MEMORANDUM TO: Ogden College of Science and Engineering Curriculum Committee

Dr. Martin Stone

Dr. Xingang Fan

Dr. Mark Revels

Dr. Ngoc Nguyen

Dr. Phil Lienesch

Dr. Doug Harper

Dr. Darwin Dahl

Dr. Steve Haggbloom

Dr. Huanjing Wang

Dr. Les Pesterfield

Dr. Warren Campbell

FROM: Kenneth Crawford, Chair

SUBJECT: Agenda for Thursday, February 4, 4:00 p.m. in COHH 4123

A. OLD BUSINESS:

Consideration of the minutes of the December 3, 2015 meeting. I.

B. NEW BUSINESS:

Information Items

Department of Chemistry

I. Colonnade Program Course Proposal: Explorations Category a. CHEM 111, Introduction to Forensic Chemistry, 3 hrs.

Department of Geography & Geology

I. Colonnade Program Course Proposal: Explorations Category a. GEOG 280, Environmental Science and Sustainability, 4 hrs.

Consent Items

Department of Agriculture

- I. Proposal to Revise Course Catalog Listing
 - a. AGRI 398, Seminar, 1 hr.
- II. Proposal to Revise a Program
 - a. Ref. 205, Associate Degree in Agricultural Technology and Management Turf and Golf Course Management Option.

Department of Chemistry

- I. Proposal to Revise Course Catalog Listing
 - a. CHEM 116, Introduction to College Chemistry, 3 hrs.
- II. Proposal to Revise Course Prerequisites/Corequisites
 - a. CHEM 299, Introduction to Chemical Research, 1-3 hrs.

- b. CHEM 314, Introductory Organic Chemistry, 5 hrs.
- c. CHEM 320, Principles of Inorganic Chemistry, 3 hrs.
- d. CHEM 399, Research Problems in Chemistry, 1-3 hrs.
- e. CHEM 412, Introduction to Physical Chemistry, 5 hrs.
- f. CHEM 420, Inorganic Chemistry, 3 hrs.
- g. CHEM 421, Inorganic Chemistry Laboratory, 1 hr.
- h. CHEM 430, Forensic Chemistry, 3 hrs.
- i. CHEM 435, Instrumental Analysis, 3 hrs.
- j. CHEM 450, Physical Chemistry I, 3 hrs.
- k. CHEM 451, Physical Chemistry I Laboratory, 2 hrs.
- 1. CHEM 452, Physical Chemistry II, 3 hrs.
- m. CHEM 462, Bioinorganic Chemistry, 3 hrs.
- n. CHEM 467, Advanced Investigations in Chemistry Laboratory, 2 hrs.
- o. CHEM 490, Materials Chemistry, 3 hrs.

Department of Geography & Geology

- I. Proposal to Revise Course Catalog Listing
 - a. GEOG 210, Ecological and Environmental Policy, 3 hrs.
 - b. GEOG 328, Elements of Biogeography, 3 hrs.
 - c. GEOG 344, Environmental Ethics, 3 hrs.
 - d. GEOG 385, Society, Resources, and Climate, 3 hrs.
 - e. GEOG 427, Water Resource Management, 3 hrs.
- II. Proposal to Revise Course Prerequisites/Corequisites
 - a. GEOG 380, Global Sustainability, 3 hrs.
 - b. GEOL 113, The Earth Laboratory, 1 hr.
- III. Proposal to Delete a Program
 - a. Ref. 298, Associate in Water Resource Management, 60 hrs.

Department of Mathematics

- I. Proposal to Revise Course Prerequisites/Corequisites
 - a. MATH 205, Number Systems and Number Theory for Teachers, 3 hrs.
 - b. MATH 206, Fundamentals of Geometry for Teachers, 3 hrs.
 - c. MATH 304, Functions, Applications, and Explorations, 3 hrs.
 - d. MATH 308, Rational Number and Data Analysis for Teachers, 3 hrs.

Department of Psychological Sciences

- I. Proposal to Revise Course Prerequisites/Corequisites
 - a. PSYS 462, Neuroscience of Learning and Memory, 3 hrs.

Action Items

Department of Agriculture

- I. Proposal to Revise Course Credit Hours
 - a. AGRI 175, University Experiences Agriculture Majors, 2 hrs.

- II. Proposal to Discontinue Course Equivalencies
 - a. AGRI 280, Introduction to Environmental Science, 3 hrs.
- III. Proposal to Create a New Course
 - a. AGMC 425, Applied Hydraulics and Pneumatics, 3 hrs.
 - b. AGRI 397, Agriculture Career Planning, 1 hr.
- IV. Proposal to Make Multiple Revisions to a Course
 - a. AGRO 317, Plant Pathology, 3 hrs.

Department of Biology

- I. Proposal to Create a New Course
 - a. BIOL 212, Genome Discover, 2 hrs.

Department of Chemistry

- I. Proposal to Make Multiple Revisions to a Course
 - a. CHEM 120, College Chemistry I, 3 hrs.
 - b. CHEM 222, College Chemistry II, 3 hrs.
 - c. CHEM 223, College Chemistry II Laboratory, 2 hrs.
 - d. CHEM 421, Inorganic Chemistry Lab, 2 hrs.

Department of Geography & Geology

- I. Proposal to Make Multiple Revisions to a Course
 - a. GEOG 452, Geoscience Field Experiences, 3-6 hrs.
 - b. GEOG 465, Geography of Asia, 3 hrs.
 - c. GEOG 471, Natural Resource Management, 3 hrs.
 - d. GEOG 474, Environmental Planning, 3 hrs.
 - e. GEOG 486, Environmental Seminar, 1 hr.
 - f. GEOG 487, Environmental Law, 3 hrs.
 - g. GEOG 489, Alternatives in Sustainability, 3 hrs.
- II. Proposal to Delete a Program
 - a. Ref. 363, Minor in Environmental Studies, 23 hrs.
- III. Proposal to Revise a Program
 - a. Ref. 675, Geography and Environmental Studies, 52 hrs.
 - b. Ref. 477, Minor in Environment and Sustainability, 22 hrs.
 - c. Ref. 577, Geology Extended (B.S.), 52 hrs.
 - d. Ref. 676, Geology (A.B.), 33 hrs.

Department of Mathematics

- I. Proposal to Create a New Course
 - a. MATH 112, Problem Solving and Mathematical Skills for Teachers, 3 hrs.
 - b. MATH 115, Applied College Algebra, 3 hrs.
 - c. MATH 225, Intro to Advanced Math for Middle Grades Teachers, 3 hrs.

- II. Proposal to Make Multiple Revisions to a Course
 - a. MATH 490, Seminar in Middle Grades Mathematics, 1 hr.
- III. Proposal to Revise a Program
 - a. Ref. 730, Middle Grades Mathematics, 32-33 hrs.

Department of Psychological Sciences

- I. Proposal to Create a New Course
 - a. PSYS 260, Introduction to Biopsychology, 3 hrs.

C. OTHER BUSINESS

Ogden College Dean's Office

- I. Updated meeting dates/deadlines for spring 2016
- II. Discussion regarding the new standing rules implementation plan

Minutes - OCSE Curriculum Committee

December 3, 2015

MEMBERS PRESENT:

Dr. Martin Stone

Dr. Mark Revels

Dr. Bruce Schulte by proxy

Dr. Phil Lienesch

Dr. Stuart Burris

Dr. James Gary

Dr. Huanjing Wang

Dr. Julie Ellis

Dr. Warren Campbell

Dr. Mike Carini

Dr. Doug Harper

Dr. Kelly Madole by proxy

Dr. Steve Haggbloom

Dr. Les Pesterfield by proxy

FROM: Ken Crawford, Chair

OLD BUSINESS:

Stone/Burris moved for approval of the minutes of the November 5, 2015 meeting. Motion approved.

NEW BUSINESS:

Consent Agenda

Gary/Campbell moved to approved consent items. Motion approved.

Action Agenda

Department of Agriculture

Stone/Campbell moved to approve proposals to create a new course: AGRI 355. Motion approved with friendly amendment.

Department of Biology

Campbell/Ellis moved to bundle proposals to Make Multiples Revisions to a course items a and b. Haggbloom/Revels moved to approve proposals to Make Multiple Revisions to a course: BIOL 232 and BIOL 369. Motion approved.

Ellis/Campbell moved to approve proposal to Revise a Program: Ref 582, Medical Technology. Motion approved.

OTHER BUSINESS:

Revisions to the OCSE Standing Rules were reviewed and discussed. The updated document was put to a vote and passed 12 to 2.

Meeting adjourned at 4:14pm.

Colonnade Program Course Proposal: Explorations Category

Please complete the following and return electronically to colonnadeplan@wku.edu.

 What course does the department plan to offer in Explorations? Which subcategory are you proposing for this course? (Arts and Humanities; Social and Behavioral Sciences; Natural and Physical Sciences)

CHEM 111 – Introduction to Forensic Chemistry Natural and Physical Sciences (NS *and* SL)

2. How will this course meet the specific learning objectives of the appropriate subcategory? Please address all of the learning outcomes listed for the appropriate subcategory.

Students use the scientific perspective to gain basic understanding of the natural and physical world and the relevance of science to issues of personal and public importance. Courses examine scientific principles through different modes and scales of observation, development of theories and hypotheses, and data collection and interpretation. Hands-on experience provides an essential applied component in this category.

Students will demonstrate the ability to:

- 1. Demonstrate an understanding of the methods of science inquiry. Student will learn the role of evidence collection and preservation in forensic science and its relation to the scientific method. Though discussed in the classroom and illustrated with explanations of 'how science works,' scientific inquiry and the scientific method are primarily addressed through the variety of laboratory experiences students have in the course. The course devotes approximately 20% of its time to laboratory and applied-learning activities.
- 2. Explain basic concepts and principles in one or more of the sciences.
 Basic chemical concepts and principles are the heart of the basic science focus in the course. The primary focus is the relationship between the shapes of compounds at the molecular level and the relationship between shape and physical properties.
 Students will do this by lab experiences where they will describe the separation of drug and drug-related compounds.
- Apply scientific principles to interpret and make predictions in one or more of the sciences.

Students will achieve this goal through lab experiences, including the collection of reference data on a variety of explosives-related chemical compounds and then surmounting a challenge to identify the components of two different mixtures of these explosives-related compounds.

- 4. Explain how scientific principles relate to issues of personal and/or public importance.
 - a. This aspect permeates the entire course. The course is about looking at how science (and chemistry in particular) is used in forensic investigations. Forensic investigations are not always of personal importance (though they may be to some individuals); however, almost all forensic investigations can legitimately be considered to have public importance. In particular, students will learn to develop latent fingerprints and describe those fingerprints (and other pattern evidence items) and their reliability.
- 3. Syllabus statement of learning outcomes for course. NOTE: In multi-section courses, the same statement of learning outcomes must appear on every section's syllabus.

In CHEM 111 students will:

- Demonstrate an understanding of the methods of science inquiry by learning the role of evidence collection and preservation in forensic science and its relation to the scientific method
- 2. Explain basic concepts and principles in chemistry by being able to describe the separation of drugs and drug-related compounds.
- 3. Apply scientific principles to interpret and make predictions in one or more of the sciences by being able to recognize explosives and describe explosive reactions and how they relate to forensic science
- Explain how scientific principles relate to issues of personal and/or public importance by being able to describe fingerprint and other pattern evidence and its reliability
- 4. Brief description of how the department will assess the course for these learning objectives.

Students in CHEM 111, Introduction to Forensic Chemistry will be tested on the learning outcomes listed above in two ways:

- Knowledge of the scientific method and of the relationships between molecular shape and physical properties will be measured at the beginning of the course for pre-course assessment purposes, then again at the end of the course for post-course assessment. These tests will be primarily multiple-choice (six questions), but one question will be short answer.
- 2. Two lab practical questions/problems will also be presented to the students. These will each happened at least one class period, but not more than three class periods following the related. The two labs that will be assessed are the Fingerprinting lab and the Explosives ID Lab.

Individual faculty members will determine whether the post-test assessment and lab practicals are used as part of the student's grade, though they will be encouraged to do so to ensure students make a strong effort in the test.

5. How many sections of this course will your department offer each semester?

One section of CHEM 111 is offered each Spring semester. If demand rises, a second section may be considered. Sections are limited in size due to lab space

6. Please attach sample syllabus for the course. PLEASE BE SURE THE PROPOSAL FORM AND THE SYLLABUS ARE IN THE SAME DOCUMENT.

Syllabus begins on the following page...

Western Kentucky University Ogden College of Science and Engineering Department of Chemistry

CHEM 111.001: Introduction to Forensic Chemistry CRN: 32559 Spring 2016

Lecture/Discussion Meetings	Instructor	Office Hours
TCCW 403	Dr. Stuart Burris	1:00 PM - 2:00 PM TR
9:35 AM-10:55 AM TR	TCCW 444	other times by appointment
3.0 Credit Hours	745-2973	with 24 hour notice preferred
Ti de la companya de	stuart.burris@wku.edu	•0 5 \$6000 AB (400)

Course Description (WKU Undergraduate Catalog)

A combination of lecture and in-class laboratory activities designed to introduce the fundamentals of forensic chemistry including evidence collection and preservation, arson investigation, poisons and toxicity, determination of time and death, the chemistry of explosions, and DNA/blood analysis. In-class laboratory constitutes 20% of the class.

Course Learning Objectives

In CHEM 111 students will:

- 1. Demonstrate an understanding of the methods of science inquiry by learning the role of evidence collection and preservation in forensic science and its relation to the scientific method
- 2. Explain basic concepts and principles in chemistry by being able to describe the separation of drugs and drug-related compounds.
- 3. Apply scientific principles to interpret and make predictions in one or more of the sciences by being able to recognize explosives and describe explosive reactions and how they relate to forensic science
- 4. Explain how scientific principles relate to issues of personal and/or public importance by being able to describe fingerprint and other pattern evidence and its reliability

Learning Materials

Text: Gaensslen, R.E.; Harris, H.A.; Lee, H.C. *Introduction to Forensic Science and Criminalistics, 1st ed.*, McGraw-Hill: Boston, 2008.

ISBN-10: 0-07-298848-7; ISBN-13: 978-0-07-298848-2

Course Content

Our goal will be to cover part or all of chapters 1-6, 9-12, in the text.

Laboratory Content

We will complete five (5) laboratory exercises. Specific activities will be announced in class and posted on Blackboard.

Evaluation

Item	Points Available	"Value"
5 In-Class Quizzes, see schedule on page 2 – ≥70 points each	≥350	350
10 Homework Assignments, on Blackboard – 20 points each	200	200
3 Small-group Discussions – 20 points each	60	50
5 Laboratory Exercises, see schedule on page 2 – 60 points each	300	300
Final Exam	100	100
Total	≥1010	1000

Final grades will be assigned with the following tentative divisions. The grade you receive will be the grade you earn.

Points	900-1000	800-899	700-799	600-699	≤ 599
Letter	Α	В	С	D	F

Policies and Brief Assignment Descriptions

The academic policies stated in the *Undergraduate Catalog* will be followed with the following highlights and additions. Students will be notified of any changes to this syllabus verbally and in writing. In compliance with university policy, students with disabilities who require accommodations (academic adjustments and/or auxiliary aids or services) for this course must contact the Student Accessibility Resource Center in DSU 1074. The phone number is 745-5004. Please DO NOT request accommodations directly from the professor or instructor without a letter of accommodation from the Student Accessibility Resource Center.

Attendance

Attendance is extremely important; missing class may adversely affect your final grade. You may be assigned a grade of 'F' for excessive absenteeism if you miss seven (7) meetings for any reason before March 18. You will be dropped for non-attendance if you miss the first two (2) meetings without making prior arrangements.

In-Class Quizzes

There will be five (5) In-Class Quizzes, each covering two (2) chapters. In-Class Quizzes will be given on the designated dates, be multiple-choice, and cover class notes and discussion in addition to assigned text reading, videos, and guest speakers. Anyone arriving more than twelve (12) minutes late (at 9:47 AM on Dr. Burris' phone) will not be allowed to take the quiz.

Homework

There will be ten (10) Homework Assignments administered through Blackboard. You may have up to three attempts on each Homework Assignment with the higher score being retained. Homework Assignments will be available up to the time of the In-Class Quiz covering that chapter. There will be no make-ups on Homework Assignments.

Small-group Discussion and Case Study Analysis Assignments

There will be five (5) small-group discussions and/or case study analysis assignments, as indicated on the schedule below. These will launch from videos viewed in class. Answers from small-group reports must be submitted *before* leaving for the day, or *no credit will be given*. There will be no make-ups on Small-group Discussions. Reports on case study analysis assignments will have due dates posted on Blackboard.

Labs

There will be five (5) labs as indicated on the schedule below. Lab reports must be submitted *before* leaving the lab for the day, or *no credit will be given*. Eye protection may be required in some labs and will be provided for those not wearing glasses. There will be no make-ups on Labs.

Missed in-class quizzes and labs

Make-ups for in-class quizzes and labs will *not* be given for any reason. If you miss *one* (and only one) in-class quiz, you will be assigned a replacement grade for the missed in-class quiz that is equal to that the lowest of your other four (4) inclass quiz grades. If you miss a *second* (or third, etc) in-class quiz, NO replacements will be made for ANY missed in-class quizzes. Both (all) missed quizzes will be assigned a score of zero (0). An unexcused absence on the date of a lab will result in a grade of zero for that lab.

Final Exam

The final exam will be based directly off of the questions on the In-Class Quizzes. No kidding!!

CHEM 111 – Introduction to Forensic Chemistry Spring 2016

Tentative Schedule (subject to change due to guest speaker availability)

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Day	Date	Discussion Topic
Tue	26-Jan	Syllabus/Blackboard/What do you want to get out of this?
Thu	28-Jan	Chapter 1 - Introduction to Forensic Science
Tue	2-Feb	NOVA Episode - Forensics on Trial and Small-group Discussion
Thu	4-Feb	Chapter 2 - Physical Evidence and the Legal System
Tue	9-Feb	Case Study Analysis
Thu	11-Feb	Quiz 1
Tue	16-Feb	Chapter 3 - Crime Scene Processing and Analysis
Thu	18-Feb	Chapter 4 - Examination and Interpretation of Patterns for Reconstruction
Tue	23-Feb	Blood Spatter Lab
Thu	25-Feb	Case Study Analysis
Tue	1-Mar	Quiz 2
Thu	3-Mar	Chapter 5 - Examination of Physical Pattern Evidence
Tue	8-Mar	Spring Break
Thu	10-Mar	Spring Break
Tue	15-Mar	Chapter 6 - Fingerprints and Other Personal Identification Patterns
Thu	17-Mar	Fingerprinting Lab
Tue	22-Mar	Quiz 3
Thu	24-Mar	Chapter 9 - Blood and Physiological Fluid Evidence: Evaluation and Initial Examination
Tue	29-Mar	Bloodtyping Lab
Thu	31-Mar	Chapter 10 - DNA Analysis and Typing
Tue	5-Apr	Case Study Analysis
Thu	7-Apr	Quiz 4
Tue	12-Apr	BGPD Crime Scene Investigator Guest Speaker
Thu	14-Apr	Chapter 11 - Arson and Explosives
Tue	19-Apr	Explosives ID Lab
Thu	21-Apr	Chapter 12 - Drugs, Drug Analysis, and Forensic Toxicology
Tue	26-Apr	TLC Lab
Thu	28-Apr	Quiz 5
Tue	3-May	Case Study Analysis
Thu	5-May	Q&A for Final Exam
Tue	10-May	Final Exam - 1 PM in TCCW 403

Colonnade Program Course Proposal: Explorations Category

Please complete the following and return electronically to colonnadeplan@wku.edu.

