

**MEMORANDUM TO:** Ogden College of Science and Engineering Curriculum Committee

Dr. Jack Rudolph	Dr. James Gary	Dr. Keith Andrew
Dr. Martin Stone	Dr. Huanjing Wang	Dr. Kelly Madole
Dr. Greg Arbuckle	Dr. Julie Ellis	Dr. Steve Haggbloom
Dr. John Khouryieh	Dr. Warren Campbell	Dr. Les Pesterfield
Dr. Bruce Schulte	Dr. David Keeling	
Dr. Phil Lienesch	Dr. Xingang Fan	
Dr. Cathleen Webb	Dr. Bruce Kessler	
Dr. Hemali Rathnayake	Dr. Richard Schugart	

**FROM:** Kenneth Crawford, Chair

**SUBJECT:** Agenda for Thursday, September 4, 2014, 4:00 p.m. in COHH 4123

**A. OLD BUSINESS:**

- I. Consideration of the minutes of the May 1, 2014 meeting.

**B. NEW BUSINESS:**

**Information Items**

**Department of Agriculture**

- I. Proposal to Create a New Course
  - a. AGRI 323, Wine Fundamentals, 3 hrs.

**Consent Items**

**Department of Architectural Manufacturing Sciences**

- I. Proposal to Delete a Course
  - a. AMS 105, Survey of Drafting, 3 hrs.
  - b. AMS 213, Electrical Drafting, 3 hrs.
  - c. AMS 391, Reliability and Probability, 3 hrs.
  - d. AMS 392, Quality Management, 3 hrs.
  - e. IT 302, Industrial Statistics, 3 hrs.
- II. Proposal to Suspend a Course
  - a. AMS 465, Industrial Tech for Elementary Teachers, 3 hrs.
  - b. CM 361, Computer Applications in CM, 3 hrs.
- III. Proposal to Delete a Program
  - a. Ref. 207, Architectural Drafting Technology, 45 hrs.
  - a. Ref. 257, Manufacturing Technology, 45 hrs.

**Department of Computer Science**

- I. Proposal to Suspend a Course

- a. CS 225, Computer science Systems Hardware & Software, 4 hrs.
- II. Proposal to Delete a Course
  - a. CS 226, Introduction to Visual Programming, 3 hrs.
- II. Proposal to Revise Course Prerequisites/CoRequisites
  - a. CS 280, Computer Science III, 3 hrs.
  - b. CS 389, Practicum in Computer Science, 1-4 hrs.

### **Action Items**

#### **Department of Architectural and Manufacturing Sciences**

- I. Proposal to Create a New Course
  - a. AMS 101, Introductory Research, 1-6 hours.

#### **Department of Computer Science**

- I. Proposal to Make Multiple Revisions to a Course
  - a. CS 299, Intro to Research in Computer Science, 3 hrs.

#### **Department of Geography & Geology**

- I. Proposal to Revise a Program
  - a. Ref. 363, Minor in Environmental Studies, 25 hrs.
  - b. Ref. 366, Minor in Geographic Information Systems, 23 hrs.
  - c. Ref. 475, Minor in Sustainability, 21 hrs.
  - d. Ref. 491, Minor in Water Resources, 22 hrs.
  - e. Ref. 576, Major in Geographic Information Science, 52 hrs.

### **C. OTHER BUSINESS**

**MEMBERS PRESENT:**

Dr. Phil Linesch  
Dr. Les Pesterfield  
Dr. James Gary  
Dr. Rong Yang  
Dr. Julie Ellis  
Dr. Warren Campbell

Dr. David Keeling  
Dr. Xingang Fan  
Dr. Bryan Reaka for Greg Arbuckle  
Dr. John Khouryieh  
Dr. Richard Schugart  
Dr. Matthew Shake

**FROM:** Ken Crawford, Chair

**OLD BUSINESS:**

Minor correction to April 3, 2014 minutes – scratch Phil Linesch from list of members present. Keeling/Pesterfield moved approval of the minutes from the April 3, 2014 meeting. Motion passed.

**NEW BUSINESS:**

**Consent Agenda**

All consent items were passed as presented on a Keeling/Campbell motion.

**Action Agenda**

**Department of Architectural and Manufacturing Science**

Arbuckle/Campbell moved to bundle and approve items A & B. Motion passed.

**Department of Physics & Astronomy**

Keeling/Campbell moved to table proposal to create a new course, PHYS 425. Proposal tabled.

**OTHER BUSINESS:**

No other business. Meeting was adjourned at 4:08 p.m.

Proposal Date: August 21, 2014

**Ogden College of Science and Engineering**  
**Department of Agriculture**  
**Proposal to Create a New Course**  
**(Action Item)**

Contact Person: Todd Willian, [todd.willian@wku.edu](mailto:todd.willian@wku.edu), 745-5969

**1. Identification of proposed course:**

- 1.1 Course prefix (subject area) and number: AGRI 323
- 1.2 Course title: Wine Fundamentals
- 1.3 Abbreviated course title: Wine Fundamentals
- 1.4 Credit hours: 3 Variable credit (yes or no) No
- 1.5 Grade type: Standard letter grade
- 1.6 Prerequisites/corequisites: None
- 1.7 Course description: Agricultural and historical origins of wine, including important grape varieties and principles of fermentation. Major wine-producing regions and fundamentals of wine marketing are also explored.

