>
Ogden College Curriculum Committee	_____
University Curriculum Committee	_____
University Senate	_____

Attachment: [Program Inventory Form](#)