1. What course does the department plan to offer in Explorations? Which subcategory are you proposing for this course? (Arts and Humanities; Social and Behavioral Sciences; Natural and Physical Sciences)

The Department of Geography and Geology plans to offer the existing GEOG 280: Environmental Science and Sustainability in the Natural and Physical Sciences subcategory WITH A LAB within the Explorations Category. This course was previously accepted as part of the Natural and Physical Sciences subcategory of the Colonnade program, but without a lab. Since that time, the lab portion of the course has been fully developed and is now ready for implementation. Thus, we propose to change the course from being a science without a lab, to a science with a lab.

The course credit hours were previously changed from 3 to 4 hours to give more time in the classroom for hands-on laboratory-based activities. Until now, these 'labs' were consisted as a collection of activities conducted in the classroom on an ad hoc basis. Now, a formal laboratory manual is under development by environmental faculty in the Department for specific use in the 280 courses. Additionally, access to a research laboratory is available as needed for the GEOG 280 course. The developed labs are designed to allow students hands-on experience with laboratory equipment and techniques, in an effort to physically apply concepts learned in the lecture and discussion portion of the course. With these recent changes, which will be fully implementable by the Fall 2016 semester, we feel the course qualifies as a natural science with a laboratory.

2. How will this course meet the specific learning objectives of the appropriate subcategory? Please address all of the learning outcomes listed for the appropriate subcategory.

This information is the same as on the original approved application for this course in the Natural and Physical Sciences without a lab, with the exception of a few bullets for objectives, which are only possible to be covered in the laboratory portion of the course.

Environmental concerns pose growing challenges to how humans interact with the Earth. The course objective of GEOG 280 is to introduce students to the study of environmental issues and how their interrelationships with environmental systems can help either sustain or degrade these systems. It is the foundation upon which students begin to engage in environmental studies (policy and science) in the Department of Geography and Geology. GEOG 280 is a required introductory course for multiple majors and minors in the Department of Geography and Geology, but historically, approximately 70% of students enrolled in the course have been non-majors. Individual course objectives are outlined under the Colonnade Learning Objective each one meets.

Colonnade Learning Objective 1: Demonstrate an understanding of the methods of science inquiry.

- Show an understanding of the scientific method and knowledge of natural science and its relevance in our lives.
- Calculate and evaluate ecological health indices (completed through field-based and laboratory exercises).
- Read and interpret climate change graphs.
- Utilize standard environmental science techniques and equipment for evaluating the environmental condition of a given landscape, including water quality and quantity.

Colonnade Learning Objective 2: Explain basic concepts and principles in one or more of the sciences.

- Describe how environmental science assesses the state of the planet, and explain how sound science, sustainability, and stewardship can help move us toward a sustainable future.
- Describe the difference between sustainability and environmental science, and how these two principles are related.
- Explain the three "E's" of sustainability, with the goal that students be able to propose applications that are relevant, both locally and globally.
- Describe the seven contemporary environmental conditions and problems driving the environmental science discipline, and complete an applied activity with each of these conditions/problems.
- Describe the organization of ecosystems, their responses to disturbance, their distribution across the planet, and how humans affect them.
- Categorize landscapes into one of the ecological system categories by evaluating their characteristics (i.e. animal and plant life presence, weather, water profile, interspecies interactions).
- Explain the differences between groundwater and surface water systems and their interrelationships.
- Explain the formation of air pollution and smog.
- Classify the major categories of air and water pollution and describe the implications for environmental systems.
- Explain the difference between climate change and weather.
- Discuss natural and human-induced factors influencing climate change by explaining the evidence behind climate change science.
- Describe the three main categories of energy resources (renewable, non-renewable fossil fuel, nuclear) including their differences, similarities, pros/cons.

Colonnade Learning Objective 3: Apply scientific principles to interpret and make predictions in one or more of the sciences.

- Describe the role of natural and human-induced factors influencing climate change and discuss the key scientific issues associated with interpreting climaterelated data.
- Explain the interrelationship between food production inputs (i.e. soils, fertilizers, water) and outputs (i.e. crop yield, environmental degradation).

- Describe the role of sustainability practices and principles in balancing present and future needs.
- Make predications about groundwater resource inventories and evaluations through application of surface and groundwater principles.

Colonnade Learning Objective 4: Explain how scientific principles relate to issues of personal and/or public importance

- Outline the contemporary trends in human population and development, and draw conclusions with respect to implications for future environmental change.
- Describe the role of human-induced factors influencing climate change.
- Explain the interrelationship between food production inputs (i.e. soils, fertilizers, water) and outputs (i.e. crop yield, environmental degradation).
- Describe the role of sustainability practices and principles in the balancing present and future human and ecological needs.
- Describe the three main categories of energy resources (renewable, non-renewable fossil fuel, nuclear) including their differences, similarities, pros/cons
- Explain the three "E's" of sustainability, with the goal of proposing applications that are relevant, both locally and globally, to their lives in the 21st century.
- 3. Syllabus statement of learning outcomes for course. NOTE: In multi-section courses, the same statement of learning outcomes must appear on every section's syllabus.

The following items will appear in all GEOG 280 syllabi:

Course Description and Learning Objectives: GEOG 280 Environmental Science and Sustainability will introduce the study of environmental science and the interrelationship between humans and their environment in contemporary ecological issues. Specifically, students will gain a general understanding of the principles of environmental science, functions of ecological systems, contemporary environmental conditions and problems, and theories on humanity's place in the world's ecosystems.

For all new students attending WKU for the first time in Fall 2014 or later, the new Colonnade program requirements are in effect. For returning students (those previously enrolled at WKU prior to Fall 2014) the old General Education requirements remain in effect. This course satisfies the General Education Category D Science for returning students. This course also fulfills the Colonnade Program's requirements for the Natural and Physical Sciences (with a lab component) subcategory of the Explorations Category for new students. As part of the program, students in GEOG 280 will demonstrate the ability to:

- 1. Demonstrate an understanding of the methods of science inquiry
- 2. Explain basic concepts and principles in one or more of the sciences
- 3. Apply scientific principles to interpret and make predictions in one or more sciences
- 4. Explain how scientific principles relate to issues of personal and/or public importance

The course objectives for GEOG 280 are designed to integrate fully with the Colonnade Program. Upon successfully completing GEOG 280, you will be able to:

- Show an understanding of the scientific method and knowledge of natural science and its relevance in our lives.
- Calculate and evaluate ecological health indices (completed through field-based and laboratory exercises).
- Read and interpret climate change graphs.
- Utilize standard environmental science techniques and equipment for evaluating the environmental condition of a given landscape, including water quality and quantity.
- Describe how environmental science assesses the state of the planet, and explain how sound science, sustainability, and stewardship can help move us toward a sustainable future.
- Describe the difference between sustainability and environmental science, and how these two principles are related.
- Explain the three "E's" of sustainability, with the goal that students be able to propose applications that are relevant, both locally and globally.
- Describe the seven contemporary environmental conditions and problems driving the environmental science discipline, and complete an applied activity with each of these conditions/problems.
- Describe the organization of ecosystems, their responses to disturbance, their distribution across the planet, and how humans affect them.
- Categorize landscapes into one of the ecological system categories by evaluating their characteristics (i.e. animal and plant life presence, weather, water profile, interspecies interactions).
- Explain the differences between groundwater and surface water systems and their interrelationships.
- Explain the formation of air pollution and smog.
- Classify the major categories of air and water pollution and describe the implications for environmental systems.
- Explain the difference between climate change and weather.
- Discuss natural and human-induced factors influencing climate change by explaining the evidence behind climate change science.
- Describe the three main categories of energy resources (renewable, non-renewable fossil fuel, nuclear) including their differences, similarities, pros/cons.
- Outline the contemporary trends in human population and development, and draw conclusions with respect to implications for future environmental change.
- Explain the interrelationship between food production inputs (i.e. soils, fertilizers, water) and outputs (i.e. crop yield, environmental degradation).
- Describe the role of sustainability practices and principles in the balancing present and future human and ecological needs.
- Make predications about groundwater resource inventories and evaluations through application of surface and groundwater principles.

4. Brief description of how the department will assess the course for these learning objectives.

As originally approved by the Colonnade committee. The Department of Geography and Geology will assess GEOG 280 with pre- and post-test assessment tools that quantify student improvement in understanding concepts related to learning objectives. Students will be given the pre-test survey during the first two weeks of the semester. The post-test survey will be given in the final two weeks of the semester prior to finals week. The pre- and post-test assessment tools consist of a number of questions related to learning objectives gathered. The questions in the assessment tool will be drawn and adapted from the Geoscience Concept Inventory and the Victorian Curriculum and Assessment Environmental Science Database. The Victorian Curriculum and Assessment Authority, a department of the Australian national government, is the most comprehensive, validated assessment test bank specific to the environmental science discipline, and is therefore the most suitable resource for assessing the course for the aforementioned learning objectives. Both of these assessment resources contain questions validated using standard item analysis techniques (Libarkin and Anderson 2005; Victorian Curriculum and Assessment Authority, 2013).

Results from the GCI assessments will be used to evaluate whether or not student learning objectives are being achieved. Results will be used to improve content and teaching methods in the classroom.

Libarkin, J.C., and S. W. Anderson. 2005. Assessment of learning in entry-level geoscience courses: Results from the Geoscience Concept Inventory. *Journal of Geoscience Education*, **53**:394–401.

Victorian Curriculum and Assessment Authority. 2013. Environmental Science Exams and Examination Reports. Accessed 27 January 2014 at http://www.vcaa.vic.edu.au/Pages/vce/studies/envscience/exams.aspx.

For Learning Objective 1 the assessment given to students will include questions on their understanding of the methods of science inquiry on such topics as the steps of the scientific method, identifying sound science from junk science, interpreting graphics and other data visualizations related to climate change and ecology, creating ecological indices, and assessing environmental conditions. An example question is:

Which of the following best illustrates sound science?

- asking voters to determine if windmills should be placed in their community
- measuring wind velocities to determine the cost-effectiveness of windmills in a region
- selecting a source of energy based upon the maximum yield of tax dollars
- lobbying government officials to increase drilling for offshore oil

For Learning Objective 2 the assessment given to students will include questions to test their basic understanding of concepts and principles in environmental science, ecology, geology, physical geography, and meteorology, among others. Such topics will include ecological identification, global climate change, surface and groundwater, the water cycle, formation of air pollution and smog. Example questions include:

Golden frog populations would be more likely to survive the current threats if:

- their populations were more widely distributed across Central and South America.
- their populations were smaller in size.
- individuals were very similar to each other.
- they only fed on a single type of food.

For Learning Objective 3 the assessment given to students will include questions evaluating their ability to apply scientific principles to interpret and make predictions in the sciences by examining such topics as environmental health based on existing data, projected global climate change from paleoclimate reconstructions, and natural and human-induced ecological change. An example question topic is:

A grasshopper population in a prairie is limited in large part by the number of birds in the region. Following a terrible storm that killed many of the birds, the grasshopper population exhibits exponential growth. This happens because the grasshoppers experienced

- a new biotic potential with steady environmental resistance.
- a new biotic potential with decreased environmental resistance.
- a steady biotic potential but decreased environmental resistance.
- a decreased biotic potential and decreased environmental resistance.

For Learning Objective 4 the assessment given to students will include questions on such topics as how sustainability concepts can be applied in institutional and personal affairs, the importance of biological diversity on environmental health, impact of air and waste pollution on human health, relation of global climate change to environmental and human well-being and economic stability. An example question includes:

Which of the following best illustrates stewardship?

- lobbying government officials to increase the drilling for offshore oil
- selecting a source of energy based upon the maximum yield of tax dollars
- converting automobiles from gasoline to natural gas as a new source of fuel
- promoting the recycling of paper and aluminum on university campuses

Students will be assessed on each of the laboratory assignments that are completed throughout the semester, with each activity getting a little harder from a critical thinking and applied laboratory point-of-view. Through this progression in difficulty, the instructors will be able to evaluate student improvement and understanding of science laboratory techniques as the semester progresses. For example, beginning laboratories will give students an opportunity to collect data in the field and assess these data through guided worksheets. By mid to late semester, students will be able to collect samples (water for example) about a subject and then analyze samples for various water quality parameters using laboratory instrumentation available for use by the GEOG 280 courses.

The pre and post assessments will be evaluated on a pass/fail premise. Each student in the GEOG 280 courses for the entirety of the semester will complete the assessments (completed pre-assessments from students who withdraw from the course before the conclusion of the class will be throw out since no post-assessment can be collected). On the assessment, 70% or above will be considered a passing grade. The department will use the pre and post assessments to establish the percentage of students whose understanding of the learning objectives was changed from the beginning to the end of

the course, and the level of change. This will allow the department to identify if the learning objectives for the colonnade program are being met, and if not will highlight areas that need for attention in forthcoming semesters. Techniques for presenting material may also be changed if it is discovered that learning objectives aren't being met with existing strategies.

5. How many sections of this course will your department offer each semester?

The Department of Geography and Geology will offer a minimum of 1 section of GEOG 280 each academic year with a goal of enrolling 40 students per semester. As enrollment increases, 1 section per semester will be offered, with the same student size target.

6. Please attach sample syllabus for the course. PLEASE BE SURE THE PROPOSAL FORM AND THE SYLLABUS ARE IN THE SAME DOCUMENT.

See Below

Course Syllabus GEOG 280-001

Environmental Science and Sustainability

Instructor:		
E-mail:		
Office Location:		
Office Phone:		
Office Hours:		

Course Description and Learning Objectives: GEOG 280 Environmental Science and Sustainability will introduce the study of environmental science and the interrelationship between humans and their environment in contemporary ecological issues. Specifically, students will gain a general understanding of the principles of environmental science, functions of ecological systems, contemporary environmental conditions and problems, and theories on humanity's place in the world's ecosystems.

For all new students attending WKU for the first time in Fall 2014 or later, the new Colonnade program requirements are in effect. For returning students (those previously enrolled at WKU prior to Fall 2014) the old General Education requirements remain in effect. This course satisfies the General Education Category D Science for returning students. This course also fulfills the Colonnade Program's requirements for the Natural and Physical Sciences (with a lab) subcategory of the Explorations Category for new students. As part of the program, students in GEOG 280 will demonstrate the ability to:

- 5. Demonstrate an understanding of the methods of science inquiry
- 6. Explain basic concepts and principles in one or more of the sciences
- 7. Apply scientific principles to interpret and make predictions in one or more sciences
- 8. Explain how scientific principles relate to issues of personal and/or public importance

The course objectives for GEOG 280 are designed to integrate fully with the Colonnade Program. Upon successfully completing GEOG 280, you will be able to:

- Show an understanding of the scientific method and knowledge of natural science and its relevance in our lives.
- Calculate and evaluate ecological health indices (completed through field-based and laboratory exercises).
- Read and interpret climate change graphs.
- Utilize standard environmental science techniques and equipment for evaluating the environmental condition of a given landscape, including water quality and quantity.

- Describe how environmental science assesses the state of the planet, and explain how sound science, sustainability, and stewardship can help move us toward a sustainable future.
- Describe the difference between sustainability and environmental science, and how these two principles are related.
- Explain the three "E's" of sustainability, with the goal that students be able to propose applications that are relevant, both locally and globally.
- Describe the seven contemporary environmental conditions and problems driving the environmental science discipline, and complete an applied activity with each of these conditions/problems.
- Describe the organization of ecosystems, their responses to disturbance, their distribution across the planet, and how humans affect them.
- Categorize landscapes into one of the ecological system categories by evaluating their characteristics (i.e. animal and plant life presence, weather, water profile, interspecies interactions).
- Explain the differences between groundwater and surface water systems and their interrelationships.
- Explain the formation of air pollution and smog.
- Classify the major categories of air and water pollution and describe the implications for environmental systems.
- Explain the difference between climate change and weather.
- Discuss natural and human-induced factors influencing climate change by explaining the evidence behind climate change science.
- Describe the three main categories of energy resources (renewable, non-renewable fossil fuel, nuclear) including their differences, similarities, pros/cons.
- Outline the contemporary trends in human population and development, and draw conclusions with respect to implications for future environmental change.
- Explain the interrelationship between food production inputs (i.e. soils, fertilizers, water) and outputs (i.e. crop yield, environmental degradation).
- Describe the role of sustainability practices and principles in the balancing present and future human and ecological needs.
- Make predications about groundwater resource inventories and evaluations through application of surface and groundwater principles.

Required Text: Neff, Jason. *REVEL for a Changing Planet*. Pearson Publishing, through Benjamin Cummings. Instant Access Electronic Textbook. ISBN 9780321693907. Cost through publisher is \$85.

At the beginning of the semester, I will send a course invite link to give you access to our specific course textbook (the content is customizable). This textbook can be accessed in two ways. First, you should be able to purchase and access code through the University Textbook Store. You will use this code to access the textbook after you receive a course invite link from me at the beginning of the semester. Second, if you don't want to purchase an access code

through the textbook store, you can purchase the textbook access directly from the publisher with a credit card or PayPal account when you first setup your account with the class. Once you receive the course invite link from me, you will create an account and then be prompted to pay for access (via credit card or PayPal). If you have an access code, you will simply enter your access code at that time. The cost for the access is the same, regardless of whether you purchase an access code from the bookstore or pay for access directly to the publisher with your credit card or PayPal account.

Electronics: Except as made clear by the instructor, no electronic equipment (cell phone, iPad, Laptop, etc.) is allowed to be turned on in the classroom during the class period. If electronic equipment is used without prior permission, points will be deducted from the class attendance and participation grade. If the policy is repeatedly broken, you may be asked to leave the classroom and will receive a zero for the class. If you are asked to leave more than once, you will receive an 'F' in the course. Instructors reserve the right to deduct points for unpermitted electronic equipment use without prior notification.

Grading: GEOG 280 is a critical component of the WKU Department of Geography and Geology, Geography and Environmental Studies Undergraduate Programs. Expectations of students are high. The grade of 'A' is reserved for students who consistently produce excellent work on time, contribute regularly and meaningfully to class discussions, and have exemplary exams and assignments. Adequately completing all assigned work, having successful exams, and contributing to class discussions on a semi-regular basis will result in a grade of 'B' for the course. If a student fails to participate regularly in class discussion or submits work/exams that is late, inconsistent with course standards, and/or incorrect will earn a grade of 'C' or below.

Students will be evaluated in the following areas with the associated point allocations. A standard 10-point grading scale (90-100=A, 80-89=B, etc.) will be used. Instructions for each assignment will be provided in class and/or on Blackboard during the semester. Quizzes may be announced or unannounced. Due dates will be assigned when instructions are distributed.

Lab Activities and Assignments (In-class and Out)	350
2 Pre-Final Exams (150 points per exam)	300
Final Exam	200
Quizzes and Pre-Class Assignments through Textbook	100
Classroom Attendance and Participation	50

Total: 1,000

To calculate your grade in the course, total your points earned in the class to date and divide this total by the total possible points to date; multiple this number by 100. Make sure that you divide your grade by the total possible points AT THE TIME OF CALCULATION. For example,

mid-way through a semester, only 500, not 1000, possible points could have been earned in the course. In this case you would divide your total points (355 for example) by the total possible points to date (500 for example) to learn you have a grade of 71.

Blackboard and REVEL Textbook: The use of Blackboard and the REVEL Textbook online resource are required in this course. If you have any problems, read and follow the instructions on the Blackboard main page (blackboard.wku.edu). Both of these resources will be used to support class content and discussion, as well as make assignments and course readings available. Your grades in the course will be provided through Blackboard.

Grades of Incomplete (X) will only be assigned if all but a small portion of the coursework is left incomplete by the student at the conclusion of the semester and the inability to complete the course is due to circumstances beyond the control of the student. An "X" will be given at the instructor's discretion.

Late and Missed Assignments will be accepted at the instructors' discretion AND on very rare occasion. If a late assignment is accepted the equivalent of a full letter grade will be deducted each day. If the university cancels classes, students are expected to continue with readings and assignments as originally scheduled unless the instructor provides other instructions. No quizzes can be made up, regardless of your reasoning for being absent. You must inform the instructor of an absence, PRIOR to the start of class on the absence day. If you miss class on an in-class activity day, up to half of the possible points for the assignment worked on during your absence will be deducted from the assignment grade.