**2. Rationale:**

- 2.1 Reason for developing the proposed course: This course complements the educational experience from the vineyard (HORT 426) to include the winemaking process. This course will integrate well into future Certificate Programs in Viticulture and Enology and in Alcohol Studies. Moreover, wine production is currently a growing agribusiness in the Commonwealth; licensed wineries have increased four-fold in the past 15 years.
- 2.2 Projected enrollment in the proposed course:  
Approximately 20 per semester based upon enrollment in two previous temporary course offerings. A majority of the temporary course enrollments have been students from outside the Department of Agriculture.
- 2.3 Relationship of the proposed course to courses now offered by the department:  
The proposed course will supplement Viticulture (HORT 426), which explores grape production techniques in detail, thus completing the grape/wine linkage.
- 2.4 Relationship of the proposed course to courses offered in other departments:  
The Department of History offers HIST 341 (A Cultural History of Alcohol) and Geology/Geography has offered GEOG 475 (Geography of Wine). Both courses complement rather than duplicate AGRI 323 topics. Historical and geographical perspectives are components of the learning objectives of AGRI 323 but are not inclusive of the broad scope of the course.
- 2.5 Relationship of the proposed course to courses offered in other institutions:  
Many institutions offer similar courses. Comparable courses include: HORT 59000 – Commercial Grape and Wine Production, Purdue University; GEN 300 – Wine Appreciation, University of Kentucky; and HADM 4300 - Introduction to Wines, Cornell University.

### **3. Discussion of proposed course:**

3.1 Schedule type: L - Lecture

3.2 Learning Outcomes: Upon completion of this course students will have gained:

- An historical overview of global and domestic wine production.
- Theoretical and hands-on experiences with various stages of wine production, including the process of fermentation.
- Recognition of the importance of wine in national and international economies.
- An overview of important wine varieties and their primary geographical centers of production.
- Understanding of the fundamentals of wine sales, including branding, marketing, importation, and distribution.

3.3 Content outline:

- The history of wine and winemaking
- The geography of wine and winegrape varieties
- Winemaking styles and strategies
- Interpreting wine labels
- The processes of fermentation and malolactic fermentation
- The influence of geological formations upon wine chemistry and taste
- Wine branding and marketing
- Wine importation and distribution
- The Kentucky wine industry
- Selecting wine at a retail outlet and at a restaurant

3.4 Student expectations and requirements:

Assigned readings, examinations and quizzes, and writing assignments. Individual and/or group presentations may be assigned.

3.5 Tentative texts and course materials:

Zraly, K. (2009). *Windows on the World Complete Wine Course*. Sterling Press, 338 p.

Robinson, J. (2006). *The Oxford Companion to Wine*, 3<sup>rd</sup> edition. Oxford University Press, 840 p.

### **4. Resources:**

4.1 Library resources: See attached Library Resource Form and Bibliography

4.2 Computer resources: Adequate

### **5. Budget implications:**

5.1 Proposed method of staffing: Full time faculty.

5.2 Special equipment needed: None.

5.3 Expendable materials needed: None.

5.4 Laboratory materials needed: None.

**6. Proposed term for implementation: Spring 2015**

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

Department of Agriculture

March 6, 2014

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OCSE Curriculum Committee

April 3, 2014

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NA

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NA

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Undergraduate Curriculum Committee

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University Senate

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Proposal Date:

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

Contact Person: Dr. Greg Arbuckle    Email: [greg.arbuckle@wku.edu](mailto:greg.arbuckle@wku.edu)    Phone: 270-745-2403

**1. Identification of course:**

- 1.1 Current course prefix (subject area) and number: AMS 105
- 1.2 Course title: Survey of Drafting

**2. Rationale for the course deletion:**

**3. Effect of course deletion on programs or other departments, if known:**

**4. Proposed term for implementation: 2014-2015**

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

Architecture and Manufacturing Sciences Department

OCSE Curriculum Committee

Professional Education Council (if applicable)

General Education Committee (if applicable)

Undergraduate Curriculum Committee

University Senate

8-18-14

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Proposal Date:

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

Contact Person: Dr. Greg Arbuckle    Email: [greg.arbuckle@wku.edu](mailto:greg.arbuckle@wku.edu)    Phone: 270-745-2403

1.    **Identification of course:**
  - 1.1    Current course prefix (subject area) and number: AMS 213
  - 1.2    Course title: Electrical Drafting
2.    **Rationale for the course deletion:**
3.    **Effect of course deletion on programs or other departments, if known:**
4.    **Proposed term for implementation:** 2014-2015
5.    **Dates of prior committee approvals:**

Architecture and Manufacturing Sciences Department

OCSE Curriculum Committee

Professional Education Council (if applicable)

General Education Committee (if applicable)

Undergraduate Curriculum Committee

University Senate

8-18-14

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Proposal Date:

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

Contact Person: Dr. Greg Arbuckle    Email: [greg.arbuckle@wku.edu](mailto:greg.arbuckle@wku.edu)    Phone: 270-745-2403

1.    **Identification of course:**
  - 1.1    Current course prefix (subject area) and number: AMS 391
  - 1.2    Course title: Reliability and Probability
  
2.    **Rationale for the course deletion:**
  
3.    **Effect of course deletion on programs or other departments, if known:**
  
4.    **Proposed term for implementation:** 2014-2015
  
5.    **Dates of prior committee approvals:**

Architecture and Manufacturing Sciences Department

OCSE Curriculum Committee

Professional Education Council (if applicable)

General Education Committee (if applicable)

Undergraduate Curriculum Committee

University Senate

8-18-14

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Proposal Date:

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

Contact Person: Dr. Greg Arbuckle    Email: [greg.arbuckle@wku.edu](mailto:greg.arbuckle@wku.edu)    Phone: 270-745-2403

- 1. Identification of course:**
  - 1.1 Current course prefix (subject area) and number: AMS 392
  - 1.2 Course title: Quality Management
- 2. Rationale for the course deletion:**
- 3. Effect of course deletion on programs or other departments, if known:**
- 4. Proposed term for implementation:** 2014-2015
- 5. Dates of prior committee approvals:**

Architecture and Manufacturing Sciences Department

OCSE Curriculum Committee

Professional Education Council (if applicable)

General Education Committee (if applicable)

Undergraduate Curriculum Committee

University Senate

8-18-14

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Proposal Date:

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

Contact Person: Dr. Greg Arbuckle    Email: [greg.arbuckle@wku.edu](mailto:greg.arbuckle@wku.edu)    Phone: 270-745-2403

**1. Identification of course:**

- 1.1 Current course prefix (subject area) and number: IT 301
- 1.2 Course title: Industrial Statistics

**2. Rationale for the course deletion:**

**3. Effect of course deletion on programs or other departments, if known:**

**4. Proposed term for implementation: 2014-2015**

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

Architecture and Manufacturing Sciences Department

OCSE Curriculum Committee

Professional Education Council (if applicable)

General Education Committee (if applicable)

Undergraduate Curriculum Committee

University Senate

8-18-14

Proposal Date:

**Ogden College of Science and Engineering  
Architecture and Manufacturing Sciences  
Proposal to Suspend a Course  
(Consent Item)**

Contact Person: Dr. Greg Arbuckle Email:[greg.arbuckle@wku.edu](mailto:greg.arbuckle@wku.edu) Phone: 270-745-2403

**1. Identification of course:**

- 1.1 Current course prefix (subject area) and number: AMS 465
- 1.2 Course title: Industrial Tech For Elem Tchrs

**2. Rationale for the course suspension:**

**3. Effect of course suspension on programs or other departments, if known:**

**4. Proposed term for implementation: 2014 -2015**

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

Architecture and Manufacturing Sciences Department

8-18-14

OCSE Curriculum Committee

Professional Education Council (if applicable)

General Education Committee (if applicable)

Undergraduate Curriculum Committee

University Senate

Proposal Date:

**Ogden College of Science and Engineering  
Architecture and Manufacturing Sciences  
Proposal to Suspend a Course  
(Consent Item)**

Contact Person: Dr. Greg Arbuckle Email: [greg.arbuckle@wku.edu](mailto:greg.arbuckle@wku.edu) Phone: 270-745-2403

**1. Identification of course:**

- 1.1 Current course prefix (subject area) and number: CM 361
- 1.2 Course title: Computer Applications In CM

**2. Rationale for the course suspension:**

**3. Effect of course suspension on programs or other departments, if known:**

**4. Proposed term for implementation: 2014 -2015**

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

Architecture and Manufacturing Sciences Department

OCSE Curriculum Committee

Professional Education Council (if applicable)

General Education Committee (if applicable)

Undergraduate Curriculum Committee

University Senate

8-18-14

Proposal Date: August 6, 2014

**Ogden College  
Architectural and Manufacturing Science Department  
Proposal to Delete a Program  
(Consent Item)**

Contact Person: Dr. Greg Arbuckle, [greg.arbuckle@wku.edu](mailto:greg.arbuckle@wku.edu), 270-745-2403

**1. Identification of program:**

- 1.1 Program reference number: 207
- 1.2 Program title: Architectural Drafting Technology
- 1.3 Credit hours: 45

**2. Rationale for the program deletion:**

This program on average has less than 5 students per year with no more than two graduates per year over the past five years.

**3. Effect on current students or other departments, if known:** Students who are currently in the program will be allowed to complete the program as all of the courses are offered for the BS program.

**4. Proposed term for implementation:** Fall 2015

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

Architectural and Manufacturing Science Department

OCSE Curriculum Committee

Professional Education Council (if applicable)

Undergraduate Curriculum Committee

University Senate

8-18-14

Proposal Date: August 6, 2014

**Ogden College  
Architectural and Manufacturing Science Department  
Proposal to Delete a Program  
(Consent Item)**

Contact Person: Dr. Greg Arbuckle, [greg.arbuckle@wku.edu](mailto:greg.arbuckle@wku.edu), 270-745-2403

**1. Identification of program:**

- 1.1 Program reference number: 257
- 1.2 Program title: Manufacturing Technology
- 1.3 Credit hours: 45

**2. Rationale for the program deletion:**

This program on average has less than 5 students per year with no more than two graduates per year over the past five years.

**3. Effect on current students or other departments, if known:** Students who are currently in the program will be allowed to complete the program as all of the courses are offered for the BS program.

**4. Proposed term for implementation:** Fall 2015

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

Architectural and Manufacturing Science Department

OCSE Curriculum Committee

Professional Education Council (if applicable)

Undergraduate Curriculum Committee

University Senate

8-18-14

3/3/2014

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

Contact Person: Rong Yang  
[rong.yang@wku.edu](mailto:rong.yang@wku.edu)  
270-745-2940

**1. Identification of course:**

- 1.1 Current course prefix (subject area) and number: CS225
- 1.2 Course title: Computer Science Systems hardware and Software

**2. Rationale for the course suspension:**

The course has not been offered for 5 years due to the restructuring of the CS curriculum.

**3. Effect of course suspension on programs or other departments, if known:**

None.

**4. Proposed term for implementation:**

Spring 2015

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

Computer Science Department \_\_\_\_\_3/18/2014\_\_\_\_\_

Ogden College Curriculum Committee \_\_\_\_\_

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

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



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

Contact Person: Rong Yang  
[rong.yang@wku.edu](mailto:rong.yang@wku.edu)  
270-745-2940

**1. Identification of course:**

- 1.1 Current course prefix (subject area) and number: CS226
- 1.2 Course title: Introduction To Visual Programming

**2. Rationale for the course deletion:**

The course has not been offered for at least the past five years.

**3. Effect of course deletion on programs or other departments, if known:**

None.

**4. Proposed term for implementation:**

Spring 2015

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

Computer Science Department	<u>3/18/2014</u>
Ogden College Curriculum Committee	_____
Undergraduate Curriculum Committee	_____
University Senate	_____

**Ogden College of Science and Engineering  
Department of Computer Science  
Proposal to Revise Course Prerequisites/Corequisites  
(Consent Item)**

Contact Person: Rong Yang  
[rong.yang@wku.edu](mailto:rong.yang@wku.edu)  
270-745-2940

**1. Identification of course:**

- 1.1 Course prefix (subject area) and number: CS 280
- 1.2 Course title: Computer Science III

**2. Current prerequisites/corequisites/special requirements:**

A grade of "C" or better in CS 181, MATH 119, 122, or 136.