Class Attendance and Active/Meaningful Participation in all class meetings and activities are mandatory for this course. Unexcused absences merit a failing grade unless a documented excused absence is granted PRIOR to the beginning of the class/activity. Up to 10-points will be deducted from your grade for each absence. Failing to participate meaningfully on a regular basis in class will also result in points deducted from your final course grade.

Schedule Change Policy: The Department of Geography and Geology strictly adheres to University policies, procedures, and deadlines regarding student schedule changes. It is the sole responsibility of the student to meet all deadlines in regard to adding, dropping, or changing the status of a course. Only in exceptional cases will a deadline be waived. The Student Schedule Form requires a written description of the extenuating circumstances involved and the attachment of appropriate documentation. Poor academic performance, general malaise, or undocumented stress will not be considered legitimate circumstances.

Student Disability Services: In compliance with University policy, students with disabilities who require accommodations (academic adjustments and/or auxiliary aids or services) for this course must contact the Office for Student Disability Services in Downing University Center A-200. The OFSDS telephone number is (270) 745-5004; TTY is (270) 745-3030. Per University policy, DO NOT request accommodations directly from the professor or instructor without a letter of accommodation from the Office for Student Disability Services.

Academic Integrity/Plagiarism: Cheating and plagiarism of any kind will absolutely not be tolerated. WKU adheres to a strict policy against plagiarism and cheating (see Scholastic Dishonesty Code in your Handbook). Academic dishonesty of any type will not be tolerated and appropriate penalties will be faced by anyone who violates this policy. Student work may be checked using plagiarism detection software. All academic work of a student must be his/her own. One must give any author credit for source material borrowed. To lift content directly from a source without giving credit is a flagrant act. To present a borrowed passage without reference to the source after having changed a few words is also plagiarism. Other examples of academic dishonesty include, but are not allowing other students to copy your work, using work from previous semesters, and plagiarism. Anyone caught cheating or plagiarizing will receive an 'F' with special designation for plagiarism/cheating. This will remain on your permanent academic record.

The Learning Center (TLC): Should you require academic assistance, TLC provides free supplemental education programs for all currently enrolled WKU students. TLC @ DSU and TLC @ FAC offers certified, one-on-one tutoring in over 200 subjects and 8 academic skill areas by appointment or walk in. Online tutoring is offered to distance learners. TLC is also a quiet study area and offers a 32-machine computer lab to complete academic coursework. TLC has 4 satellite locations; each is a quiet study center equipped with a small computer lab. These satellite locations are located in FAC, Keen Hall, McCormack Hall, and Pearce Ford Tower. Contact TLC @ DSU for more information or to schedule a tutoring appointment. 745-6254.

Proposal Date: January 12, 2016

Ogden College of Science and Engineering Department of Agriculture Proposal to Revise Course Catalog Listing (Consent Item)

Contact Person: Todd Willian, todd.willian@wku.edu, (270) 745-5969

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- 1.1 Course prefix (subject area) and number: AGRI 398
- 1.2 Course title: Seminar
- 2. Current course catalog listing: Current literature from representative journals in the field of agricultural research is reviewed orally by students. Discussion, one hour. A general and specific track seminar are required.
- 3. Proposed course catalog listing: Current literature from representative journals in the field of agricultural research is reviewed orally by students. Discussion, one hour. (aim for 25 words or less)
- 4. Rationale for revision of the course catalog listing: This course currently is taught as one of two required seminars under the same number: AGRI 398. One of these required seminar tracks is being changed to AGRI 397 (Agriculture Career Planning); therefore, language regarding general and specific tracks is no longer applicable.
- 5. Proposed term for implementation: Fall 2016
- 6. Dates of prior committee approvals:

Department of Agriculture	January 28, 2016	
OCSE Curriculum Committee		
Professional Education Council (if applicable)		
General Education Committee (if applicable)		
Undergraduate Curriculum Committee		
University Senate		

Proposal Date: January 4, 2016

OgdenCollege of Science and Engineering Department of Agriculture Proposal to Revise a Program (Consent Item)

Contact Person:	Todd Willian,	todd.willian@wku.edu,	(270)	745-5969
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1. Identification of pro-	ogram:
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- 1.1 Current program reference number: 205
- 1.2 Current program title: Associate Degree in Agricultural Technology and Management Turf and Golf Course Management Option
- 1.3 Credit hours: 60
- 2. Identification of the proposed program changes: Clarifications of general education categories in Colonnade, as compared to the current WKU general education requirements are being identified and proposed.
- 3. Detailed program description:

Current	Proposed		
See attached	See attached		

- 4. Rationale for the proposed program change: Changes have been made in the WKU general education system. The proposed changes in this associate degree program align its general education courses with the appropriate Colonnade categories.
- 5. Proposed term for implementation: Fall 2016
- 6. Dates of prior committee approvals:

Department of Agriculture	October 29, 2015
OCSE Curriculum Committee	
Professional Education Council (if applicable)	
General Education Committee (if applicable)	
Undergraduate Curriculum Committee	
University Senate	-

Program Reference Number: 205

<u>Program Title</u>: Associate Degree in Agricultural Technology and Management – Turf and Golf

Course Management Option

Current

I. Required General Education

Courses - 26 Hours

A. ENG 100 (3)

BIOL 120/121 (4)

CHEM 105/106 (4)

SCOM 161 (3)

MATH 116 (3)

B. Humanities Elective (3)

C. Social & Behavioral Studies (3)

AGRI 108 (3)

II. Required Agriculture Courses – 27

Hours

AGRO 110 (3)

AGRO 350 (3)

AGMC 170/171 (3)

AGMC 172/173 (3)

AGMC 270/271 (3)

AGMC 272/273 (3)

AGMC 371/372 (3)

AGMC 392/393 (3)

HORT 313 (3)

III. Agriculture Electives – 7 Hours

Electives to complete 60 hours can come from any of the following areas: AGEC, AGRI, HORT,

AGRO and/or AGMC

Proposed

I. Required General Education

Courses – 23 Hours

College Composition (WC)

ENG 100 (3)

COMM 145 (3)

Arts & Humanities (AH)

AH course (3)

Social & Behavioral

Sciences (SB)

SB course (3)

Quantitative Reasoning

(QR)

Natural and Physical

Sciences

MATH 116 (3)

CHEM 105/106 (4)

BIOL 120/121 (4)

II. Required Agriculture

Courses – 27 Hours

AGRO 110 (3)

AGRO 350 (3)

AGMC 170/171 (3)

AGMC 172/173 (3)

AGMC 270/271 (3)

AGMC 272/273 (3)

AGMC 371/372 (3)

AGMC 392/393 (3)

HORT 313 (3)

III. Agriculture Electives – 10

Hours

Electives to complete 60 hours can come from any of the following areas: AGEC,

AGRI, HORT, AGRO

and/or AGMC

Proposal Date: 01/29/16

Ogden College of Science & Engineering Department of Chemistry Proposal to Revise Course Catalog Listing (Consent Item)

Contact Person: Prof. Darwin Dahl, darwin.dahl@wku.edu, (270) 745-5074

1. Identification of course:

- 1.1 Course prefix (subject area) and number: CHEM 116
- 1.2 Course title: INTRODUCTION TO COLLEGE CHEMISTRY

2. Current course catalog listing:

Prerequisite: MATH 116 or higher. A one-semester course for students desiring a general survey of chemistry with a mathematical emphasis. An introductory course for College Chemistry students whose ACT score in science and / or mathematics, or whose Chemistry Placement Exam scores would indicate marginal success in CHEM 120. Does not count toward a major / minor in chemistry nor does it satisfy the requirements for certain consumer and family science or agriculture majors. CHEM 106 laboratory is optional. A student cannot use both CHEM 101 and 116 for general education credit. Colonnade E-NS | NS

3. Proposed course catalog listing:

Prerequisite: MATH 116 or higher. A one-semester course for students desiring a general survey of chemistry with a mathematical emphasis. An introductory course for College Chemistry students whose ACT score in mathematics would indicate marginal success in CHEM 120. Does not count toward a major / minor in chemistry nor does it satisfy the requirements for certain consumer and family science or agriculture majors. CHEM 106 laboratory is optional. Colonnade E-NS | NS

4. Rationale for revision of the course catalog listing:

The CPE exam will no longer be used for placement into chemistry courses. The statements pertaining to general education requirements are redundant and have been deleted.

5. Proposed term for implementation: Fall 2016

6.	Dates of prior committee approvals:	to the total of
	Department of Chemistry	01/29/2016
	Ogden College Curriculum Committee	
	Professional Education Council (if applicable)	
	General Education Committee (if applicable)	- Parly manager than 1
	Undergraduate Curriculum Committee	
	University Senate	

Proposal Date: 12/04/2015

Ogden College of Science & Engineering Department of Chemistry Proposal to Revise Course Prerequisites/Corequisites (Consent Item)

Contact Person: Prof. Darwin Dahl, darwin.dahl@wku.edu, (270) 745-5074

Identification of course:

1.

	1.1 1.2	Course prefix (subject area) and number: Course title: INTRODUCTION TO CHEM	
2. Current prerequisites/corequisites/special requirements:			rements:
	Prere	equisites: CHEM 222-223 with a grade of "C"	or better or consent of instructor.
3. Proposed prerequisites/corequisites/spec			rements:
	Prere	equisites: Consent of a faculty research advisor	
4.	Ratio	onale for the revision of prerequisites/corequ	uisites/special requirements:
		revised prerequisites allow for students to pursuorship, at the introductory level of the chemistr	
5. Effect on completion of major/minor sequence:			
	Not a	pplicable. Not a required course.	
6.	Propo	osed term for implementation:	
	Fall 2	016	
7.	Dates	s of prior committee approvals:	
	Depar	rtment of Chemistry	12/04/2015
	Ogder	n College Curriculum Committee	
	Profes	ssional Education Council (if applicable)	
	Gener	ral Education Committee (if applicable)	
	Under	rgraduate Curriculum Committee	
	Unive	ersity Senate	

Proposal Date: 11/20/2015

Ogden College of Science & Engineering Department of Chemistry Proposal to Revise Course Prerequisites/Corequisites (Consent Item)

1.	0	Identification of course:		
		1.1 Course prefix (subject area) and number: CHEM 314		
		1.2 Course title: INTRODUCTORY ORGANIC CHEMI	STRY	
2.		Current prerequisites/corequisites/special requirements:		
		Prerequisites: CHEM 222-223 or permission of instructor.		
3.		Proposed prerequisites/corequisites/special requirements:		
		Prerequisites: CHEM 222-223 with a grade of "C" or better.		
4.		Rationale for the revision of prerequisites/corequisites/spe	cial requirements:	
		The proposed revisions are necessary to ensure that students he prerequisite coursework before taking this course.	ave adequately mastered the	
5.		Effect on completion of major/minor sequence:		
		Not applicable		
6.		Proposed term for implementation:		
		Fall 2016		
7.		Dates of prior committee approvals:		
		Department of Chemistry	11/20/2015	
		Ogden College Curriculum Committee		
		Professional Education Council (if applicable)		
		General Education Committee (if applicable)		
		Undergraduate Curriculum Committee		
		University Senate	New York Control of the Control of t	
		Section of the sectio		

Proposal Date: 11/20/2015

Ogden College of Science & Engineering Department of Chemistry Proposal to Revise Course Prerequisites/Corequisites (Consent Item)

1.	Identification of course:	Identification of course:			
	1.1 Course prefix (subject area) and n				
	1.2 Course title: PRINCIPLES OF IN	ORGANIC CHEMISTRY			
2.	Current prerequisites/corequisites/special requirements:				
	Prerequisites: CHEM 222-223.				
3.	Proposed prerequisites/corequisites/spec	cial requirements:			
	Prerequisites: CHEM 222-223 with a grade	e of "C" or better.			
4.	Rationale for the revision of prerequisite	es/corequisites/special requirements:			
	The proposed revisions are necessary to en prerequisite coursework before taking this	sure that students have adequately mastered the course.			
5.	Effect on completion of major/minor sequence:				
	Not applicable				
6.	Proposed term for implementation:				
	Fall 2016				
7.	Dates of prior committee approvals:				
	Department of Chemistry	11/20/2015			
	Ogden College Curriculum Committee				
	Professional Education Council (if applicable)	le)			
	General Education Committee (if applicabl	e)			
	Undergraduate Curriculum Committee				
	University Senate				

Proposal Date: 12/04/2015

Ogden College of Science & Engineering Department of Chemistry Proposal to Revise Course Prerequisites/Corequisites (Consent Item)

Contact Person: Prof. Darwin Dahl, darwin.dahl@wku.edu, (270) 745-5074

University Senate

	====, ================================	(270) 143-3014
1.	Identification of course: 1.1 Course prefix (subject area) and number: Cl 1.2 Course title: RESEARCH PROBLEMS IN C	HEM 399 CHEMISTRY
2.	Current prerequisites/corequisites/special require	ments:
	Prerequisites: CHEM 452-453 or consent of instructor	or.
3.	Proposed prerequisites/corequisites/special requirements:	
	Prerequisites: Consent of a faculty research advisor.	
4.	Rationale for the revision of prerequisites/corequi	sites/special requirements:
	The revised prerequisites allow for students to pursue appropriate mentorship, as early as the sophomore ye	in-depth research studies for credit, with ar of the chemistry curriculum.
5.	Effect on completion of major/minor sequence:	
	Students can take this required course earlier in their additional opportunities for academic growth and pro-	undergraduate career, which provides fessional development through research.
6.	Proposed term for implementation: Fall 2016	
7.	Dates of prior committee approvals:	
	Department of Chemistry	12/04/2015
	Ogden College Curriculum Committee	
	Professional Education Council (if applicable)	
	General Education Committee (if applicable)	
	Undergraduate Curriculum Committee	

Proposal Date: 01/29/16

Ogden College of Science & Engineering Department of Chemistry Proposal to Revise Course Prerequisites/Corequisites (Consent Item)

Contact Person: Prof. Darwin Dahl, darwin.dahl@wku.edu, (270) 745-5074

University Senate

1.	Identification of course: 1.1 Course prefix (subject area) and number: 0 1.2 Course title: INTRODUCTION TO PHYSI	
2.	Current prerequisites/corequisites/special requirements Prerequisites: CHEM 330 with a grade of "C" or be "C" or better.	
3.	Proposed prerequisites/corequisites/special requiperequisites: A grade of "C" or better in CHEM 31 231 or 255.	
4.	Rationale for the revision of prerequisites/corequenter The proposed revisions are necessary to ensure that mastered prerequisite coursework and cognate cours taking this course.	students have completed and sufficiently
5.	Effect on completion of major/minor sequence: Students will have to take one semester of calculus a complete the major. This course is an elective for cl	and one semester of physics in order to hemistry minors.
6.	Proposed term for implementation: Fall 2016	
7.	Dates of prior committee approvals:	
	Department of Chemistry	01/29/16
	Ogden College Curriculum Committee	
	Professional Education Council (if applicable)	
	General Education Committee (if applicable)	
	Undergraduate Curriculum Committee	

Proposal Date: 12/04/2015

Ogden College of Science & Engineering Department of Chemistry Proposal to Revise Course Prerequisites/Corequisites (Consent Item)

1.	lden	tification of course:		
	1.1	Course prefix (subject area) and number: CHE	M 420	
	1.2	Course title: INORGANIC CHEMISTRY		
2.	Curr	rent prerequisites/corequisites/special requireme	nts:	
	Prere	equisites: CHEM 452-453 or concurrently with 452-	453.	
3.	Prop	osed prerequisites/corequisites/special requirem	ents:	
	Prere	equisites: CHEM 450-451 with a grade of "C" or be	tter.	
4.	Ratio	Rationale for the revision of prerequisites/corequisites/special requirements:		
		M 450-451 is the prerequisite for CHEM 452-453. impler and ensure students have mastered the prerecte.	• •	
5.	Effec	et on completion of major/minor sequence:		
	Not a	pplicable		
6. Proposed term for implementation:				
	Fall 2	2016		
7.	Dates	s of prior committee approvals:		
	Depar	rtment of Chemistry	12/04/2015	
	Ogder	n College Curriculum Committee		
	Profes	ssional Education Council (if applicable)		
	Gener	ral Education Committee (if applicable)		
	Under	rgraduate Curriculum Committee		
	Unive	ersity Senate		

Proposal Date: 11/20/2015

Ogden College of Science & Engineering Department of Chemistry Proposal to Revise Course Prerequisites/Corequisites (Consent Item)

1.	Identification of course: 1.1 Course prefix (subject area) and number: CH 1.2 Course title: INORGANIC CHEMISTRY LA		
2.	Current prerequisites/corequisites/special require	ments:	
	Prerequisite: CHEM 420.		
3.	Proposed prerequisites/corequisites/special require	ements:	
	Prerequisite or corequisite: CHEM 420 with a grade of	f "C" or better.	
4.	Rationale for the revision of prerequisites/corequisites/special requirements:		
	The proposed revisions allow the course to be taken on the latter case, students must have mastered the prerequi-		
5.	Effect on completion of major/minor sequence:		
	Not applicable		
6.	Proposed term for implementation:		
	Fall 2016		
7.	Dates of prior committee approvals:		
	Department of Chemistry	11/20/2015	
	Ogden College Curriculum Committee		
	Professional Education Council (if applicable)		
	General Education Committee (if applicable)		
	Undergraduate Curriculum Committee		
	University Senate		

Proposal Date: 12/04/2015

Ogden College of Science & Engineering Department of Chemistry Proposal to Revise Course Prerequisites/Corequisites (Consent Item)

1. Identification of course:			
	1.1	Course prefix (subject area) and number: CHE	M 430
	1.2	Course title: FORENSIC CHEMISTRY	
2.	Curr	ent prerequisites/corequisites/special requireme	ents:
	Prere	quisite: CHEM 330.	
3.	Prop	osed prerequisites/corequisites/special requiren	nents:
	Prered	quisite: CHEM 314 or 340 and CHEM 330 with a	grade of "C" or better.
4.	Ratio	onale for the revision of prerequisites/corequisit	es/special requirements:
	0.00	roposed revisions are necessary to ensure that studial in both organic and analytical chemistry before	
5.	Effect	Effect on completion of major/minor sequence:	
	Not ap	pplicable. CHEM 430 is not a required course for	the major.
6.	Proposed term for implementation:		
	Fall 20	016	
7.	Dates of prior committee approvals:		
	Depar	tment of Chemistry	12/04/2015
	Ogden	n College Curriculum Committee	
	Profes	ssional Education Council (if applicable)	
	Genera	al Education Committee (if applicable)	
	Under	graduate Curriculum Committee	
	Unive	rsity Senate	

Proposal Date: 12/04/2015

Ogden College of Science & Engineering Department of Chemistry Proposal to Revise Course Prerequisites/Corequisites (Consent Item)

Contact Person: Prof. Darwin Dahl, darwin.dahl@wku.edu, (270) 745-5074

University Senate

1.	Identification of course: 1.1 Course prefix (subject area) and number: CHEM	135
	1.2 Course title: INSTRUMENTAL ANALYSIS	433
2.	Current prerequisites/corequisites/special requiremen	ts:
	Prerequisites: CHEM 452-453.	
3.	Proposed prerequisites/corequisites/special requirement	nts:
	Prerequisites or corequisites: CHEM 450-451 with a grade	e of "C" or better.
4.	Rationale for the revision of prerequisites/corequisites/special requirements: Students frequently require an exception to take CHEM 435 and CHEM 450-451 concurrently in order to graduate within four years. The prerequisites for CHEM 450-451 ensure that students are sufficiently prepared for CHEM 435.	
5.	Effect on completion of major/minor sequence: The revised pre/corequisites streamline entry into CHEM 435. With this change a common prerequisite override is avoided, which allows student to complete most of the upper-level course requirements for the major in one year.	
6.	Proposed term for implementation: Fall 2016	
7.	Dates of prior committee approvals:	
	Department of Chemistry	12/04/2015
	Ogden College Curriculum Committee	
	Professional Education Council (if applicable)	
	General Education Committee (if applicable)	
	Undergraduate Curriculum Committee	

Ogden College of Science & Engineering Department of Chemistry Proposal to Revise Course Prerequisites/Corequisites (Consent Item)

1.	Identification of course: 1.1 Course prefix (subject area) and number: CHEM 450 1.2 Course title: PHYSICAL CHEMISTRY I		
2.	Curre	ent prerequisites/corequisites/special requirements:	
	Prereq	uisites: CHEM 330 and PHYS 265. Corequisites: CH	EM 451 and MATH 137.
3.	Proposed prerequisites/corequisites/special requirements:		
	Prerequisites: A grade of "C" or better in CHEM 314 or 340; CHEM 330; PHYS 231 or 255. Corequisite: CHEM 451. Prerequisites or corequisites: A grade of "C" or better in MATH 137; PHYS 332 or 265.		
4.	Ration	nale for the revision of prerequisites/corequisites/sp	ecial requirements:
	mastere	oposed revisions are necessary to ensure that students ed the prerequisite chemistry coursework and cognate s before taking this course.	have completed and sufficiently coursework in mathematics and
5.	Effect on completion of major/minor sequence: Not applicable		
6.	Proposed term for implementation: Fall 2016		
7.	Dates o	f prior committee approvals:	
	Departn	nent of Chemistry	01/29/16
	Ogden (College Curriculum Committee	
	Professi	onal Education Council (if applicable)	
	General	Education Committee (if applicable)	
	Undergr	raduate Curriculum Committee	
	Universi	ity Senate	

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

Contact Person: Prof. Darwin Dahl, darwin.dahl@wku.edu, (270) 745-5074

1.