**3. Proposed prerequisites:**

A grade of "C" or better in both CS 181 and MATH 136.

**4. Rationale for the revision of prerequisites/corequisites/special requirements:**

MATH 122 and MATH 119 are no longer offered.

**5. Effect on completion of major/minor sequence:**

No effect on completion

**6. Proposed term for implementation:**

Spring 2015

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

Computer Science Department \_\_\_\_\_ 3/18/2014 \_\_\_\_\_

Ogden College Curriculum Committee \_\_\_\_\_

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

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

**Ogden College of Science and Engineering  
Department of Computer Science  
Proposal to Revise Course Prerequisites/Corequisites  
(Consent Item)**

Contact Person: Rong Yang  
[rong.yang@wku.edu](mailto:rong.yang@wku.edu)  
270-745-2940

**1. Identification of course:**

- 1.1 Course prefix (subject area) and number: CS 389
- 1.2 Course title: Practicum In Computer Science

**2. Current prerequisites/corequisites/special requirements:**

A grade of "C" or better in CS 225 and consent of computer science department head.

**3. Proposed prerequisites:**

A grade of "C" or better in CS 251 and consent of computer science department head.

**4. Rationale for the revision of prerequisites:**

CS 225 is no longer offered. Replacing CS 225 with CS 251 as part of the prerequisites provides the students with needed background and skills to succeed in this course.

**5. Effect on completion of major/minor sequence:**

No effect on completion

**6. Proposed term for implementation:**

Spring 2015

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

Computer Science Department \_\_\_\_\_ 4/8/2014 \_\_\_\_\_

Ogden College Curriculum Committee \_\_\_\_\_

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

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

Proposal Date: August 27, 2014

**Ogden College of Science and Engineering**  
**Architectural and Manufacturing Science Department**  
**Proposal to Create a New Course**  
**(Action Item)**

Contact Person: Bryan Reaka, [bryan.reaka@wku.edu](mailto:bryan.reaka@wku.edu), 270-745-7032

**1. Identification of proposed course:**

- 1.1 Course prefix: AMS 101
- 1.2 Course title: Introductory Research
- 1.3 Abbreviated course title: Introductory Research
  
- 1.4 Credit hours: 1 - 6 hours Variable credit: yes
- 1.5 Grade type: Pass/Fail
- 1.6 Prerequisites: Enrollment in a program of study within the Architectural and Manufacturing Sciences Department or consent of instructor.
- 1.7 Course description: An introduction to research projects and problem-solving techniques in various AMS fields. May be repeated to a maximum of six hours.

**2. Rationale:**

- 2.1 Reason for developing the proposed course: To expose students early in their undergraduate curriculum to applications in their fields and to develop their interest in research.
- 2.2 Projected enrollment in the proposed course: 3-5 per semester, based upon the number of students in the AMS Department that are currently assisting with research.
- 2.3 Relationship of the proposed course to courses now offered by the department: No freshman level research course in AMS department.
- 2.4 Relationship of the proposed course to courses offered in other departments: AMS 101 is similar to BIOL 199 (Introduction to research experience) but is targeted toward students in the Architectural and Manufacturing Sciences Department, rather than those in biology. There are a number of sophomore and upper level research courses listed from 1-6 credit hours across campus.
- 2.5 Relationship of the proposed course to courses offered in other institutions: Similar to ERG 199 (Topics in Engineering) at the University of Kentucky.

**3. Discussion of proposed course:**

- 3.1 Schedule type: A Applied learning: Formal presentation of a subject; may include a variety of delivery methods
- 3.2 Learning outcomes: Students will be introduced to forms of research within the AMS Department.
- 3.3 Content outline: No specific content as students will be working individually on different projects with faculty mentors.
- 3.4 Student expectations and requirements: Students will be expected to attend lectures, complete assignments, and assist designated faculty members

with research projects. A pass/fail grade will be determined in consultation with the faculty mentor.

3.5 Tentative texts and course materials: None

**4. Resources:**

4.1 Library resources: Current resources should be adequate for this course

4.2 Computer resources: Current computers within department will suffice

**5. Budget implications:**

5.1 Proposed method of staffing: Current faculty

5.2 Special equipment needed: None

5.3 Expendable materials needed: None

5.4 Laboratory materials needed: None

**6. Proposed term for implementation: Spring 2015**

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

Architectural and Manufacturing Science Department

OCSE Curriculum Committee

Undergraduate Curriculum Committee

University Senate

**8-28-2014**

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**Ogden College of Science and Engineering  
Department of Computer Science  
Proposal to Make Multiple Revisions to a Course  
(Action Item)**

Contact Person: Rong Yang  
[rong.yang@wku.edu](mailto:rong.yang@wku.edu)  
270-745-2940

**1. Identification of course:**

- 1.1 Current course prefix (subject area) and number: CS 299
- 1.2 Course title: Introduction To Research In Computer Science

**5. Revise course catalog listing:**

5.1 Current course catalog listing:

Prerequisites: A "B" or better in CS 180 and 181 or consent of instructor. Directed research in computer science through reading, programming, and / or other problem solving activities under the guidance of a faculty member.

5.2 Proposed course catalog listing:

Prerequisites: A "B" or better in CS 180 and 181 or consent of instructor. Directed research in computer science through reading, programming, and / or other problem solving activities under the guidance of a faculty member. May be repeated up to a total of 6 credit hours.

5.3 Rationale for revision of course catalog listing:

To specify the total allowable repeated credit hours for this course.