1.	Identification of course:				
	1.1	Franciscon (and manifest) Clibit 151			
	1.2	Course title: PHYSICAL CHEMISTRY I LABOR	RATORY		
2.	2. Current prerequisites/corequisites/special requirements:				
	Perequ	uisite: CHEM 330. Corequisite: CHEM 450.			
3.	Propo	Proposed prerequisites/corequisites/special requirements:			
	Coreq	uisite: CHEM 450			
4.	Ratio	nale for the revision of prerequisites/corequisites/	special requirements:		
	The co	orequisite CHEM 450 requires CHEM 330 as a prerealent but more concise.	quisite. The proposed revisions are		
5.	Effect	on completion of major/minor sequence:			
	Not ap	pplicable			
6.	Propos	sed term for implementation:			
	Fall 20	016			
7.	Dates	of prior committee approvals:			
	Depart	ment of Chemistry	11/20/2015		
	Ogden	College Curriculum Committee			
	Profess	sional Education Council (if applicable)			
	Genera	al Education Committee (if applicable)			
	Underg	graduate Curriculum Committee			
	Univers	sity Senate			

Ogden College of Science & Engineering Department of Chemistry Proposal to Revise Course Prerequisites/Corequisites (Consent Item)

Contact Person: Prof. Darwin Dahl, darwin.dahl@wku.edu, (270) 745-5074

Identification of course:

1.

	1.1 1.2	Course prefix (subject area) and number: CHEM 452 Course title: PHYSICAL CHEMISTRY II	2
2.	Current prerequisites/corequisites/special requirements:		
	Prerec	quisites: CHEM 450-451. Corequisite: CHEM 453.	
3.	Proposed prerequisites/corequisites/special requirements:		
	Prereq	uisites: CHEM 450-451 with a grade of "C" or better. C	Corequisite: CHEM 453.
4.	Rationale for the revision of prerequisites/corequisites/special requirements:		
		roposed revisions are necessary to ensure that students huisite material before taking this course.	ave adequately mastered the
5.	Effect on completion of major/minor sequence:		
	Not ap	pplicable	
6.	Propo	sed term for implementation:	
	Fall 20	016	
7.	Dates	of prior committee approvals:	
	Depart	ment of Chemistry	11/20/2015
	Ogden	College Curriculum Committee	
	Profess	sional Education Council (if applicable)	
	Genera	al Education Committee (if applicable)	
	Underg	graduate Curriculum Committee	
	Univer	sity Senate	

Ogden College of Science & Engineering Department of Chemistry Proposal to Revise Course Prerequisites/Corequisites (Consent Item)

. Identification of course:			
1.1 Course prefix (subject area) and number: CHEM 462			
1.2	Course title: BIOINORGANIC CHEMISTRY		
Current prerequisites/corequisites/special requirements:			
Prerec	quisite: CHEM 314 or equivalent.		
Propo	osed prerequisites/corequisites/special requirements:		
Prerec	quisite: CHEM 314 or 340 with grade of "C" or better.		
Ratio	nale for the revision of prerequisites/corequisites/spe	cial requirements:	
		ave adequately mastered the	
Effect	on completion of major/minor sequence:		
Not ap	pplicable		
Proposed term for implementation:			
Fall 20	016		
Dates	of prior committee approvals:		
Depart	tment of Chemistry	11/20/2015	
Ogden	College Curriculum Committee		
Profess	sional Education Council (if applicable)		
Genera	al Education Committee (if applicable)		
Underg	graduate Curriculum Committee		
Univer	rsity Senate	- Annual Control of the Control of t	
	Prerece Propo Prerece Ratio The preperece Effect Not ap Propo Fall 20 Dates Depart Ogden Profes Genera Underg	1.1 Course prefix (subject area) and number: CHEM 462 1.2 Course title: BIOINORGANIC CHEMISTRY Current prerequisites/corequisites/special requirements: Prerequisite: CHEM 314 or equivalent. Proposed prerequisites/corequisites/special requirements: Prerequisite: CHEM 314 or 340 with grade of "C" or better. Rationale for the revision of prerequisites/corequisites/special requirements: The proposed revisions are necessary to ensure that students have prerequisite material before taking this course. Effect on completion of major/minor sequence: Not applicable	

Ogden College of Science & Engineering Department of Chemistry Proposal to Revise Course Prerequisites/Corequisites (Consent Item)

1.			
	1.1 Course prefix (subject area) and number: C		
	1.2 Course title: ADVANCED INVESTIGATI	ONS IN CHEMISTRY LABORATORY	
2. Current prerequisites/corequisites/special requirements:			
	Prerequisite: CHEM 314 or 343.		
3.	Proposed prerequisites/corequisites/special requ	rements:	
	Prerequisite: Permission of the instructor.		
4.	Rationale for the revision of prerequisites/corequ	nisites/special requirements:	
	The proposed revisions are necessary to ensure that students have the prerequisite laboratory skills before taking this course.		
5.	Effect on completion of major/minor sequence:		
	Not applicable		
6.	Proposed term for implementation:		
	Fall 2016		
7. Dates of prior committee approvals:			
	Department of Chemistry	11/20/2015	
	Ogden College Curriculum Committee		
	Professional Education Council (if applicable)		
	General Education Committee (if applicable)		
	Undergraduate Curriculum Committee		
	University Senate		

Ogden College of Science & Engineering Department of Chemistry Proposal to Revise Course Prerequisites/Corequisites (Consent Item)

1.	Identification of course:		
	1.1 Course prefix (subject area)	and number: CHEM 490	
	1.2 Course title: MATERIALS	CHEMISTRY	
2. Current prerequisites/corequisites/special requirements:			
	Prerequisites: CHEM 412 or 452 and	d CHEM 330, or equivalent.	
3.	Proposed prerequisites/corequisite	es/special requirements:	
	Prerequisites: CHEM 330 and CHEM	M 412 or 452 with a grade of "C" or better.	
4.	Rationale for the revision of prered	Rationale for the revision of prerequisites/corequisites/special requirements:	
	The proposed revisions are necessary prerequisite material before taking th	to ensure that students have adequately mastered the is course.	
5.	Effect on completion of major/min	or sequence:	
	Not applicable		
6.	Proposed term for implementation:		
	Fall 2016		
7.	Dates of prior committee approvals	;:	
	Department of Chemistry	11/20/2015	
	Ogden College Curriculum Committe	ee	
	Professional Education Council (if ap	plicable)	
	General Education Committee (if app	licable)	
	Undergraduate Curriculum Committee	е	
	University Senate		

Ogden College Department of Geography and Geology Proposal to Revise Course Catalog Listing (Consent Item)

Contact Person: Leslie North, 5-5982, leslie.north@wku.edu

- 1. Identification of course:
 - 1.1 Course prefix (subject area) and number: GEOG 210
 - 1.2 Course title: Ecological and Environmental Policy
- **2. Current course catalog listing:** A survey of the geography, history, and current conditions of environment and ecological policy development and decision-making, particularly in the U.S. with an examination of the human element as a functional variable within the natural environment.
- 3. Proposed course catalog listing: (aim for 25 words or less)

A survey of the geography, history, and current conditions of environmental policy and regulation development, particularly in the United States, with an emphasis on humans as an integral component of the natural environment.

- **4. Rationale for revision of the course catalog listing:** The new course listing more clearly conveys the topics of GEOG 210 and uses clearer language.
- 5. Proposed term for implementation: Fall 2016
- 6. Dates of prior committee approvals:

Department of Geography and Geology	12/4/2015
Ogden College Curriculum Committee	
Undergraduate Curriculum Committee	
University Senate	

Date: December 4, 2015

Ogden College Department of Geography and Geology Proposal to Revise Course Catalog Listing (Consent Item)

Contact Person: Leslie North, 5-5982, leslie.north@wku.edu

- 1. Identification of course:
 - 1.1 Course prefix (subject area) and number: GEOG 328
 - 1.2 Course title: Elements of Biogeography
- 2. Current course catalog listing: An examination of interrelationships between climatic factors, vegetational biomes, and soil forming processes, as well as human alteration of the biogeographical environment.
- 3. Proposed course catalog listing: (aim for 25 words or less)

An examination of the spatial interaction and distribution of global biomes. This course examines, through examples at a variety of spatial and ecological scales, the development of human-induced and naturally-occurring biogeographical changes.

- **4.** Rationale for revision of the course catalog listing: The new course listing more clearly conveys the topics of GEOG 328.
- 5. Proposed term for implementation: Fall 2016
- 6. Dates of prior committee approvals:

Department of Geography and Geology	<u>12/4/2015</u>
Ogden College Curriculum Committee	
Undergraduate Curriculum Committee	
University Senate	

Ogden College Department of Geography and Geology Proposal to Revise Course Catalog Listing (Consent Item)

Contact Person: Leslie North, 5-5982, leslie.north@wku.edu

- 1. Identification of course:
 - 1.1 Course prefix (subject area) and number: GEOG 344
 - 1.2 Course title: Environmental Ethics
- **2.** Current course catalog listing: Examination of ethical and environmental theory, environmental policy evaluations, philosophy of technology and relevance of environmental ethics in geographic analysis and everyday life.
- 3. Proposed course catalog listing: (aim for 25 words or less)

Examination of how environmental ethics and philosophy determine the use and alteration of the natural environment by humans. Analysis of human responsibility towards protecting the environment, environmental decision-making, sustainable development, and respect for indigenous cultures.

- **4. Rationale for revision of the course catalog listing:** The new course listing more clearly conveys the topics of GEOG 344, using clearer language, particularly since GEOG 210: Environment and Ecological Policy has been adapted to cover a portion of the content previously covered in the ethics course.
- 5. Proposed term for implementation: Fall 2016
- 6. Dates of prior committee approvals:

Department of Geography and Geology	12/4/2015
Ogden College Curriculum Committee	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
Undergraduate Curriculum Committee	
University Senate	

Ogden College Department of Geography and Geology Proposal to Revise Course Catalog Listing (Consent Item)

Contact Person: Leslie North, 5-5982, leslie.north@wku.edu

- 1. Identification of course:
 - 1.1 Course prefix (subject area) and number: GEOG 385
 - 1.2 Course title: Society, Resources, and Climate
- **2.** Current course catalog listing: Discussion of global climate change from a societal and resource perspective. A basic understanding of global climate change and how humans affect such change by studying characteristics such as population size, natural resources, policy, personal behavior, and societal choices.
- **3. Proposed course catalog listing: (aim for 25 words or less)** Discussion of global climate change from a societal and resource perspective; particularly how humans affect global climate change through population size, natural resource use, policy implementation, personal behavior, and societal norms, and vice versa.
- **4. Rationale for revision of the course catalog listing:** The revised course listing more clearly conveys the topics of GEOG 385. Unexpectedly, this course was taught in the same semester as another climate change course (designed to have a different focus) and, through the courses being taught at the same time, the Department became aware of a need to be clearer in the description of the course due to content confusion by students. The content of GEOG 385 remains the same, but the description of the course is changed to reflect the difference between the two courses more accurately.
- 5. Proposed term for implementation: Fall 2016
- 6. Dates of prior committee approvals:

Department of Geography and Geology	12/4/2015
Ogden College Curriculum Committee	
Undergraduate Curriculum Committee	
University Senate	

Ogden College Department of Geography and Geology Proposal to Revise Course Catalog Listing (Consent Item)

Contact Person: Leslie North, 5-5982, leslie.north@wku.edu

- 1. Identification of course:
 - 1.1 Course prefix (subject area) and number: GEOG 427
 - 1.2 Course title: Water Resource Management
- **2.** Current course catalog listing: Opportunities and constraints of natural hydrological processes in maintaining or reclaiming environmental quality. Storm water runoff, floods, droughts, and water resources planning, and development and management.
- **3. Proposed course catalog listing: (aim for 25 words or less):** Examines the use, management, and conservation of water resources. Discusses environmental, economic, political, and social implications of water usage, as well as emerging trends in water availability, pollution, regulation, and technology.
- **4. Rationale for revision of the course catalog listing:** The revised course description more clearly conveys the topics of GEOG 427; particularly, the language helps further distinguish it from other water-related courses in the program. The objectives of the course remain unchanged; the proposed catalog listing change simply makes these distinctions clearer for students.
- 5. Proposed term for implementation: Fall 2016
- 6. Dates of prior committee approvals:

Department of Geography and Geology	<u>12/4/2015</u>
Ogden College Curriculum Committee	
Undergraduate Curriculum Committee	
University Senate	

College Name Department Name Proposal to Revise Course Prerequisites/Corequisites (Consent Item)

Contact Person: Leslie North, leslie.north@wku.edu, 5-5982

University Senate

1.	Identification of course: 1.1 Course prefix (subject area) and number: GEOG 38 1.2 Course title: Global Sustainability	0	
2.	Current <u>prerequisites</u> : 21 hours of Foundations and Explor	ration Courses, or junior status.	
3.	Proposed prerequisites: GEOG 280 OR GEOG/GEOL103 OR instructor's permission; For Colonnade, 21 hours of Foundations and Exploration Courses or junior status.		
4.	Rationale for the revision of prerequisites: An attempt was made to teach the course without an environmental science prerequisite. Without this prerequisite, however, the content that should be covered must be taught at such a low level that the educational experience is eroded. Ensuring students have an environmental science prerequisite should help to ensure the content can be presented as originally intended in the course objectives.		
5.	Effect on completion of major/minor sequence: No effect on majors/minors as they are already required to take GEOG 280 and GEOG/GEOL 103. Any effects would be on students wishing to take the course purely as part of their Colonnade requirements, but both the GEOG 280 and GEOG/GEOL 103 courses are also approved courses in the Colonnade program, so adding this prerequisite does not affect Colonnade requirements.		
ó.	Proposed term for implementation: Fall 2016		
'.	Dates of prior committee approvals:		
	Department of Geography and Geology	12/4/2015	
	Ogden College Curriculum Committee		
	Undergraduate Curriculum Committee		

College Name Department Name Proposal to Revise Course Prerequisites/Corequisites (Consent Item)

Contact Person: Fred Siewers, Fred.Siewers@wku.edu, 5-5988

1.	Identification of course:				
	1.1 Course prefix (subject area) and number: GE	OL 113			
	1.2 Course title: The Earth Laboratory				
2.	Current corequisite: GEOL 111				
3.	Proposed prerequisites/corequisites: Prerequisite or 103	Corequisite GEOL 111 OR GEOG/GEOL			
4.	Rationale for the revision of prerequisites/corequision one semester or later after taking GEOL 111 or GEOG which then requires a manual override. This course is course for GEOL 111 or GEOG/GEOL 103, so it should corequisite requirement.	G/GEOL 103 are blocked from registration, designed to be a stand-alone laboratory			
5.	Effect on completion of major/minor sequence: Nor	ne			
6.	Proposed term for implementation: Fall 2016				
7.	Dates of prior committee approvals:				
	Department of Geography and Geology	12/4/2015			
	Ogden College Curriculum Committee				
	Undergraduate Curriculum Committee				
	University Senate				

Proposal Date: 12/4/2015

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

Contact Person: Jason Polk, jason.polk@wku.edu, 270-745-5015

1.	Identification	of	program
1.	identification	UΙ	program

- 1.1 Program reference number: 298
- 1.2 Program title: Water Resource Management
- 1.3 Credit hours: 60
- 2. Rationale for the program deletion: The WTI program was part of an NSF-funded grant that established an online AS degree for water operators. The program has been relocated a number of times, most recently to the Department of Geography and Geology in partnership with DELO, and the numbers of majors has declined significantly in the past several years due to a lack of tuition scholarships (provided by the NSF grant), low initial number of enrollees, and general lack of need for the career track. Currently, we have no instructors on campus that teach the courses, with adjuncts being the primary instructors, and enrollment in the courses is often 0-<5 students; hence, the program is not sustainable, nor is the Department interested in maintaining an AS program at a predominantly baccalaureate offering institution without the necessary resources to administer the program or a demand for its need.

3. Effect on current students or other departments, if known:

There should be no effect on other departments or degree programs. For the current majors, a total of five declared and two actively enrolled, we will maintain the necessary online courses to attempt to help them complete their degrees based on their collective needs and an exit plan to complete these in a timely manner; however, these students are nontraditional for the most part and all of them have been in the program for a number of years and only take 1-2 courses per year. I have personally contacted and advised the students in the program at this point, and none are actively taking courses in the Spring semester nor do they have a definitive deadline for completing their degree program. If they cannot complete the necessary courses within their allotted degree time, we will seek alternative programs for them to transfer the courses.

- 4. Proposed term for implementation: Fall 2016
- 5. Dates of prior committee approvals:

Department of Geography and Geology	12/4/2015	
Ogden College Curriculum Committee		
Undergraduate Curriculum Committee	-	_
University Senate		

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

Contact Person: Hope Marchionda, hope.marchionda@wku.edu, 5-2961

1.	Ident	ification of course:				
	1.1	Course prefix (subject area) and number:	MATH 205			
	1.2	Course title: Number Systems and Number	er Theory for Teachers			
2.		ent prerequisites/corequisites/special requipletion of General Education Math course				
3.	Proposed prerequisites/corequisites/special requirements: MATH 112 or 116 or 117 or 136 or 183 with a grade of C or better					
4.	Rationale for the revision of prerequisites/corequisites/special requirements: Based on departmental evaluation of student success in MATH 205, MATH 112 was created to replace MATH 109T (a special section of MATH 109 for elementary education majors) and eliminate MATH 109, which is intended as a terminal course, as a prerequisite. In addition, listing the other Colonnade courses that satisfy the prerequisite eliminates confusion.					
5.	Effect None	t on completion of major/minor sequence:				
6.	Propo Fall 20	osed term for implementation: 017				
7.	Dates of prior committee approvals:					
	Mathe	ematics Department	1-21-16			
	Ogden	n College Curriculum Committee				
	Profes	sional Education Council				
	Under	graduate Curriculum Committee				
	Unive	rsity Senate				
		-				

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

Contact Person: Hope Marchionda, hope.marchionda@wku.edu, 5-2961

Identification of course:

1.

	1.1 1.2	Course prefix (subject area) and number Course title: Fundamentals of Geometry					
2.	Current prerequisites/corequisites/special requirements: Completion of general education math course and MATH 205 with grades of C or better						
3.	Proposed prerequisites/corequisites/special requirements: MATH 205 with grade of C or better						
4.	Rationale for the revision of prerequisites/corequisites/special requirements: In addition to a change in University terminology, the requirement to complete a Colonnade class is prerequisite for MATH 205. The proposed change eliminates redundancy.						
5.	Effect on completion of major/minor sequence: None						
6.	Propo Fall 20	osed term for implementation: 016					
7.	Dates	of prior committee approvals:					
	Mathe	ematics Department	1-21-16				
	Ogden	College Curriculum Committee					
	Profes	sional Education Council					
	Under	graduate Curriculum Committee					
	Unive	rsity Senate					

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

Contact Person: Hope Marchionda, hope.marchionda@wku.edu, 5-2961

1.	Identification of course:1.1 Course prefix (subject area) and1.2 Course title: Functions, Applications					
2.	Current prerequisites/corequisites/sp MATH 136 with a grade of C or bet	ecial requirements: ter, or permission of instructor				
3.	Proposed prerequisites/corequisites/special requirements: MATH 137 or MATH 225 with a grade of C or better					
4.	Departmental evaluation of student success in MATH 304 indicated that students possessed deficiencies in their ability to generalize, reason abstractly, and justify their reasoning. As a result, MATH 225 was created to address these issues. By changing the prerequisite to MATI 137 or MATH 225, both middle grades and secondary teachers will have to successfully com at least two courses that require a higher level of abstract thinking.					
5.	Effect on completion of major/minor None	sequence:				
6.	Proposed term for implementation: Fall 2017					
7.	Dates of prior committee approvals:					
	Mathematics Department	1-21-16				
	Ogden College Curriculum Committee					
	Professional Education Council					
	Undergraduate Curriculum Committee					
	University Senate					

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

Contact Person: Hope Marchionda, hope.marchionda@wku.edu, 5-2961

1.	Ident	Identification of course:					
	1.1	Course prefix (subject area) and number: MATH	308				
	1.2	Course title: Rational Number and Data Analysis	for Teachers				
2.	Curre Comp	ent prerequisites/corequisites/special requirement pletion of MATH 205 with a grade of C or better	ts:				
3.	Proposed prerequisites/corequisites/special requirements: MATH 205 with grade of C or better						
4.	Rationale for the revision of prerequisites/corequisites/special requirements: MATH 308 is the third course in a three-course sequence. This prerequisite revision is to align the wording of the prerequisite with the other two courses in the sequence.						
5.	Effect None	t on completion of major/minor sequence:					
6.	Propo Fall 20	osed term for implementation: 016					
7.	Dates	of prior committee approvals:					
	Mathe	matics Department	1-21-16				
	Ogden	College Curriculum Committee					
	Profess	sional Education Council (if applicable)					
	Underg	graduate Curriculum Committee					
	Univer	rsity Senate					

Proposal Date: Januray 4, 2016

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

Contact Person: Sharon Mutter, sharon.mutter@wku.edu, 5-4389

1.	Identification of course:					
	1.1 PSYS 462					
	1.2 Course title: Neuroscience of Learning and Memory					
2.	Current prerequisites/corequisites/special requirements: PSYS 331 or PSYS 333, or PSYS 360 or permission of the instructor					
3.	Proposed prerequisites/corequisites/special requirements: PSYS 210 and PSY 211 with a C obetter or permission of the instructor	or				
4.	Rationale for the revision of prerequisites/corequisites/special requirements: Successful performance in the class does not require a background in the current prerequisite courses but students will need a basic understanding of research methods and experimental design in psychological science.					
5.	Effect on completion of major/minor sequence: None					
6.	Proposed term for implementation: Fall 2016					
7.	Dates of prior committee approvals:					
	Department of Psychological Sciences					
	OCSE Curriculum Committee					
	University Curriculum Committee					
	University Senate					

Proposal Date: January 12, 2016

Ogden College of Science and Engineering Department of Agriculture Proposal to Revise Course Credit Hours (Action Item)

Contact Person:	Paul Woosley,	paul.woosley@wku.edu,	(270)7	45-5967
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1. Identification of course:	1.	Identification	of	course:	
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- 1.1 Current course prefix (subject area) and number: AGRI 175
- 1.2 Course title: University Experience Agriculture Majors
- 1.3 Credit hours: 2.0
- 2. Proposed course credit hours: 1.0
- 3. Rationale for the revision of course credit hours: This course utilizes guest speakers and outside assignments to address topics that assist students in transitioning to college as well as develop an academic plan for graduating on schedule. While the department feels this course provides essential information for incoming agriculture students, course content and work load for students mirrors requirements from other 1-credit-hour courses within the department. Additionally, reduction in credit from 2 hours to 1 hour could encourage students to enroll in other courses related to their field of study, especially during their first semester at WKU.
- 4. Proposed term for implementation: Fall 2016
- 5. Dates of prior committee approvals:

Department of Agriculture	January 28, 2016
OCSE Curriculum Committee	
Professional Education Council (if applicable)	
General Education Committee (if applicable)	
Undergraduate Curriculum Committee	-
University Senate	

Proposal Date: October 19, 2015

Ogden College of Science and Engineering Department of Agriculture Proposal to Discontinue Course Equivalencies (Action Item)

Contact Person: Todd Willian, todd.willian@wku.edu, 745-5969

1.	Identification	of	the	equivalent	courses:	
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- 1.1 Course prefixes (subject areas) and numbers: AGRI 280, ENV 280/PH 280, BIOL 280, CHEM 280
- 1.2 Course Title: Introduction to Environmental Science
- 2. Rationale for discontinuing equivalency: Currently this course is only being offered regularly in the Departments of Agriculture (AGRI 280) and Public Health (ENV 280), which are housed in different colleges. Public health faculty teach the course from a public health perspective, while agriculture faculty teach from an agriculture perspective. Therefore, we believe that the two courses are substantially different and should no longer be considered equivalent. It is our understanding that CHEM 280 has not been taught since 2002; additionally, it no longer appears in the catalog. The Department of Biology may be considering offering a different course to replace BIOL 280.
- 3. Effect of discontinuing equivalency on programs or other departments, if known: no effect is anticipated.
- 4. Proposed new course number (for main campus or "C" course discontinued equivalencies only): not applicable
- 5. Proposed term for implementation: Fall 2016
- 6. Dates of prior committee approvals:

Department of Agriculture	October 29, 2015		
OCSE Curriculum Committee			
Professional Education Council (if applicable)			
General Education Committee (if applicable)	4		
Undergraduate Curriculum Committee			
University Senate			

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

Contact Person: Cris Scudder

Email: cris.scudder@wku.edu

Phone: 270 745-2969

1. Identification of proposed course:

- 1.1 Course prefix (subject area) and number: AGMC 425
- 1.2 Course title: Applied Hydraulics and Pneumatics
- 1.3 Abbreviated course title: App. Hydraulics and Pneumatics (maximum of 30 characters or spaces)
- 1.4 Credit hours: 3

Variable credit (yes or no): NO

- 1.5 Grade type: Standard letter grade
- 1.6 Prerequisites: Math 116 or higher.
- 1.7 Course description: Lecture and Lab. Study of the fundamental principles of hydraulic and pneumatic systems and their application to mobile and stationary agriculture and construction machinery.

2. Rationale:

- 2.1 Reason for developing the proposed course:
 - Hydraulic and pneumatic systems are an integral part of most machinery used in the agricultural industry. As the industry continues to develop a safer work environment and more efficient equipment to design reliability into equipment systems, hydraulics and pneumatics are being used to meet and solve these growing issues of safety and reliability. Most of our graduates will encounter some form of one of these systems in their daily operation and so this course will prepare students to operate, troubleshoot and service these systems. This course supports Objective 1 of the University's strategic plan, to foster academic excellence.
- 2.2 Projected enrollment in the proposed course: 20 to 25 per semester based upon previous offerings.
- 2.3 Relationship of the proposed course to courses now offered by the department: This course would expand upon topics discussed in AGMC 377 (Farm Machinery), AGMC 373 (Farm Power), AGMC 178 (Agriculture Safety), HORT 313 (Turfgrass Management), AGMC 270 (Turf Mowing Equipment Maintenance), AGMC 272 (Turf Equipment Management and Operation), and AGMC 172 (Lawn and Garden Equipment)
- 2.4 Relationship of the proposed course to courses offered in other departments:

 There is currently no applied hydraulics or pneumatics being taught by other departments at Western Kentucky University. Architectural and Manufacturing Sciences has stated they would make this course an option for students from their program.

2.5 Relationship of the proposed course to courses offered in other institutions: Many institutions offer similar courses. Comparable courses include: CE 34000/343000 (Hydraulics and Elementary Hydraulics Lab), Purdue University; AGR 362 (Hydraulics), Eastern Kentucky University; and ENE 422 (Applied Hydraulics), Michigan State University.

3. Discussion of proposed course:

- 3.1 Schedule type: C
- 3.2 Learning Outcomes: Upon completion of this course student should be able to:
 - Explain the basic principles of hydraulics and pneumatics.
 - Explain how the different types of hydraulic and pneumatic components operate.
 - Construct safe, workable hydraulic and pneumatic circuits
 - Draw hydraulic and pneumatic circuits using correct symbols.
 - Explain the application of hydraulic and pneumatic equipment to agricultural machinery.
 - Explain how open-center systems operate.
 - Explain how closed-center systems operate.
 - Identify the parts of a hydraulic and pneumatic system.
 - Do simple troubleshooting of hydraulic and pneumatic systems.
 - Disassemble and do simple repairs of hydraulic and pneumatic components.

3.2 Content outline:

- Basic physical principles
- Symbols and circuit diagrams
- Actuators
- Pumps
- Valves
- Accumulators and lines
- Motors
- Open and closed systems
- Hydrostatic drives
- System troubleshooting
- Conditioning system fluids (air and liquid)
- 3.3 Student expectations and requirements: Students will be evaluated on:
 - Written exams and quizzes
 - Problem solving homework
 - Attendance
 - Participation in shop work
- 3.4 Tentative texts and course materials:

Fluid Power, Hydraulics and Pneumatics by James R. Daines. ISBN 978-1-60525-081-6 Other references may be assigned.

4.	Resource	*****	
т.	4.1	Library resources: None required	
	4.2	Computer resources: none required	
5.	Budget	implications:	
	5.1	Proposed method of staffing: Full time Faculty	
	5.2	Special equipment needed: none	
	5.3	Expendable materials needed: N/A	
	5.4	Laboratory materials needed: N/A	
7.	Dates of p	orior committee approvals:	
		-	. 1
	Departmen	nt of Agriculture	1/28/15
	OCSE Cui	riculum Committee	
	Profession	al Education Council (if applicable)	
General Education Committee (if applicable)			
	Undergrad	uate Curriculum Committee	

University Senate

Proposal Date: January 7, 2016

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, (270) 745-5969

1. Identification of proposed course:

- 1.1 Course prefix (subject area) and number: AGRI 397
- 1.2 Course title: Agriculture Career Planning
- 1.3 Abbreviated course title: Agriculture Career Planning (maximum of 30 characters or spaces)
- 1.4 Credit hours: 1.0

Variable credit (yes or no) no

- 1.5 Grade type: standard letter grade
- 1.6 Prerequisites/corequisites: Prerequisites: Junior or senior standing in agriculture or permission of instructor.
- 1.7 Course description: Job search preparation, including completion of a resume, cover letter and mock interview. Options for obtaining graduate education and internship experience are also explored. Outside speakers from the agriculture industry are included.

2. Rationale:

- 2.1 Reason for developing the proposed course: This course currently is taught as one of two required seminars under the same number: AGRI 398 (Seminar:General). It shares that prefix and number with specific track seminars that differ from it in content and learning outcomes. Development of this 'new' course, AGRI 397, now will accurately reflect the content to both students and potential employers. Henceforth AGRI 398 will refer only to the specific track seminars.
- 2.2 Projected enrollment in the proposed course: 40 to 45 per semester based upon previous offerings.
- 2.3 Relationship of the proposed course to courses now offered by the department: This course complements our AGRI 175 University Experience course. While AGRI 175 orients freshmen students to our department and our university, AGRI 397 completes the learning continuum by preparing upperclassmen for careers within the discipline. Additionally, AGRI 397 is a component of our required core classes for our 4-year and 2-year programs.
- 2.4 Relationship of the proposed course to courses offered in other departments: A number of departments offer similar courses that focus upon career planning for a specific discipline. Examples of comparable courses include GEOG 499 (Professional Preparation), ENV 486 (Senior Environment Health Seminar), BA 495 (Career Development Attendance) and CHEM 398 (Undergraduate Seminar).

2.5 Relationship of the proposed course to courses offered in other institutions: Many institutions offer similar courses. Comparable courses include: AGRI 323 (Career Development in Agriculture), Southern Illinois University; Agriculture 100 (Job Search Skills and Strategies for Technical Careers), Pennsylvania State University; and AEC 301 (Career Readiness for Agriculture Economics), University of Kentucky.

3. Discussion of proposed course:

- 3.1 Schedule type: L
- 3.2 Learning Outcomes: Upon completion of this course students will have gained:
 - Understanding of how to prepare a professional resume
 - Knowledge of how to conduct a job search and prepare a cover letter specific to a particular job posting
 - Practical experience in an interview setting via completion of a mock interview
 - Familiarity with graduate education opportunities and application procedures
 - Knowledge of important issues encountered in the Agri-Business environment via industry speakers

3.3 Content outline:

- Preferred skills agriculture employers seek
- Resume development
- Matching a cover letter to a job description
- Interviewing do's and don'ts
- Job searches
- Graduate study and internship opportunities
- Mock interview performance analysis
- Perspectives of current agriculture professionals

3.4 Student expectations and requirements:

Quizzes, resume development and editing, cover letter preparation, completion of a mock interview.

3.5 Tentative texts and course materials:

Dupuy, G.M. and D.H. Dupuy. (2003) Career Preparation: Transition Guide for College Students. Prentice Hall, 192 p.

Pollak, L. (2007) Getting from College to Career: 90 Things to do Before you Join the Real World. Collins Press, 287 p.

4. Resources:

- 4.1 Library resources: see Library Resource Form and Bibliography
- 4.2 Computer resources: adequate

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: Fall 2016

7. Dates of prior committee approvals:

Department of Agriculture	January 28, 2016
OCSE Curriculum Committee	
Professional Education Council (if applicable)	
General Education Committee (if applicable)	
Undergraduate Curriculum Committee	
University Senate	

Proposal Date: October 19, 2015

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

Contact Person: Todd Willian, todd.willian@wku.edu, (270) 745-5969

1. Identification of course:

- 1.1 Current course prefix (subject area) and number: AGRO 317
- 1.2 Course title: Plant Pathology

2. Revise course title: n/a

- 2.1 Current course title: n/a
- 2.2 Proposed course title: n/a
- 2.3 Proposed abbreviated title: n/a
- 2.4 Rationale for revision of course title: n/a

3. Revise course number:

- 3.1 Current course number: 317
- 3.2 Proposed course number: 418
- 3.3 Rationale for revision of course number: Because of the level of difficulty of this course, in which students are required to learn the scientific names of many pathogenic organisms and their life cycles, we believe it would be more appropriate to offer Plant Pathology at the 400 level. Moreover, the Agriculture Department attempts to group together courses with overlapping subject areas. In this case, we believe that Plant Pathology as AGRO 418 would pair well with Weed Science (AGRO 409/410) for students at the senior level.

4. Revise course prerequisites/corequisites/special requirements:

- 4.1 Current prerequisites/corequisites/special requirements: (indicate which) Current prerequisites are: AGRO 110 or permission of instructor.
- 4.2 Proposed prerequisites/corequisites/special requirements: AGRO 110, BIOL 120 and AGRO 350 or permission of instructor.
- 4.3 Rationale for revision of course prerequisites/corequisites/special requirements: Due to the emphasis placed upon both fungal structures and life cycles, and soil-borne pathogens, we feel it is imperative that students receive prior instruction regarding fungi (BIOL 120) and soil science (AGRO 350).
- 4.4 Effect on completion of major/minor sequence: not applicable

5. Revise course catalog listing: n/a

- 5.1 Current course catalog listing: n/a
- 5.2 Proposed course catalog listing: n/a
- 5.3 Rationale for revision of course catalog listing: n/a

6.	Revis	se course credit hours: n/a				
	6.1	Current course credit hours: n/a				
	6.2	Proposed course credit hours: n/a				
	6.3	Rationale for revision of course credit hours: n/a				
7. Revise grade type: n/a						
	7.1	Current grade type: n/a				
	7.2	Proposed grade type: n/a				
	7.3	Rationale for revision of grade type: n/a				
8.	1.00	osed term for implementation: Fall 2016				
9.	Dates	s of prior committee approvals:				
	Depar	rtment of Agriculture	October 29, 2015			
	OCSE	E Curriculum Committee	(Manage 1)			
	Professional Education Council (if applicable)					
	General Education Committee (if applicable)					
	Under	rgraduate Curriculum Committee				
	Unive	ersity Senate				

Proposal Date: 09/09/2015

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

Contact Person: Rodney King, rodney.king@wku.edu, 745-6910

1. Identification of proposed course:

- 1.1 Course prefix (subject area) and number: BIOL 212
- 1.2 Course title: Genome Discovery and Exploration
- 1.3 Abbreviated course title: Genome Discovery
- 1.4 Credit hours: 2
- 1.5 Grade type: Standard letter grade
- 1.6 Prerequisites: None
- 1.7 Course description: Discovery, characterization, and genomic analysis of viruses from sample collection and purification through DNA isolation and analysis.

 *Course Fee

2. Rationale:

- 2.1 Reason for developing the proposed course: Science education in the U.S. is under a mandate to be transformed in response to declines in science and technology competence and national competitiveness. Several recent publications have emphasized the critical importance of hands-on, inquiry-based laboratory experiences, research opportunities, and complex data analysis for transformative undergraduate STEM education. This course provides students with a research-based, learning experience that has a proven track record at WKU and at institutions across the country. The cumulative data describing the SEA-PHAGES (Science Education Alliance-Phage Hunters Advancing Genomics and Evolutionary Science) program was recently published (2014; mBio 5(1): doi:10.1128/mBio.01051-13).
- 2.2 Projected enrollment in the proposed course: Anticipated 18 students per section based on the previous enrollment in the pilot course and the availability of laboratory space in EBS 3105 and EBS 3109. Two sections were offered during the fall 2013, 2014 and 2015 semesters. We anticipate future expansion of the course due to high demand, particularly from the Gatton Academy of Science and Mathematics.
- 2.3 Relationship of the proposed course to courses now offered by the department: The Genome Discovery course provides a pipeline of students who are prepared to take the research project to the next stage, the annotation of newly sequenced viral genomes. Thus, the Genome Discovery course dovetails perfectly with the Biology Department's Bioinformatics course. The newly sequenced genomes form the basis of the annotation projects that are completed by students who take the Bioinformatics course.

- 2.4 Relationship of the proposed course to courses offered in other departments: There is currently no similar science process-oriented course offered at WKU where freshmen and sophomores discover and characterize new viruses from environmental samples.
- 2.5 Relationship of the proposed course to courses offered in other institutions: Over 70 schools throughout the U.S. and Puerto Rico offer the HHMI SEA-PHAGES course. WKU is the only institution in Kentucky that has participated in the HHMI SEA-PHAGES program. Currently, the only benchmark institution that offers a similar course-based research experience is James Madison University (BIO 203. Viral Discovery 2 credits).