**6. Revise course credit hours:**

- 6.1 Current course credit hours: 3
- 6.2 Proposed course credit hours: 1-3
- 6.3 Rationale for revision of course credit hours:

Since this course introduces the lower division undergraduates to research in computer science, using variable credit hours provides needed flexibility for various sizes of projects.

**8. Proposed term for implementation: Spring 2015**

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

Computer Science Department \_\_\_\_\_5/6/2014\_\_\_\_\_

Ogden College Curriculum Committee \_\_\_\_\_

Undergraduate Curriculum Committee

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University Senate

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**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](mailto:david.keeling@wku.edu), 5-4555

**1. Identification of program:**

- 1.1 Current program reference number: 363
- 1.2 Current program title: Minor in Environmental Studies
- 1.3 Credit hours: 25

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

- 2.1 Reflect changes in the credit hours of GEOG 280 and delete the equivalency.
- 2.2 Reflect change in number and title of GEOG 100 to GEOG/L 103.
- 2.3 Delete GEOG 121 as an option under Core C.
- 2.4 Delete unnecessary verbage in program description.
- 2.5 Change the program hours to 23.
- 2.6 Change recommended electives to differentiate this physically focused minor program from the Minor in Sustainability that addresses more human oriented issues.

**3. Detailed program description:**

<p>The environmental studies minor <del>requires 25 semester hours, including a 13-hour core and 12 hours of electives.</del> Students must have at least 12 hours of coursework from outside their major program. A minimum of <del>13 hours</del> must be upper division courses.</p> <p>■ Core Courses <span style="float: right;"><del>13 hours</del></span></p> <p>A. GEOG 280 <b>Intro Environ Sc</b> (3) Or ENV 280, PH 280, CHEM 280</p> <p><del>These courses present basic environmental concepts and their applications but with different emphases, allowing a student to select that which most closely parallels his/her individual interests.</del></p> <p>B. Biol Concepts: Evol, Diversity, Eco (4) BIOL 122/123 (with lab)</p> <p><del>The selected courses above should be taken during the sophomore year and no later than the fall semester of the third year.</del></p> <p>C. GEOG 100 or GEOG 121</p>	<p>The environmental studies minor requires <b>23</b> semester hours, including a <b>14-hour core</b> and <b>9 hours of electives</b>. Students must have at least 12 hours of coursework from outside their major program. A minimum of <b>12 hours</b> must be upper division courses.</p> <p>■ Core Courses <span style="float: right;"><b>14 hours</b></span></p> <p>A. GEOG 280 <b>Env. Science and Sustain</b> (4)</p> <p>B. Biol Concepts: Evol, Diversity, Eco (4) BIOL 122/123 (with lab)</p> <p>C. <b>GEOG/GEOL 103: Our Dynamic Planet</b> or GEOG 111: The Earth or <b>METR 121</b> Meteorology (3)</p> <p>D. GEOG 495: Supervised Practicum or BIOL 369 or 389: Coop Ed in Biology or CHEM 489: Coop Education in Chemistry or ENV 475 or 491: Topics/Practicum (3)</p> <p>■ Approved Electives <span style="float: right;"><b>9 hours</b></span></p> <p>The remaining <b>9 hours</b> of the minor are to be</p>
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<p>or GEOL 102 or GEOL 111 (3)  <del>These courses present a common body of basic earth science but with different emphases.</del>  D. BIOL 369 or 389 (3)  Cooperative Education in Biology or GEOG 495 (3)  Supervised Practicum or CHEM 489 (3)  Cooperative Education in Chemistry or ENV 475 or 491 (3)  Special topics/Practicum  <del>An approved capstone project, supervised practicum, or cooperative education experience in the senior year.</del></p> <p>■ Approved Electives 12-13 hours  The remaining 12 hours of the minor are to be selected from the list of courses identified from the offerings of several departments. The specific courses to be taken will be determined after consultation with one of the environmental studies minor advisors. A sufficient number of offerings has been identified to allow the selection of a sequence that corresponds closely to the students interests. At least two departments must be represented in the 12 hours of elective coursework.</p> <p>Department of Agriculture  AGRO 350/351 Soils and Soils Lab (4)  AGRO 454 Soil Management (3)</p> <p>Dept of Architectural and Manufac. Sciences  AMS 470 Land Development (3)</p> <p>Department of Biology  BIOL 207/208 General Microbiology (4)  BIOL 315 Ecology (3)  BIOL 420 Introduction to Toxicology (3)  BIOL 446 Biochemistry (3)</p> <p>Dept of Chemistry  CHEM 314 Intro Organic Chemistry (5)  CHEM 446 Biochemistry and Lab (5)</p>	<p>selected from the list of courses identified from the offerings of several departments. The specific courses to be taken will be determined after consultation with an environmental studies minor advisor. At least two departments must be represented in the 9 hours of elective coursework.</p> <p>Department of Agriculture:  AGRO 350/351 Soils and Soils Lab (4)  AGRO 454 Soil Management (3)</p> <p>Dept of Architectural and Manufac. Sciences:  AMS 470 Land Development (3)</p> <p>Department of Biology  BIOL 207/208 General Microbiology (4)  BIOL 315 Ecology (3)  BIOL 420 Introduction to Toxicology (3)  BIOL 446 Biochemistry (3)</p> <p>Department of Chemistry:  CHEM 314 Intro Organic Chemistry (5)  CHEM 446 Biochemistry and Lab (5)</p> <p>Department of Engineering:  CE 351 Environmental Engineering (3)</p> <p>Department of Geography and Geology:  GEOG/L 310 Global Hydrology (3)  GEOG 328 Biogeography (3)  <b>GEOG 414 Remote Sensing (4)</b>  <b>GEOG 420 Geomorphology (4)</b>  GEOG 427 Water Resources (3)  <b>GEOG 452 Field Studies (3)</b>  GEOG 455 Global Environmental Change (3)  <b>GEOG 461 Karst Environments (3)</b>  <b>GEOG 471 Natural Resource Manage (3)</b>  GEOG 415 Environmental Geology (3)  <b>GEOL 445 Aqueous Geochemistry (3)</b></p> <p>Department of Public Health  ENV 375 Intro to Water Resources (3)  ENV 460 Environmental Management (3)  ENV 480 Hazardous and Solid Waste (3)</p>
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Dept of Engineering CE 351 Environ Engineering	(3)	
Department of Geography and Geology GEOG/L 310 Global Hydrology	(3)	
GEOG 328 Biogeography	(3)	
GEOG 427 Water Resources	(3)	
<del>GEOG 455 Global Env. Change</del>	<del>(3)</del>	
<del>GEOG 474 Environmental Planning</del>	<del>(3)</del>	
GEOL 415 Environmental Geology	(3)	
Department of Public Health ENV 375 Intro to Water Resources	(3)	
ENV 460 Environmental Management	(3)	
ENV 480 Hazardous and Solid Waste	(3)	
<del>PH 385 Environmental Health</del>	<del>(3)</del>	
Department of Philosophy and Religion RELS 408 Religion and Ecology	<del>(3)</del>	