3. Discussion of proposed course:

- 3.1 Schedule type: R
- 3.2 Learning outcomes:
 - 1. Explain the process of scientific inquiry and the importance of using controls in scientific experiments. Identify reasons why a particular line of inquiry warrants investigation.
 - 2. Use common laboratory equipment and chemical reagents safely and successfully
 - 3. Perform common laboratory techniques, explain the purpose of each technique and identify the limitations of the technique
 - 4. Plan experiments, generate, record and organize experimental data (using tables, diagrams and drawings as appropriate), analyze and interpret data, and draw logical conclusions based upon collected data.
 - 5. Identify and describe the characteristics of bacteriophages and their bacterial host, including their chemical composition, structure, replication, genetics, and metabolism.
 - 6. Differentiate bacterial colonies and bacteriophage plaques
 - 7. Track expenses associated with a research project.
 - 8. Apply techniques in microbiology, molecular biology and electron microscopy for the isolation and characterization of bacteriophages from the environment
 - 9. Organize and disseminate data on web-based databases and communicate research results to the scientific community
 - 10. Discuss the role of bacteriophages in the biosphere and on human health

3.3 Content outline:

- Microbiological Principles
 - Aseptic technique
 - Safe handling of microbes
 - Proper disposal of bio-hazardous waste
 - Bacterial nutrition and growth
- Bacteriophage biology
 - Bacteriophage ecology
 - The role of bacteriophages in bacterial evolution and disease
 - Phage therapy
 - Isolation of viruses from the soil

- Growing pure viral populations
 - o Enumeration of active bacteriophages particles
 - Phage lifestyles (lytic vs lysogenic cycles)
 - o Primary literature reading responses
- Microscopy
 - o Basic principles of electron microscopy
 - o Morphology of phage particles
- Molecular biology
 - o Properties of biological macromolecules
 - o Purification of DNA from bacteriophage particles
 - Quantitation of DNA using spectrophotometry
 - Basic principles of enzymes
 - o Analysis of DNA using restriction enzymes
 - o Principles of electrophoresis
 - o Image capturing and analysis
- Research Project Logistics
 - o Set up and maintenance of research notebook
 - o Tracking research expenses
 - o Presentation of scientific data (poster presentation)
- 3.4 Student expectations and requirements: Experimental progress, proper laboratory notebook maintenance, proper posting of data on the course web site (phagesdb.org), exams to measure content mastery, written evaluation of primary scientific articles, and a poster presentation detailing the results of their project.
- 3.5 Tentative texts and course materials: Required text book: The student lab manual, also called the "Resource Guide" is freely available online (http://161.6.84.78/SGD/SEA+Lab+Manual+2013.pdf). Additional instructional material will be made available through the course blackboard site.

4. Resources:

- 4.1 Library resources: Adequate. Access to primary scientific literature and suggested readings.
- 4.2 Computer resources: Adequate.

5. Budget implications:

- Proposed method of staffing: Dr. Rodney King and Dr. Claire Rinehart, who are Professors in the Department of Biology and have co-directed this course at WKU since its inception in 2009, will be the primary instructors for this course. This course has already been established as a regular part of their annual teaching responsibilities
- 5.2 Special equipment needed: All necessary equipment is currently available in the teaching labs and the Biotech Center.
- 5.3 Expendable materials needed: None
- 5.4 Laboratory materials needed: None

6. Proposed term for implementation: Fall 2016

7.	Dates	of	prior	committee	ar	proval	S
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Department of Biology	September 25, 2015		
Ogden College Curriculum Committee			
Undergraduate Curriculum Committee			
University Senate			

Attachment: Bibliography, Library Resources Form, Course Inventory Form

Bibliography for proposed course: BIOL 212, Genome Discovery and Exploration

Journal titles needed/recommended

Needed:
Journal of Virology
Journal of Bacteriology

Recommended:
Proceedings of the National Academy of Science

LIBRARY RESOURCES, page 1 of 2 Revised April 2008

Date: November 10, 2015 Proposed Course Name and Number: Genome Discovery and Exploration, BIOL 212 Current Library holdings in support of the course are: X adequate inadequate* library resources not needed for course** * Inadequate library support will NOT delay approval. If support is adequate, additional materials may still be recommended. ** Library is not responsible for supporting course if this option is chosen. I. Books/Electronic Resources/Other. Please list key titles, whether or not library already owns; attach course reading list, if any; library materials to be placed on reserve; wish list. If reading list not yet compiled, send asap. Attach additional sheet(s) if needed. No books required. Laboratory manual is provided free of charge and other resources are also available free of charge from the internet. II. Key journal titles needed/recommended: Needed: Journal of Virology Journal of Bacteriology Recommended: Proceedings of the National Academy of Science

LIBRARY RESOURCES, page 2 of 2

Please submit tentative course proposal to Liaison Librarian before departmental curriculum committee meeting when proposal will be considered. This form will be signed and returned to proponent within three working days.

Find Your Liaison Librarian: http://www.wku.edu/Library/dlps/lia_dept.htm

Questions or problems?

Contact Jack Montgomery, jack, montgomery@wku.edu Coordinator, Collection Services Or UCC Library Representative http://www.wku.edu/ucc/guidelines.html

Rodney King
Faculty Member Proposing Course

Liaison Librarian

Coordinator, Collection Services

Proposal Date: 12/04/15

Ogden College of Science & Engineering Department of Chemistry Proposal to Make Multiple Revisions to a Course (Action Item)

Contact Person: Prof. Darwin Dahl, darwin.dahl@wku.edu, (270) 745-5074

1. Identification of course:

- 1.1 Current course prefix (subject area) and number: CHEM 120
- 1.2 Course title: College Chemistry I

2. Revise course title: n/a

- 2.1 Current course title:
- 2.2 Proposed course title:
- 2.3 Proposed abbreviated title:
- 2.4 Rationale for revision of course title:

3. Revise course number: n/a

- 3.1 Current course number:
- 3.2 Proposed course number:
- 3.3 Rationale for revision of course number:

4. Revise course prerequisites/corequisites/special requirements:

4.1 Current prerequisites/corequisites/special requirements: (indicate which)

Prerequisite: Satisfactory score on Chemistry Placement Exam or CHEM 116 with a grade of "C" or higher. Corequisites: CHEM 121. Prerequisite or corequisite: MATH 117 or higher.

4.2 Proposed prerequisites/corequisites/special requirements:

Prerequisite: Satisfactory Math ACT score or equivalent or MATH 116 with a grade of "C" or better. Corequisite: CHEM 121.

4.3 Rationale for revision of course prerequisites/corequisites/special requirements:

The revised prerequisites are intended to ensure that students have the necessary background in algebra to be successful in CHEM 120. Math ACT is an equivalent but more efficient metric than CPE for placement into general chemistry. CPE will no longer be required to place into general chemistry.

CHEM 120 is entirely algebra-based; hence, MATH 116 is the necessary prerequisite and the MATH 117 corequisite has been removed. CHEM 120 assumes students have no prior college-level experience in chemistry; therefore, CHEM 116 is not a required prerequisite.

The prerequisite "Satisfactory Math ACT score or equivalent" will be coded in Topnet as follows:

Math ACT score of 26 or better
OR (Math ACT score of 22.25 AND)

OR (Math ACT score of 22-25 AND MPE score of 18 or better)

OR (Math SAT of 590 or better)

OR (Math SAT score of 510-589 AND MPE score of 18 or better)

OR (Math SAT score of 510-589 AND MPE score of 18 or better)

4.4 Effect on completion of major/minor sequence:

Not applicable.

5. Revise course catalog listing:

5.1 Current course catalog listing:

The beginning course in chemistry for science majors and minors. It also can be used for general education requirement. Covering the first half of the standard first year chemistry course, it is recommended that high school chemistry and a strong high school mathematics background precede this course.

5.2 Proposed course catalog listing:

The first half of the standard yearlong general chemistry course sequence for science majors and minors.

5.3 Rationale for revision of course catalog listing:

Information about general education and high school preparation in chemistry and mathematics is redundant (i.e., it duplicates already listed Colonnade codes and prerequisite) and has been removed from the proposed course description.

6. Revise course credit hours: n/a

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

7. Revise grade type: n/a

- 7.1 Current grade type:
- 7.2 Proposed grade type:
- 7.3 Rationale for revision of grade type:

8. Proposed term for implementation:

Fall 2016

9. Dates of prior committee approvals:

Department of Chemistry	12/04/15	
Ogden College Curriculum Committee		
Professional Education Council (if applicable)		
General Education Committee (if applicable)		
Undergraduate Curriculum Committee		
University Senate		

Proposal Date: 12/04/2015

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

Contact Person: Prof. Darwin Dahl, darwin.dahl@wku.edu, (270) 745-5074

1. Identification of course:

- 1.1 Current course prefix (subject area) and number: CHEM 222
- 1.2 Course title: College Chemistry II

2. Revise course title: n/a

- 2.1 Current course title:
- 2.2 Proposed course title:
- 2.3 Proposed abbreviated title:
- 2.4 Rationale for revision of course title:

3. Revise course number: n/a

- 3.1 Current course number:
- 3.2 Proposed course number:
- 3.3 Rationale for revision of course number:

4. Revise course prerequisites/corequisites/special requirements:

4.1 Current prerequisites/corequisites/special requirements: (indicate which)

Prerequisites: CHEM 120-121 with a grade of "C" or better and MATH 118. Corequisite: CHEM 223.

4.2 Proposed prerequisites/corequisites/special requirements:

Prerequisite: CHEM 120-121 with a grade of "C" or better. Corequisite: CHEM 223.

4.3 Rationale for revision of course prerequisites/corequisites/special requirements:

The course is entirely algebra-based; therefore no mathematics beyond MATH 116 is required. CHEM 120 already requires MATH 116 as a prerequisite; therefore, CHEM 120-121 is the only necessary prerequisite.

4.4 Effect on completion of major/minor sequence:

Not applicable.

5. Revise course catalog listing:

5.1 Current course catalog listing:

A continuation of the first year course in chemistry for science majors and minors. It is also satisfactory for general education requirements for non-science majors and minors.

5.2 Proposed course catalog listing:

A continuation of the standard yearlong general chemistry course sequence for science majors and minors.

5.3 Rationale for revision of course catalog listing:

The general education statements in the current catalog listing are pre-Colonnade and are no longer applicable. The revised text uses wording that matches proposed revisions for CHEM 120.

6. Revise course credit hours: n/a

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

7. Revise grade type: n/a

- 7.1 Current grade type:
- 7.2 Proposed grade type:
- 7.3 Rationale for revision of grade type:

8. Proposed term for implementation:

Fall 2016

9. Dates of prior committee approvals:

Department of Chemistry	12/04/2015
Ogden College Curriculum Committee	
Professional Education Council (if applicable)	
General Education Committee (if applicable)	
Undergraduate Curriculum Committee	
University Senate	

Proposal Date: 12/04/2015

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

Contact Person: Prof. Darwin Dahl, darwin.dahl@wku.edu, (270) 745-5074

- 1. Identification of course:
 - 1.1 Current course prefix (subject area) and number: CHEM 223
 - 1.2 Course title: College Chemistry II Laboratory
- 2. Revise course title: n/a
 - 2.1 Current course title:
 - 2.2 Proposed course title:
 - 2.3 Proposed abbreviated title:
 - 2.4 Rationale for revision of course title:
- 3. Revise course number: n/a
 - 3.1 Current course number:
 - 3.2 Proposed course number:
 - 3.3 Rationale for revision of course number:
- 4. Revise course prerequisites/corequisites/special requirements:
 - 4.1 Current prerequisites/corequisites/special requirements: (indicate which)

Prerequisites: CHEM 120-121 with a grade of "C" or better and MATH 118. Corequisite: CHEM 222.

4.2 Proposed prerequisites/corequisites/special requirements:

Corequisite: CHEM 222.

4.3 Rationale for revision of course prerequisites/corequisites/special requirements:

CHEM 223 is a laboratory to accompany CHEM 222 concurrently. It is unnecessary to list prerequisites for CHEM 223 since they are same as those for the CHEM 222.

4.4 Effect on completion of major/minor sequence:

Not applicable.

5. Revise course catalog listing:

5.1 Current course catalog listing:

Laboratory to accompany CHEM 222. A major portion of the course is devoted to semimicro qualitative inorganic analysis. Pre-lab lecture and laboratory meet for four hours per week. Course Fee

5.2 Proposed course catalog listing:

Laboratory to accompany CHEM 222. Pre-lab lecture and laboratory meet for four hours per week. Course Fee

5.3 Rationale for revision of course catalog listing:

CHEM 223 is intended to provide a laboratory experience that complements CHEM 222. The statement about qualitative inorganic analysis in the current catalog description is not necessary; therefore, it is not included in the proposed catalog revision.

6. Revise course credit hours: n/a

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

7. Revise grade type: n/a

- 7.1 Current grade type:
- 7.2 Proposed grade type:
- 7.3 Rationale for revision of grade type:

8. Proposed term for implementation:

Fall 2016

9. Dates of prior committee approvals:

Department of Chemistry	12/04/2015	
Ogden College Curriculum Committee		
Professional Education Council (if applicable)	-	
General Education Committee (if applicable)		
Undergraduate Curriculum Committee		
University Senate		

Proposal Date: 01/29/16

Ogden College of Science & Engineering Department of Chemistry Proposal to Make Multiple Revisions to a Course (Action Item)

Contact Person: Prof. Darwin Dahl, darwin.dahl@wku.edu, (270) 745-5074

1. Identification of course:

- 1.1 Current course prefix (subject area) and number: CHEM 421
- 1.2 Course title: INORGANIC CHEMISTRY LAB

2. Revise course title: N/A

- 2.1 Current course title:
- 2.2 Proposed course title:
- 2.3 Proposed abbreviated title:
- 2.4 Rationale for revision of course title:

3. Revise course number: N/A

- 3.1 Current course number:
- 3.2 Proposed course number:
- 3.3 Rationale for revision of course number:

4. Revise course prerequisites/corequisites/special requirements:

4.1 Current prerequisites/corequisites/special requirements:

Prerequisite: CHEM 420

4.2 Proposed prerequisites/corequisites/special requirements:

Prerequisite or corequisite: CHEM 420

4.3 Rationale for revision of course prerequisites/corequisites/special requirements:

The proposed change allows students to take the laboratory CHEM 421 prior to or concurrently with the associated lecture course CHEM 420.

4.4 Effect on completion of major/minor sequence: Not applicable

5. Revise course catalog listing:

5.1 Current course catalog listing:

Prerequisite: CHEM 420. A laboratory course emphasizing the synthesis and characterization of inorganic compounds of the main group and transition metals. Laboratory meetings once a week for three hours.

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5.2	Proposed	COURCE	catalog	lieting.
0.2	TTOPOSCU	course	Catalog	mounts.

Prerequisite or corequisite: CHEM 420. A laboratory course emphasizing the synthesis and characterization of inorganic compounds of the main group and transition metals. Laboratory meetings once a week for three hours. Course Fee

5.3 Rationale for revision of course catalog listing:

The listing is modified to reflect the proposed prerequisite/corequisite change. A course fee is added to defray the cost of chemicals and supplies.

6.	Revise	course	credit	hours:	N/A

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

7. Revise grade type: N/A

- 7.1 Current grade type:
- 7.2 Proposed grade type:
- 7.3 Rationale for revision of grade type:

8. Proposed term for implementation:

Fall 2016

9. Dates of prior committee approvals:

Department of Chemistry	01/29/16	
Ogden College Curriculum Committee		
Professional Education Council (if applicable)		
General Education Committee (if applicable)		4.290
Undergraduate Curriculum Committee		
University Senate		

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

Contact Person: Amy Nemon, 5-3082, amy.nemon@wku.edu

1. Identification of course:

- 1.1 Current course prefix (subject area) and number: GEOG 452
- 2.1 Course title: Geoscience Field Experiences

2. Revise course title: N/A

- 2.2 Current course title: Geoscience Field Experiences
- 2.3 Proposed course title: Applied Geoscience Field Experiences
- 2.4 Proposed abbreviated title: App Geo Field Experiences
- 2.5 Rationale for revision of course title: This proposed title better encompasses the wide variety of experiences that offer students an opportunity to apply the skills learned in the classroom in field-based settings.

3. Revise course catalog listing:

- 3.1 Current course catalog listing: Field techniques and research experiences are emphasized in a variety of settings, including locally, at Study Away and Study Abroad destinations, field camps, and other nationals or international settings.
- 3.2 Proposed course catalog listing: Applied geoscience experiences in a variety of field-based settings, including, but not limited to, Study Abroad and Study Away programs, field camps, and extended fieldtrips to national or international settings.
- 3.3 Rationale for revision of course catalog listing: This course listing more accurately describes the intent of the course and better encompasses the wide variety of experienced encountered during this course.

4. Revise course credit hours:

- 4.1 Current course credit hours: 3-6 (repeatable for a maximum of 12 hours)
- 4.2 Proposed course credit hours: 1-6 (repeatable for a maximum of 12 hours)
- 4.3 Rationale for revision of course credit hours: The change in course credit hours allows for more flexibility in the course structure and contact time, which is necessary due to the wide-variety of experiences which are available through this course.

5. Proposed term for implementation: Fall 2016

7. Dates of prior committee approvals:

Department of Geography and Geology	12/4/2015
Ogden College Curriculum Committee	

Undergraduate Curriculum Committee	
University Senate	

Proposal Date: 12/04/2015

Odgen College of Science And Engineering Department of Geography and Geology Proposal to Make Multiple Revisions to a Course (Action Item)

Contact Person: Jun Yan e-mail: jun.yan@wku.edu Phone: -55982

1. Identification of course:

- 1.1 Current course prefix (subject area) and number: GEOG 465
- 1.2 Course title: Geography of Asia

2. Revise course title:

- 1.3 Current course title: Geography of Asia
- 1.4 Proposed course title: Geography of East Asia
- 2.1 Proposed abbreviated title: Geography of East Asia
- 2.2 Rationale for revision of course title: As the largest continent in the world, Asia has incredible diversity in its physical and human environment. By narrowing the focus to East Asia, this advanced regional geography course can concentrate more on in-depth discussions of various contemporary issues related to geography in the region.

3. Revise course prerequisites/corequisites/special requirements:

- 3.1 Current prerequisites:: Permission of instructor
- 3.2 Proposed prerequisites: GEOG 110
- 3.3 Rationale for revision of course prerequisites: Students are expected to have some prior understanding of world regional geography. GEOG 110 provides students with the basic geographic concepts and knowledge necessary for this advanced course.
- 3.4 Effect on completion of major/minor sequence: None

4. Revise course catalog listing:

- 4.1 Current course catalog listing: A study of regional differences, with particular attention to the distribution and activities of the peoples in relation to the natural and economic settings and to problems of development.
- 4.2 Proposed course catalog listing: Analysis of selected contemporary geographic issues in East Asia. Emphasis is on a synthesis of various geographic factors and phenomena, including physical, cultural, political, social, and economic systems.
- 4.3 Rationale for revision of course catalog listing: The revised listing is a more accurate description of how the course has been taught in recent years.

5. Proposed term for implementation: Fall 2016

6.	Dates of prior committee approvals:	
	Department of Geography and Geology	12/04/2015
	Ogden College Curriculum Committee	
	Undergraduate Curriculum Committee	
	University Senate	

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

Contact Person: Leslie North, 5-5982, leslie.north@wku.edu

1. Identification of course:

- 1.1 Current course prefix (subject area) and number: GEOG 471
- 1.2 Course title: Natural Resource Management

2. Revise course title:

- 2.1 Current course title: Natural Resource Management
- 2.2 Proposed course title: Technological Applications in Natural Resource Management
- 2.3 Proposed abbreviated title: Tech App Resource Management
- 2.4 Rationale for revision of course title: Since resource management is primarily done with the aid of advancing technologies, the course content has evolved over the years to include a focus on technological applications in natural resource management. Thus, this revised title and catalog listing better reflects the evolution of the course content to align with the present-day management of natural resources. This change also allows for more distinction between the content of this course and the existing environmental planning course.