4. **Rationale for the proposed program changes:** The proposed program changes reflect changes in the course offerings (for example, GEOG 280 is now 4 hours instead of 3), eliminates excess wording, deletes courses that are no longer offered (for example GEOG 100 has become GEOG 103 and GEOG 121 is now METR 121), and increases the list of electives that can be counted in this minor to meet student demand for broader options. These changes are necessary given the changing course offerings of the participating departments, particularly Geography and Geology.

5. **Proposed term for implementation: Fall 2015**

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

Department of Geography and Geology \_\_\_\_\_8/20/2014\_\_\_\_\_

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: **Jun Yan, Ph.D.** e-mail: [jun.yan@wku.edu](mailto:jun.yan@wku.edu) Phone: **5-8952**

**1. Identification of program:**

- 1.1 Current program reference number: 366
- 1.2 Current program title: Minor in Geographic Information Systems
- 1.3 Credit hours: 23

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

- 2.1 Add upper-level GIS courses in the electives.
- 2.2 Change the course number for GEOG 100.

**3. Detailed program description:**

Current Program	Proposed Program
Minor in Geographic Information Systems	Minor in Geographic Information Systems
<p>This 23-hour minor program provides a foundation in Geographic Information Systems (GIS). The minor is appropriate for students interested in careers utilizing GIS as a tool in areas such as geography, geology, biology, political science, business, journalism and broadcasting, engineering, and public health, or for students pursuing GIS as a profession in a related discipline such as Computer Science or Computer Information Systems. <del>Required courses (23 hours) include GEOG 100 or GEOL 111, GEOG 110, 316, 317, 417, 419, and GEOG 414 or 477 (Remote Sensing or GIS Special Topics).</del></p> <p><u>Foundation Courses (6 hours):</u>  <del>GEOG 100 or GEOL 111 Physical 3</del>  <del>GEOG 110 World Regional Geog. 3</del></p> <p><u>Technique Requirements (14 hours):</u>  <del>GEOG 316 Foundations of GIS 4</del>  <del>GEOG 317 GIS 4</del>  <del>GEOG 417 GIS Analysis 3</del></p>	<p>This minor program provides a foundation in Geographic Information Systems (GIS). The minor is appropriate for students interested in careers utilizing GIS as a tool in areas such as geography, geology, biology, political science, business, journalism and broadcasting, engineering, and public health, or for students pursuing GIS as a profession in a related discipline such as Computer Science or Computer Information Systems. <b>A minimum of 23 hours is required, including 6 foundation hours, 14, technique hours, and at least 3 elective hours.</b></p> <p><u>Foundation Courses:</u> (6 hours)            GEOG/L 103 Dynamic Earth                or GEOL 111 The Earth 3            GEOG 110 World Regional Geography 3</p> <p><u>Technique Requirements:</u> (14 hours)            GEOG 316 Foundations of GIS 4            GEOG 317 GIS 4            GEOG 417 GIS Analysis 3            GEOG 419 GIS Programming 3</p>

GEOG 419 GIS Programming	3	<b>Elective Courses: (3 hours minimum)</b>	
<del>Required Support Courses (3):</del>		GEOG 414 Remote Sensing	4
GEOG 414 Remote Sensing	4	<b>GEOG 418 Internet GIS</b>	<b>3</b>
or GEOG 477 GIS Special Topics	3	<b>GEOG 423 Transpt., Location, GIS</b>	<b>3</b>
		<b>GEOG 443 GIS Databases</b>	<b>3</b>
		GEOG 477 GIS Special Topics	3
		<b>GEOG 492 Advanced Spatial Analysis</b>	<b>3</b>
PROGRAM TOTAL:	23 Hours	PROGRAM TOTAL:	23 Hours

4. **Rationale for the proposed program change:** The GIS Program has expanded its curriculum recently and now offers more upper-level GIS courses. This revision provides students more GIS elective choices. In addition, GEOG 100 has changed both its number and title and is now the equivalent of GEOL 103.

5. **Proposed term for implementation:** Fall 2015

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

Department of Geography and Geology

8/20/2014

Ogden College Curriculum Committee

Undergraduate Curriculum Committee

University Senate

**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](mailto:david.keeling@wku.edu), 5-4555

**1. Identification of program:**

- 1.1 Current program reference number: 475
- 1.2 Current program title: Minor in Sustainability
- 1.3 Credit hours: 21

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

- 2.1 The title for the minor is proposed to change from Minor in Sustainability to Minor in Environment and Sustainability.
- 2.2 The required credit hours for the minor program increase to 22 hours.
- 2.3 Other proposed changes are outlined below, and entail the deletion of elective course offerings and addition of others. The Foundation Courses for the minor are also proposed to change by moving GEOG 489 or GEOG 495 from a foundation requirement to an elective option.
- 2.4 The program is also streamlined in that students will no longer need to take elective courses grouped in clusters, and can instead select any combination of the elective offerings. Courses added to the electives listing are shown in bold in the second column. Many of these courses are new additions to the course offerings in Geography/Geology or existing courses which have changed in recent years to have a more environment and sustainability focus.