3. Revise course prerequisites/corequisites/special requirements: N/A

- 3.1 Current prerequisites: None
- 3.2 Proposed <u>prerequisites</u>: GEOG 280 and GISC 316, or instructor's permission.
- 3.3 Rationale for revision of course prerequisites: To be successful in this course, students should have a basic understanding of environmental science and the primary technology used in resource management (GIS). These prerequisites should ensure that students have the necessary background information, which can be acquired in multiple courses/experiences.
- 3.4 Effect on completion of major/minor sequence: None. Majors and minors are already required to take both GEOG 280 and GISC 316, and do so before taking this applied elective.

4. Revise course catalog listing:

- 4.1 Current course catalog listing: Natural resources of the United States and beyond are studied and recommendations for their more efficient utilization are presented. Discussions related, but are not limited to timber, fisheries, grazing, and wildlife management.
- 4.2 Proposed course catalog listing: Examines the application of technology to address current resource management challenges and ensure the efficient utilization of natural resources. Discussions may address, but are not limited to, timber, fisheries, oil and gas, and wildlife management.

5.	Proposed term for implementation: Fall 2016	
6.	Dates of prior committee approvals:	
	Department of Geography and Geology Ogden College Curriculum Committee	12/4/2015
	Undergraduate Curriculum Committee	
	University Senate	

Rationale for revision of course catalog listing: This course listing more accurately describes the content, as it has evolved over time to align with the evolution in the field

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of study.

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

Contact Person: Leslie North, 5-5982, leslie.north@wku.edu

1. Identification of course:

- 1.1 Current course prefix (subject area) and number: GEOG 474
- 1.2 Course title: Environmental Planning

2. Revise course title:

- 2.1 Current course title: Environmental Planning
- 2.2 Proposed course title: Environmental Planning Applications
- 2.3 Proposed abbreviated title: Env Planning Applications.
- 2.4 Rationale for revision of course title: The addition of "Applications" in the title will better help students understand that sequencing of this course in that it is intended to 'apply' concepts learned in lower-level environmental courses.

3. Revise course prerequisites:

- 3.1 Current prerequisites: GEOG 280, or instructor's permission
- 3.2 Proposed <u>prerequisites</u>: GEOG 280 and GEOG 210, or instructor's permission.
- 3.3 Rationale for revision of course prerequisites: To be successful in this course, students should have a basic understanding of environmental science and environmental policy, since the two concepts are combined in the course topics. These prerequisites should ensure that students have the necessary background information.
- 3.4 Effect on completion of major/minor sequence: None. Majors and minors are already required to take both GEOG 280 and GEOG 210, and do so before taking this applied elective.

4. Revise course catalog listing:

- 4.1 Current course catalog listing: An advanced integrative course in environmental science and planning dealing with urban and rural areas. Emphasis on ecological planning strategies for improving climatic conditions, conserving water, and optimizing vegetative and aquatic habitats, while allowing for sustainable economic development at reduced cost.
- 4.2 Proposed course catalog listing: Integrative topics in environmental science, sustainability, and planning. Emphasis on sustainable community planning and development in urban and rural settings. Students study current models and policies from around the globe.
- 4.3 Rationale for revision of course catalog listing: This course listing more clearly describes the encompassing focus of the course content.

5.	Proposed term for implementation: Fall 2016		
6.	Dates of prior committee approvals:		
	Department of Geography and Geology	12/4/2015	
	Ogden College Curriculum Committee		***************************************
	Undergraduate Curriculum Committee		-
	University Senate		

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

Contact Person: Leslie North, 5-5982, leslie.north@wku.edu

1. Identification of course:

- 1.1 Current course prefix (subject area) and number: GEOG 486
- 1.2 Course title: Environmental Seminar

2. Revise course title:

- 2.1 Current course title: Environmental Seminar
- 2.2 Proposed course title: Seminar in Environmental Science and Sustainability
- 2.3 Proposed abbreviated title: Seminar Env Sci Sustainability
- 2.4 Rationale for revision of course title: The revised title better reflects the proposed changes to content.

3. Revise course prerequisites/corequisites/special requirements:

- 3.1 Current prerequisites: Senior Standing
- 3.2 Proposed prerequisites: None.
- 3.3 Rationale for revision of course prerequisites: The unique and diverse nature of the seminar topics allows students from multiple backgrounds and with varied previous course content to participate in and excel in the course. Seniors are not the only students who would benefit from this course; thus, this change allows all interested students to participate.
- 3.4 Effect on completion of major/minor sequence: None

4. Revise course catalog listing:

- 4.1 Current course catalog listing: Current environmental issues discussed by invited lecturers. Students are expected to participate in pre-approved department and university-wide seminars.
- 4.2 Proposed course catalog listing: Current issues related to sustainability and/or environmental science discussed via invited lecturers, community engagements, and/or department and university-wide seminars. Students are expected to participate in assigned seminar activities throughout the duration of the course.
- 4.3 Rationale for revision of course catalog listing: This course listing more accurately describes the content.

5. Revise course credit hours:

- 5.1 Current course credit hours: 1 hours
- 5.2 Proposed course credit hours: 1 to 3 hours, Repeatable for up to 6 hours.
- 5.3 Rationale for revision of course credit hours: Potential topics may require more contact time and depth of content than allowable with only one credit hour. Allowing for the

course to be repeated permits students to take full advantage of the varied nature of the seminar topics from semester to semester.

6.	Proposed term for implementation: Fall 2016		
7.	Dates of prior committee approvals:		
	Department of Geography and Geology Ogden College Curriculum Committee	12/4/2015	
	Undergraduate Curriculum Committee University Senate		

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

Contact Person: Leslie North, 5-5982, leslie.north@wku.edu

1.	Identi	fication of course:	
	1.1	Current course prefix (subject area) and number: GEO	OG 487
	1.2	Course title: Environmental Law	
2.	Revise	course title:	
	2.1	Current course title: Environmental Law	
	2.2	Proposed course title: Environmental Management an	d Law
	2.3	Proposed abbreviated title: Nat Resource Management	t & Law
	2.4	Rationale for revision of course title: The content of the	ne course extends beyond pure
		environmental law. The proposed title change better re	eflects this focus.
3.	Revise	course catalog listing:	
	3.1	Current course catalog listing:	
		An introduction to major environmental legislations for	or air, water, toxic and hazardous
		pollutants and related legislative, administrative, and j	udicial developments.
	3.2	Proposed course catalog listing: Examination of major	legislative, administrative, and
		judicial management approaches to addressing current	environmental conditions related,
		but not limited to, natural resource consumption and a	ir, water, and hazardous pollutants
		in the United States and abroad.	
	5.1	Rationale for revision of course catalog listing: This co	ourse listing more accurately
		describes the content of the course.	
4.	Propos	sed term for implementation: Fall 2016	
5.	Dates	of prior committee approvals:	
	Depart	ment of Geography and Geology	12/4/2015
	Ogden	College Curriculum Committee	
	Underg	graduate Curriculum Committee	
	Univer	sity Senate	

College Name Department Name Proposal to Make Multiple Revisions to a Course (Action Item)

Contact Person: Leslie North, 5-5982, Leslie.north@wku.edu

1. Identification of course:

- 1.1 Current course prefix (subject area) and number: GEOG 489
- 1.2 Course title: Alternatives in Sustainability

2. Revise course catalog listing:

- 2.1 Current course catalog listing: This capstone course for the minor in sustainability addresses all aspects of sustainability theory and practice, including problem-solving and decision making techniques and critical analyses of prominent sustainability plans.
- 2.2 Proposed course catalog listing: Addresses aspects of sustainability theory and practice, including problem-solving and decision-making techniques and critical analyses of prominent sustainability plans. Content focuses on a single topic within the sustainability discipline for the entirety of the course.
- 2.3 Rationale for revision of course catalog listing: The new course catalog listing is clearer, since the course is useful for more than just students taking the Minor in Sustainability. Additionally, the proposed changes better describe the intent of the course.

3. Revise course credit hours:

- 3.1 Current course credit hours: 3
- 3.2 Proposed course credit hours: 3, repeatable up to 6 hours with topic change
- 3.3 Rationale for revision of course credit hours: This course will have a different sustainability topic each semester it is taught, which allows students an opportunity to have a much deeper, applied understanding of various sustainability topics than what is possible to learn in other program courses. Allowing students to repeat the course will offer them the chance to learn more about at least two key sustainability topics.

4. Proposed term for implementation: Fall 2016

5. Dates of prior committee approvals:

Department of Geography and Geology	12/4/2015
Ogden College Curriculum Committee	
Undergraduate Curriculum Committee	
University Senate	

10/4/2015

Ogden College of Science and Engineering Department of Geography and Geology Proposal to Delete a Program (Action Item)

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

1.	Identification	of	program:
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- 1.1 Program reference number: 363
- 1.2 Program title: Minor in Environmental Studies
- 1.3 Credit hours: 23
- 2. Rationale for the program deletion: The Department is merging program #363, Minor in Environmental Studies, and #477, Minor in Environment and Sustainability, into a new minor under reference number 477 with the new name of Minor in Environmental Science and Sustainability. Contemporary ideologies behind Environmental Studies go hand in hand with sustainability problem solving. This integrated approach seeks to advance students' critical abilities to solve real-world environmental problems, manage social-ecological systems in a sustainable manner, and affect decisions involving environmental policy, resource management, and biodiversity conservation.
- 3. Effect on current students or other departments, if known: Currently 6 students are still enrolled in the program. There will be no impact to these students or other departments as none of the classes are being deleted.
- 4. Proposed term for implementation: Fall 2016

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Department of Geography and Geology	12/4/2015
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, 5-4555

1. Identification of program:

- 1.1 Current program reference number: 675
- 1.2 Current program title: Geography and Environmental Studies
- 1.3 Credit hours: 52

2. Identification of the proposed program changes:

- 2.1 Add program concentration, Environment and Sustainability, to existing concentrations
- 2.2 Change existing concentration requirements to reflect course changes in Department.
- 2.3 Add GEOG 452 to list of required core courses in major.
- 2.4 Change title of Environment and Climate Concentration
- 2.5 Add GISC prefix to list of approved electives
- 2.6 Add GEOL prefix to list of approved electives for Karst and Water Resources.

3. Detailed program description:

5. Detailed program description:			
Karst and Water Resources Concentration		Karst and Water Resources Concentration	
Common Core Requirements (26 hours):	•	Common Core Requirements (26 hours):	
GEOG or GEOL 103 Our Dynamic Earth	3	GEOG or GEOL 103 Our Dynamic Earth	3
GEOG 110 World Regional Geography	3	GEOG 110 World Regional Geography	3
GEOG 300 Writing in the Geosciences	3	GEOG 300 Writing in the Geosciences	3
GISC 316 Fundamentals of GIS	4	GISC 316 Fundamentals of GIS	4
GISC 317 GIS	4	GISC 317 GIS	4
GEOG 391 Spatial Data Analysis	4	GEOG 391 Spatial Data Analysis	4
GEOG 495 Research Practicum/Internship	4	GEOG 495 Research Practicum/Internship	
GEOG 499 Professional Development	1	OR	
	97.0	GEOG 452 Applied Geo Field Experience	.6
		OR	.5
		GEOG 475 Selected Topics in Geography	4
		GEOG 499 Professional Development	1
		ozo o 133 Professional Bevelopment	1
Required Concentration Courses: (10 hours):		Required Concentration Courses: (13 hours):	
GEOG 280 Environmental Science and		GEOG 280 Environmental Science and	.
Sustainability	4	Sustainability	4
GEOG or GEOL 310 Global Hydrology	3	A secretarion was a second of the second of	4
GEOG 461 Karst Environments 3 hours	5	GEOG or GEOL 310 Global Hydrology	3
OLOG FOI Kaist Elivirolillents 3 nours		GEOG 461 Karst Environments	3
		GEOG 475 Mammoth Cave Field Course	3

Elective Courses: (16 hours): Select from any appropriate GEOG or METR 2xx-4xx course with your advisor (examples include 226, 227, 322, 328 344, 414, 459, 471, 474, 487, etc.) to meet the 52 unduplicated hours required.	Elective Courses: (13 hours): Select from any appropriate GEOG, GISC, GEOL, or METR 2xx-4xx course with your advisor (examples include 226, 322, 328 344, 414, 459, 471, 474, 487, etc.) to meet the 52 unduplicated hours required.
Additional Program Requirements (not included in the 52-hour program) (13-14 hours): •MATH 136 Calculus 1 •MATH 183 (Prerequisite for GEOG 391) •PHYS 201 College Physics I or BIOL 120 Biological Concepts •CHEM 120 College Chemistry I 3	
Environment and Climate Concentration	Climate Systems Concentration
Common Core Requirements (26 hours): GEOG or GEOL 103 Our Dynamic Earth GEOG 110 World Regional Geography GEOG 300 Writing in the Geosciences GISC 316 Fundamentals of GIS GISC 317 GIS GEOG 391 Spatial Data Analysis GEOG 495 Research Practicum/Internship GEOG 499 Professional Development 1	Common Core Requirements (26 hours): GEOG or GEOL 103 Our Dynamic Earth 3 GEOG 110 World Regional Geography 3 GEOG 300 Writing in the Geosciences 3 GISC 316 Fundamentals of GIS 4 GISC 317 GIS 4 GEOG 391 Spatial Data Analysis 4 GEOG 495 Research Practicum/Internship OR GEOG 452 Applied Geo Field Experiences OR Advisor Approved Field-based GEOG 475 GEOG 499 Professional Development 1
Required Concentration Courses: (10 hours): GEOG 210 Environmental and Ecological Policy 3 GEOG 280 Environmental Science and Sustainability 4 GEOG 455 Global Climate Change 3	Required Concentration Courses (10 hours): METR 121 Meteorology 3 METR 322 Global Climate Systems 4 GEOG 455 Global Climate Change 3
Elective Courses (16 hours): Select from any appropriate GEOG or METR 2xx-4xx course with your advisor (examples include 121, 226, 227, 322, 328 344, 414, 459, 471, 474, 487, etc.) to meet the 52 unduplicated hours required.	Elective Courses (16 hours): Select from any appropriate GEOG, GISC , or METR 2xx-4xx course with your advisor (examples include 121, 226, 322, 328. 344, 414, 459, 471, 474, 487, etc.) to meet the 52 unduplicated hours required.

At least 26 hours in the program must be at the upper division level.	At least 26 hours in the program must be at the upper division level.
Additional Program Requirements (not included in the 52-hour program) (6 hours): • MATH 116 Algebra • MATH 183 Statistics 3	Additional Program Requirements (not included in the 52-hour program) (6 hours): • MATH 116 Algebra • MATH 183 Statistics 3
Tourism and Development Concentration	Tourism and Development Concentration
Common Core Requirements (26 hours): GEOG or GEOL 103 Our Dynamic Earth GEOG 110 World Regional Geography GEOG 300 Writing in the Geosciences GISC 316 Fundamentals of GIS GISC 317 GIS GEOG 391 Spatial Data Analysis GEOG 495 Research Practicum/Internship GEOG 499 Professional Development 1	Common Core Requirements (26 hours): GEOG or GEOL 103 Our Dynamic Earth 3 GEOG 110 World Regional Geography 3 GEOG 300 Writing in the Geosciences 3 GISC 316 Fundamentals of GIS 4 GISC 317 GIS 4 GEOG 391 Spatial Data Analysis 4 GEOG 495 Research Practicum/Internship OR GEOG 452 Applied Geo Field Experiences OR GEOG 475 Selected Topics in Geography 4 GEOG 499 Professional Development 1
Required Concentration Courses: (6 hours): GEOG 330 Intro to Cultural Geography 3 GEOG 481 Tourism Geography 3	Required Concentration Courses: (6 hours): GEOG 330 Intro to Cultural Geography GEOG 481 Tourism Geography 3
Elective Courses (20 hours): Select from any appropriate GEOG or METR 2xx-4xx course with your advisor (examples include 200, 210, 226, 227, 280, 344, 350, 352, 385, 471, 474, 487, etc.) to meet the 52 unduplicated hours required.	Elective Courses (20 hours): Select from any appropriate GEOG, GISC, or METR 2xx-4xx course with your advisor (examples include 200, 210, 226, 280, 344, 350, 352, 385, 471, 474, 487, etc.) to meet the 52 unduplicated hours required.
Additional Program Requirements (not included in the 52-hour program) (6 hours): • MATH 116 Algebra 3 • MATH 183 Statistics 3	Additional Program Requirements (not included in the 52-hour program) (6 hours): • MATH 116 Algebra 3 • MATH 183 Statistics 3
Cultural Geography Concentration	Cultural Geography Concentration
Common Core Requirements (26 hours): GEOG or GEOL 103 Our Dynamic Earth GEOG 110 World Regional Geography GEOG 300 Writing in the Geosciences 3	Common Core Requirements (26 hours): GEOG or GEOL 103 Our Dynamic Earth GEOG 110 World Regional Geography GEOG 300 Writing in the Geosciences 3

GISC 316 Fundamentals of GIS 4	GISC 316 Fundamentals of GIS 4
	The support of the su
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	GEOG 452 Applied Geo Field Experiences OR
	GEOG 475 Selected Topics in Geography 4 GEOG 499 Professional Development 1
Required Concentration Courses: (6 hours): GEOG 330 Intro to Cultural Geography GEOG 430 Topics in Cultural Geography 3 GEOG 430 Topics in Cultural Geography 3 Elective Courses (20 hours): Select from any appropriate GEOG or METR 2xx-4xx course with your advisor (examples include 200, 210, 226, 227, 280, 344, 350, 352, 385, 471, 474, 487, etc.) to meet the 52 unduplicated hours required. Additional Program Requirements (not included in the 52-hour program) (6 hours): • MATH 116 Algebra • MATH 183 Statistics 3 Additional Program Requirements (not included in the 52-hour program) (6 hours): • MATH 183 Statistics 3 Environment and Sustainability Concentration Common Core Requirements (26 hours): GEOG 475 Selected Topics in Geography GEOG 430 Topics in Cultural Geography GEOG 452, 487, 48x course with your advisor (examples include 200, 210, 226, 280, 344, 350, 352, 385, 471, 474, 487, etc.) to meet the 52 unduplicated hours required. Additional Program Requirements (not included in the 52-hour program) (6 hours): • MATH 183 Statistics Environment and Sustainability Concentration Common Core Requirements (26 hours): GEOG 310 Writing in the Geosciences GISC 316 Fundamentals of GIS GISC 317 GIS GEOG 495 Research Practicum/Intern OR GEOG 475 Selected Topics in Geography GEOG 499 Professional Development Required Concentration Courses (10 hrs): GEOG 210 Env and Ecological Policy GEOG 280 Env Sci and Sustainability	
Select from any appropriate GEOG or METR 2xx-4xx course with your advisor (examples include 200, 210, 226, 227, 280, 344, 350, 352, 385, 471, 474, 487, etc.) to meet the 52	Select from any appropriate GEOG, GISC, or METR 2xx-4xx course with your advisor (examples include 200, 210, 226, 280, 344, 350, 352, 385, 471, 474, 487, etc.) to meet the
included in the 52-hour program) (6 hours): • MATH 116 Algebra	included in the 52-hour program) (6 hours): • MATH 116 Algebra 3
	Environment and Sustainability Concentration
	GEOG or GEOL 103 Our Dynamic Earth 3
	Page Applied the Property of Control of Cont
	GEOG 391 Spatial Data Analysis 4
	GEOG 452 Applied Geo Field Experiences
	Required Concentration Courses (10 hrs):
	GEOG 380 Global Sustainability 3

Elective Courses (16 hours):
Select from any appropriate GEOG, GISC, or METR 2xx-4xx course with your advisor (examples include 121, 226, 322, 328 344, 414, 459, 471, 474, 487, etc.) to meet the 52 unduplicated hours required. At least 26 hours in the program must be at the upper division level.