**3. Detailed program description:**

<b>Minor in Sustainability</b>	<b>Minor in Environment and Sustainability</b>
<ul style="list-style-type: none"> <li>■ Foundation Courses <span style="float: right;"><del>9</del> hours</span></li> <li>GEOG 280 <del>Introduction to Environmental Science</del> (3)</li> <li>GEOG 380 Global Sustainability (3)</li> <li><del>GEOG 489 Alternatives in Sustainability</del> 3 hours</li> <li>or <del>GEOG 495 Sustainability Practicum</del> 3 hours</li> </ul>	<ul style="list-style-type: none"> <li>■ Foundation Courses <span style="float: right;">7 hours</span></li> <li><b>GEOG 280 Env. Science and Sustainability</b> (4)</li> <li>GEOG 380 Global Sustainability (3)</li> </ul>
<p><del>Elective Courses (12 hours):</del>  <del>[At least one course from each of the four clusters, with no more than six hours of cluster courses taken from any single discipline.]</del></p> <p><del>CLUSTER A:</del>            ANTH 442 Ecological and Economic Anthropology 3 hours            GEOG 444 Environmental Ethics 3 hours            SOCL 470 Environmental Sociology 3 hours</p>	<ul style="list-style-type: none"> <li>■ Elective Courses <span style="float: right;">(15 hours)</span></li> <li><i>No more than six hours of courses may be taken from any single discipline.</i></li> <li>AGRO 454 Soil Management &amp; Conservation (3)</li> <li>AMS 470 Land Development (3)</li> <li>ANTH 442 Ecological and Economic Anthro. (3)</li> <li>ECON 430 Env and Resources Economics (3)</li> <li><b>GEOG 210 Env and Ecological Policy</b> (3)</li> <li><b>GEOG 328 Biogeography</b> (3)</li> <li><b>GEOG 378 Food, Culture, and Environment</b> (3)</li> <li><b>GEOG 385 Climate, Society, and Resources</b> (3)</li> </ul>

<p><b>CLUSTER B:</b>  ECON 430 Environment and Resources Economics 3 hours  GEOG 471 Natural Resource Management 3 hours  GEOG 487 Environmental Law and Policy 3 hours</p> <p><b>CLUSTER C:</b>  <del>BIOL 315 Ecology 3 hours</del>  <del>GEOL 415 Environmental Geology 3 hours</del>  GEOG 427 Water Resources 3 hours  GEOG 455 Global Environmental Change 3 hours  <del>ENV 375 Introduction to Water Resources 3 hours</del>  PH 385 Environmental Health 3 hours  <del>PHYS 100 Physics of Energy 3 hours</del></p> <p><b>CLUSTER D:</b>  AGRO 454 Soil Management &amp; Conservation 3 hours  AMS 470 Land Development 3 hours  <del>CE 351 Environmental Engineering 3 hours</del>  GEOG 474 Environmental Planning 3 hours  <del>ENV 460 Environmental Management 3 hours</del></p>	<p><b>GEOG 427 Water Resources (3)</b>  GEOG 444 Environmental Ethics (3)  <b>GEOG 452 Field Studies (3)</b>  GEOG 471 Natural Resource Management (3)  GEOG 487 Environmental Law and Policy (3)  <b>GEOG 488 Environment and Tourism (3)</b>  <b>GEOG 489 Alternatives in Sustainability (3)</b>  <b>GEOG 495 Sustainability Practicum (3)</b>  PH 385 Environmental Health (3)  SOCL 470 Environmental Sociology (3)</p>
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4. **Rationale for the proposed program changes:** The proposed program changes reflect changes in the course offerings (for example, GEOG 280 is now 4 hours instead of 3), eliminates excess wording and segregation of classes into clusters, deletes elective courses that have a more physical science focus, and increases the list of electives that can be counted in this minor to meet student demand for broader options. Collectively, these changes allow this minor to be more clearly defined as a human rather than physical geography focus on the environment and sustainability. With an existing physical geography environmental minor, these changes make the distinction between minors clearer for students and advisors. These changes are also needed to reflect changes in course offerings in the respective departments and to meet student demand.

5. **Proposed term for implementation:** Fall 2015

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

Department of Geography and Geology	_____ 8/20/2014 _____
Ogden Curriculum Committee	_____
Undergraduate Curriculum Committee	_____
University Senate	_____

Proposal Date: August 16, 2014

**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](mailto:david.keeling@wku.edu), 5-4555

**1. Identification of program:**

- 1.1 Current program reference number: 491
- 1.2 Current program title: Minor in Water Resources
- 1.3 Credit hours: 22

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

- 2.1 Proposed changes to the Minor in Water Resources include moving GEOG 121 and GEOG 474 from required courses to electives, deleting course which no longer are applicable to the minor, and adding other electives that closely fit the focus of the minor.
- 2.2 GEOG 103 or GEOL 111 may now both be counted as part of the required courses since GEOG 103 has been added as a course offering in the department and is an acceptable substitute for GEOG 111 with respect to the water resources minor.
- 2.3 Reduce credit hours required in the Minor from 22 to a minimum of 21 hours.

**3. Detailed program description:**

Minor in Water Resources	<del>22 hours</del>	Minor in Water Resources	<b>21 hours</b>
Required Courses:	(16 hours)	Required Courses:	(9-10 hours)
GEOL 111 The Earth	3 hours	<b>GEOG/GEOL 103: Our Dynamic Planet</b>	<b>(3)</b>
GEOL 113 The Earth Laboratory	1 hour	or GEOL 111/113 The Earth with Lab	(4)
<del>GEOG 121 Intro to Meteorology</del>	<del>3 hours</del>	GEOL or GEOG 310 Global Hydrology	(3)
GEOL or GEOG 310 Global Hydrology	3 hours	GEOG 427 Water Resources	(3)
GEOG 427 Water Resources	3 hours	Elective courses:	(12 hrs)
<del>GEOG 474 Environmental Planning</del>	<del>3 hours</del>	GEOL 415 Environment Geology	(3)
Elective courses:	(6 hours)	GEOL 440 Hydrogeology	(3)
GEOL 415 Environment Geology	3 hours	GEOL 445 Aqueous Geochemistry	(3)
GEOL 440 Hydrogeology	3 hours	GEOG 428 Applied Groundwater	(3)
GEOL 445 Aqueous Geochemistry	3 hours	<b>GEOG 452 Field Studies</b>	<b>(3)</b>
<del>GEOG 422 Climatology</del>	<del>4 hours</del>	GEOG 459 Physical Hydrology	(3)
<del>GEOG 426 Applied Meteorology</del>	<del>3 hours</del>	<b>GEOG 461 Karst Environments</b>	<b>(3)</b>
GEOG 428 Applied Groundwater	3 hours	<b>GEOG 474 Environmental Planning</b>	<b>(3)</b>
<del>GEOG 487 Environmental Law</del>	<del>3 hours</del>	<b>METR 121 Meteorology</b>	<b>(3)</b>
		<b>METR 422 Physical Climatology</b>	<b>(4)</b>

**4. Rationale for the proposed program changes:** The proposed program changes reflect the addition of courses to the approved electives list. As our department continues to grow in one direction with a water focus based on faculty expertise and student demand, more courses are added to our course listing or others are changed to have a strong water focus. These course changes are reflected in the proposed program change for the water resources minor.

**5. Proposed term for implementation:** Fall 2015

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

Department of Geography and Geology \_\_\_\_\_ 8/20/2014 \_\_\_\_\_

Ogden Curriculum Committee \_\_\_\_\_

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

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



Proposal Date: August 1, 2014

**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](mailto: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: 52

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

- Increase the total program hours to 53
- Change GEOG 391 to 4 hours
- Change GEOG 100 or GEOL 102 to GEOG/GEOL 103
- Replace CS 146 with CS 170
- Change GEOG 300 title to Writing in the Geosciences
- Move the internship/research hours to Professional Requirements

**3. Detailed program description:**

Current Program	Proposed Program
<b>B.Sc. Geographic Information Science</b>	<b>B.Sc. Geographic Information Science</b>
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.	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 <b>minimum of 53 semester hours</b> of GIS courses.
<u>Foundation Courses (16 hours):</u>	<u>Foundation Requirements (10 hours):</u>
<del>GEOG 100 or GEOL 102</del>	<b>GEOG or GEOL 103</b>
or GEOL 111 Physical 3	or GEOL 111 Dynamic Earth 3
GEOG 110 World Regional 3	GEOG 110 World Regional 3
<del>CS 146 Intro. to Programming</del> 3	<b>CS 170 Prob Solve &amp; Programming</b> 3

GEOG 475 or 495 (Practicum —and/or Internship)	6		
GEOG 499 Prof. Development	1	GEOG 499 Prof. Development	1
<u>Technique Requirements (14 hours):</u>		<u>Technique Requirements (15 hours):</u>	
GEOG 300 <del>Research Methods</del>	3	GEOG 300 <b>Writing Geosciences</b>	3
GEOG 316 Foundations of GIS	4	GEOG 316 Foundations of GIS	4
GEOG 317 GIS	4	GEOG 317 GIS	4
GEOG 391 Spatial Data Analysis	3	GEOG 391 Spatial Data Analysis	4
<u>Professional Requirements (22 hours):</u>		<u>Professional Requirements (28 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 Programming	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
or GEOG 423 Urban GIS		or GEOG 423 Urban GIS	
GEOG 492 Advanced Spatial GIS	3	GEOG 492 Advanced Spatial GIS	3
		<b>GEOG 475 or 495 (Practicum and/or Internship)</b>	<b>6</b>
<u>Required Support Courses (16 –17)</u> (not part of the major program hours):		<u>Required Support Courses (16 –17)</u> (not part of the major program hours):	
CE 160/161 Surveying	4	CE 160/161 Surveying	4
CS 180 Computer Science I	4	CS 180 Computer Science I	4
MATH 118 (or 116 + 117) Algebra and Trig.	5 – 6	MATH 118 (or 116 + 117) Algebra and Trig.	5 – 6
MATH 183 Intro to Statistics	3	MATH 183 Intro to Statistics	3
<b>PROGRAM TOTAL:</b>	<del>52 Hours</del>	<b>PROGRAM TOTAL:</b>	<b>53 Hours</b>

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

- Total program hours are increased to 53 hours because GEOG 391 has changed from 3 to 4 credit hours.
- The title of GEOG 300 has changed to Writing in the Geosciences as it will be proposed as a Colonnade Foundations course.
- GEOG 100 and GEOL 102 have been deleted and are replaced with GEOG/GEOL 103 (cross-listed) *Our Dynamic Earth*
- CS 146 is replaced with CS 170 Problem Solving and Programming, as the latter course is a better fit with the programming focus of GIS courses.
- The six hours of required internship/practicum/research have been moved from Foundation courses to Professional Requirements, as these are typically capstone experiences and not Foundational requirements. This course is repeatable for a maximum of 6 hours in the program.

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

- **Term:** Fall 2015

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

Department of Geography and Geology

8/20/2014

Ogden College Curriculum Committee

University Curriculum Committee

University Senate