Additional Program Requirements (not included in the 52-hour program) (6 hours):

- MATH 116 Algebra
- MATH 183 Statistics

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4. Rationale for the proposed program change:

These proposed changes reflect an evolution of the existing program to meet the demands of current and future majors and to meet a growing demand for environmental studies programs and courses. Revised concentration options provide better options for majors, improved student options for environmental jobs requiring a specific degree, and better capture the expertise of a large subset of our faculty and the courses in the program. These changes also allow majors to focus on the specific area within the broad environmental field that best fits their interests and aligns with their career paths. Over the past decade, the Department has added new faculty that have brought an expanded intellectual and skill base to the existing program, it has acquired new instrumentation and technical facilities such as GIS, and the program overall is now much more student-research and student-retention focused, particularly in the environmental field. These proposed program changes are needed to complement those departmental changes. The ultimate goal of the Geography and Environmental Studies Program is to educate students more effectively and to help them become more marketable for private industry, government, and academic positions.

GEOG 452 and 475 were added as core options, supplementing GEOG 495 in all concentrations. The goal of the GEOG 495 practicum or research course is to allow students an opportunity to apply skills learned in the classroom or obtain skills related to their degree outside of the classroom through a research or internship experience. Similarly, GEOG 452 and GEOG 475 offer students an opportunity to learn through field-based instruction during study abroad and study away programs. Since all three courses are specifically designed to offer students an opportunity to learn outside of the classroom, we feel they should be an either/or option in program core requirements. The title for the existing Environment and Climate concentration was changed to better suit the post-graduation needs of students in that concentration (having a degree concentration that identifies a focus on climate systems and/or meteorology) and better reflect the focus of that concentration on climate systems.

All of the proposed changes also reflect greater flexibility, and increased rigor, for students to select elective courses that fit their interest and help better meet their future professional and academic goals. The field of geography and environmental studies is

very broad, and a single program centered on fixed requirements and minimized electives cannot encompass all aspects of the science within 120 hours. In addition to these proposed changes, the Department also has a JUMP B.S./M.S. program aimed at positioning the Geography and Environmental Studies program more competitively among benchmark and regional universities. The proposed program changes in the existing B.S. degree are a critical step toward ensuring the success of that program.

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5.	Proposed term for implementation	: Fall 2016		
6.	Dates of prior committee approval	s:		
	Department of Geography and Geolog	sy.	12/4/2015	
	Ogden College Curriculum Committee	e		
	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, 5-4555

1. Identification of program:

- 1.1 Current program reference number: 477
- 1.2 Current program title: Minor in Environment and Sustainability
- 1.3 Credit hours: 22

2. Identification of the proposed program changes:

- 2.1 Proposed changes to the minor in Environment and Sustainability include renaming the title to Minor in Environmental Studies and Sustainability.
- 2.2 GISC 216 has been added as a required course.
- 2.3 Deleting courses that are no longer applicable to the minor and adding other electives that closely fit the new focus of the minor. Deleting GEOG 444 and GEOG 488 from the elective course list. Additions to the elective list include GEOG 344, GEOG 474, GEOG 486, and GISC 414.
- 2.4 Removing the program hours limitation for electives and replacing with two disciplines required.

3. Detailed program description:

Required hours: 22	Required hours: 22
Required Courses (7-hours): GEOG 280 Environmental Science and Sustainability 4 GEOG 380 Global Sustainability 3	Required Courses (10 hours): GEOG 280 Environmental Science and Sustainability 4 GEOG 380 Global Sustainability 3 GISC 216 Geotechnologies in a Global Community 3
Elective courses (15 hours):	Elective courses (12 hours):
No more than 6 hours can be taken from any one	At least two disciplines must be represented:
discipline. AGRO 454 Soil Management and Conservation 3	ACRO 454 Cail Management and Communication
AMS 470 Land Development 4	AGRO 454 Soil Management and Conservation 3 AMS 470 Land Development 4
ANTH 442 Ecological and Economical	ANTH 442 Ecological and Economical
Anthropology 3	Anthropology 3
ECON 430 Environmental and Resource	ECON 430 Environmental and Resource
Economics 3	Economics 3
GEOG 210 Environment and Ecological Policy 3	GEOG 210 Environment and Ecological Policy 3
GEOG 328 Elements of Biogeography 3	GEOG 328 Elements of Biogeography 3
GEOG 378 Food, Culture, and Environment 3	GEOG 344 Environmental Ethics 3
GEOG/EDU 385 Society, Resources, & Climate 3	GEOG 378 Food, Culture, and Environment 3
GEOG 427 Water Resources 3	GEOG/EDU 385 Society, Resources, & Climate 3
GEOG 444 Environmental Ethics	GEOG 427 Water Resource Management 3
GEOG 452 Geoscience Field Experiences 1-12	GEOG 452 Applied Geoscience Experiences 1-12

GEOG 471 Natural Resource Management	3	GEOG 471 Tech App Resource Management	3
GEOG 487 Environmental Law	3	GEOG 474 Environmental Planning	3
GEOG 488 Rural Planning	3	GEOG 481 Tourism Geography	3
GEOG 489 Alternatives in Sustainability	3	CECC 10CE	1-3
PH 385 Environmental Health	3	GEOG 487 Nat Resource Management and Law	3
SOCL 470 Environmental Sociology	3	GEOG 489 Alternatives in Sustainability	3
50000407		GISC 414 Remote Sensing	4
		PH 385 Environmental Health	3
		SOCL 470 Environmental Sociology	3
		Or another advisor approved electives.	

- 4. Rationale for the proposed program changes: The proposed program changes reflect the merging of the Department's Minor in Environmental Science and the Minor in Environment and Sustainability. These two topics are increasingly intertwined today. This integrated approach seeks to advance students' critical abilities to solve real-world environmental problems, manage social-ecological systems in a sustainable manner, and affect decisions involving environmental policy, resource management, and biodiversity conservation.
- 5. Proposed term for implementation: Fall 2016
- 6. Dates of prior committee approvals:

Department of Geography and Geology	_12/4/2015
Ogden Curriculum Committee	
Undergraduate Curriculum Committee	
University Senate	

Proposal Date: 12/7/15

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

Contact Person: Fred Siewers, fred.siewers@wku.edu, 5-5988

1. Identification of program:

- 1.1 Current program reference number: #577
- 1.2 Current program title: Geology Extended (B.S.)
- 1.3 Credit hours: 52

2. Identification of the proposed program changes:

Add GEOG 300 Writing in the Geosciences to the requirements outside Geology

3. Detailed program description:

Courses	Hours		
Core Courses	43-44	Core Courses	43-44
GEOL/GEOG 103 Our Dynamic Earth OR GEOL 111 The Earth	3	GEOL/GEOG 103 Our Dynamic Earth OR 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 270 (3) OR GEOL 432 (4)	3-4	GEOL 270 (3) OR GEOL 432 (4)	3-4
GEOL 408 Structural Geology	4	GEOL 408 Structural Geology	4
GISC 316 Fundamentals of GIS	4	GISC 316 Fundamentals of GIS	4
GISC 317 GIS	4	GISC 317 GIS	4
GEOL 330 Mineralogy	4	GEOL 330 Mineralogy	4
GEOL 350 Petrology	4	GEOL 350 Petrology	4
GEOL 380 Intro. Field Techniques (3 hrs) plus GEOG 452 Geoscience Field Experiences (3 hrs) OR GEOG 452 (6 hours) OR GISC 417 GIS Analysis & Modeling (3 hrs) and GISC 419 GIS Programming (3 hrs)	6	GEOL 380 Intro. Field Techniques (3 hrs) plus GEOG 452 Geoscience Field Experiences (3 hrs) OR GEOG 452 (6 hours) OR GISC 417 GIS Analysis & Modeling (3 hrs) and GISC 419 GIS Programming (3 hrs)	6
GEOL 360 Sedimentology and Stratigraphy	4	GEOL 360 Sedimentology and Stratigraphy	4
GEOL 499 Professional Prep.	2	GEOL 499 Professional Prep.	2
Elective Courses	9-8	Elective Courses	9-8
9 or 8 hours of elective courses selected from any GEOL 2xx – 4xx courses, such as: 270, 310, 311, 315, 325, 330,	9-6	9 or 8 hours of elective courses selected from any GEOL 2xx – 4xx courses, such as: 270, 310, 311, 315, 325, 330,	9-8

Proposal Date: 12/7/15

350, 399, 405, 415, 420, 430, 432, 440, 465, 470, 475, and from GEOG 310, 391, 420, GISC 417, 419, and from BIOL 122/123		350, 399, 405, 415, 420, 430, 432, 440, 465, 470, 475, and from GEOG 310, 391, 420, GISC 417, 419, and from BIOL 122/123	
Minimum Program Hours	<u>52</u>	Minimum Program Hours	<u>52</u>
Requirements outside Geology	13	Requirements outside Geology	<u>16</u>
MATH 136 Calculus I	4	MATH 136 Calculus I	4
CHEM 120 College Chemistry I	3	CHEM 120 College Chemistry I	3
CHEM 121 College Chemistry I Lab	2	CHEM 121 College Chemistry I Lab	2
PHYS 180-181 Intro. Modern Physics + Lab OR PHYS 201	4	PHYS 180-181 Intro. Modern Physics + Lab OR PHYS 201	4
		GEOG 300 Writing in the Geosciences ** Note: Satisfies Colonnade Foundations Writing in the Disciplines requirement effective Fall 2014.	3
Other Requirements		Other Requirements	
To graduate with Geology Honors, take an additional 12 hours of GEOL courses beyond the minimum required for the major and maintain a GPA of 3.25 or greater	12	To graduate with Geology Honors, take an additional 12 hours of GEOL courses beyond the minimum required for the major and maintain a GPA of 3.25 or greater	12

Proposal Date: 12/7/15

Rationale for the proposed program change: The proposed change strengthens engagement 4.

lopment o	of research	proposals
	opment o	opment of research

э.	Proposed term for implementation and special provisions (if applicable): 201630	
6.	Dates of prior committee approvals:	
	Department of Geography and Geology	1/21/2016
	Ogden College Curriculum Committee	
	Undergraduate Curriculum Committee	
	University Senate	

Proposal Date: 1/29/16

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

Contact Person: Fred Siewers, fred.siewers@wku.edu, 5-5988

1. Identification of program:

- 1.1 Current program reference number: #676
- 1.2 Current program title: Geology (A.B.)
- 1.3 Credit hours: 33

2. Identification of the proposed program changes:

- 2.1 Change the program titled to *Earth Science*
- 2.2 move GEOL/GEOG 310 from the Elective Courses to the program Core,
- 2.3 Move GEOL 380 and GEOG 452 from Core Courses to Elective Courses
- 2.4 Add GEOG 226 and 280 and GISC 317 to Elective Courses
- 2.5 Change the title of GEOL 325 to "Intro to Minerals and Crystalline Rocks"
- 2.6 Delete GISC 417 and GISC 419 from Elective Courses
- 2.7 Move METR 121 from Requirements Outside Geology to Elective Courses
- 2.8 Delete CS 146 from Requirements Outside Geology
- 2.9 Add GEOG 300 to the Requirements Outside Geology
- 2.10 Increase the Elective Course hours to 6
- 2.11 Increase the minimum program hours to 33
- 2.12 Add BIOL 122/123 as a second cognate science option (in addition to PHYS 201 or PHYS 180/181)

3. Detailed program description:

Courses	Hours		
Core Courses	27	Core Courses	27
GEOL/GEOG 103 Our Dynamic Earth OR GEOL 111 The Earth	3	GEOL/GEOG 103 Our Dynamic Earth OR 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/GEOG 310 Global Hydrology	3
GEOL 311 Oceanography	3	GEOL 311 Oceanography	3
GEOL 325 Intro to Minerals and Rocks	3	GEOL 325 Intro to Minerals and Crystalline Rocks	3
GEOL 360 Sedimentology and Stratigraphy	4	GEOL 360 Sedimentology and Stratigraphy	4
GEOL 380 Intro to Field Techniques or	3		Mark 19 19 19 19 19 19 19 19 19 19 19 19 19

Proposal Date: 1/29/16

GEOG 452 Geoscience Field Experiences			
GEOL 408 Structural Geology	4	GEOL 408 Structural Geology	4
GEOL 499 Professional Preparation	2	GEOL 499 Professional Preparation	2
Elective Courses	5	Elective Courses	6
5 hours of elective courses selected from any GEOL 2xx 4xx courses, such as: 270, 310, 311, 315, 325, 330, 350, 399, 405, 415, 420, 430, 432, 440, 465, 470, 475, and from GEOG 310, 391, 420, and GISC 417, 419	5	6 hours of elective courses selected from the following GEOL 2xx – 4xx courses: 270, 315, 330, 380, 399, 405, 415, 420, 440, 465, 470, 475, 485 and from GEOG 226, 280, 391, 420, 452, METR 121 and GISC 317	
Minimum Program Hours	<u>32</u>	Minimum Program Hours	33
Requirements outside Geology	<u>21</u>	Requirements outside Geology	18
		GEOG 300 Writing in the Geosciences ** Note: Satisfies Colonnade Foundations Writing in the Disciplines requirement effective Fall 2014.	3
GISC 316 Fundamentals of GIS	4	GISC 316 Fundamentals of GIS	4
MATH 117 Trigonometry	3	MATH 117 Trigonometry	3
CHEM 105 Fundamentals of General Chemistry	3	CHEM 105 Fundamentals of General Chemistry	3
CHEM 106 Fundamentals of General Chemistry Lab	1	CHEM 106 Fundamentals of General Chemistry Lab	1
PHYS 201 or PHYS 180-181 Intro. Modern Physics + Lab	4	BIOL 122/123 or PHYS 201 or PHYS 180-181 Intro. Modern Physics + Lab	4
CS 146	3		
METR 121 Meteorology	3		
Minor Field		Minor Field	

- 4. Rationale for the proposed program change: The proposed program restructures the curriculum to appeal to a broader pool of students who are interested in Earth Science but who do not wish to take the more advanced coursework required for the professional Geology degree. The increase in elective hours from 5 to 6 hours reflects the expectation that students in the program will take a minimum of 2 elective courses in addition to courses required in the core and outside the major.
- 5. Proposed term for implementation and special provisions (if applicable): 201630

Proposal Date: 1/29/16

0.	Dates of prior committee approvals:	
	Department of Geography and Geology	<u>1/29/2016</u>
	Ogden College Curriculum Committee	
	Undergraduate Curriculum Committee	
	University Senate	

Proposal Date: 1-12-16

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

Contact Person: Hope Marchionda, hope.marchionda@wku.edu, 5-2961

1. Identification of proposed course:

- 1.1 Course prefix (subject area) and number: MATH 112
- 1.2 Course title: Problem Solving and Mathematical Skills for Teachers
- 1.3 Abbreviated course title: PROB SOLV & MATH SKILLS TCHRS (maximum of 30 characters or spaces)
- 1.4 Credit hours: 3

Variable credit (yes or no) No

- 1.5 Grade type: Standard
- 1.6 Prerequisites/corequisites: none
- 1.7 Course description: Development of mathematical skills and problemsolving techniques necessary for preservice teachers. Topics include: number and algebra, geometry, probability and statistics.

2. Rationale:

- 2.1 Reason for developing the proposed course: Faculty currently teaching mathematics content courses for elementary education majors have identified deficiencies in preparation among students who have taken only MATH 109: General Mathematics or equivalent transfer courses. MATH 112 is a foundations course specifically covering content relevant to elementary preservice teachers.
- 2.2 Projected enrollment in the proposed course: Based on approximately 72 per semester
- 2.3 Relationship of the proposed course to courses now offered by the department: This course will prepare elementary and special education majors to take MATH 205, 206, and 308. This course is replacing MATH 109T which is a special teachers section of a Colonnade course that the department currently offers.
- 2.4 Relationship of the proposed course to courses offered in other departments:

 None
- 2.5 Relationship of the proposed course to courses offered in other institutions:
 None

3. Discussion of proposed course:

- 3.1 Schedule type: L
- 3.2 Learning Outcomes: Students will be able to
 - Interpret information presented in mathematical and/or statistical forms.
 - Illustrate and communicate mathematical and/or statistical information symbolically, visually and/or numerically.
 - Determine when computations are needed and correctly execute the appropriate computations.

- Make inferences, evaluate assumptions, and assess limitations in estimation modeling and/or statistical analysis.
- Employ logic in solving a problem to arrive at a conclusion.
- Choose appropriate strategies to solve problems and recognize when multiple strategies will work to reach a solution.
- Recognize and find multiple solutions when appropriate.

3.3 Content outline:

- Problem solving techniques, strategies, and models
- Number sets of numbers; real number operations and manipulation
- Algebra expressions, equations, and inequalities
- Geometry vocabulary, measurement, area/perimeter
- Probability counting, theoretical and empirical probabilities
- Statistics descriptive statistics and graphical representations
- 3.4 Student expectations and requirements:
 Students will complete problem sets, assignments, and exams.
- 3.5 Tentative texts and course materials: Pirnot, T. (2014). *Mathematics All Around. Boston: Pearson.*

4. Resources:

- 4.1 Library resources: Current library resources are adequate.
- 4.2 Computer resources: Current computer resources are adequate.

5. Budget implications:

- 5.1 Proposed method of staffing: Current mathematics education faculty is adequate.
- 5.2 Special equipment needed: None
- 5.3 Expendable materials needed: None
- 5.4 Laboratory materials needed: None

6. Proposed term for implementation:

Fall 2016

Mathematics Department	1-21-16
Ogden College Curriculum Committee	
Professional Education Council	
General Education Committee	
Undergraduate Curriculum Committee	
University Senate	12

Proposal Date: 02/21/2016

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

Contact Person: Leslie Plumlee, leslie.plumlee@wku.edu, X56210

1. Identification of proposed course:

- 1.1 Course prefix (subject area) and number: MATH 115
- 1.2 Course title: Applied College Algebra
- 1.3 Abbreviated course title: Applied College Algebra
- 1.4 Credit hours: 3 Variable credit: No
- 1.5 Grade type: Standard letter grade
- Prerequisites/corequisites: Math ACT score of 22 or better or Math SAT score of 510 or better or a score of 14 or better on the WKU Math Placement Exam or a score of 14 or better on the KYOTE or a score of 50 or better on the COMPASS (College Algebra domain) or DMA 096C with a grade of "C" or better.
- 1.7 Course description: Intended primarily for students who are not majoring in a scientific or technical field; not intended for students whose curriculum requires trigonometry or calculus. Emphasis is on real-world problems that involve reading, writing, calculating, synthesizing, and clearly reporting results. Topics include linear, quadratic, exponential and logarithmic functions, and systems of equations. (Graphing calculator required.)

2. Rationale:

- 2.1 Reason for developing the proposed course: After striving to make MATH 116 fulfill the needs of both students for whom it is a terminal course and students who take it as a prerequisite for MATH 117, the mathematics faculty is convinced that separate courses for the two groups would better serve the needs of both. Offering MATH 115 as a terminal college algebra course for students in other disciplines will allow MATH 116 to be taught at the level of rigor that will better prepare students in STEM disciplines for MATH 117 and MATH 136.
- 2.2 Projected enrollment in the proposed course: It is anticipated that approximately 1000 students will take this course each year.
- 2.3 Relationship of the proposed course to courses now offered by the department: Although similar in content to MATH 116, the emphasis of MATH 115 will be on algebra topics which support applications in social and life sciences. MATH 115 will not serve as a prerequisite for any other mathematics course.
- 2.4 Relationship of the proposed course to courses offered in other departments: None.
- Relationship of the proposed course to courses offered in other institutions:
 Similar courses are offered at the following institutions:
 Appalachian State University: College Algebra with Applications MAT 1020
 College of Southern Maryland: Applied College Algebra Concepts and Models (MTH-1115)
 Louisiana State University Eunice: Applied College Algebra (MATH 1015)
 University of South Carolina Aiken: Applied College Algebra (MATH 108)

University of Louisiana- Lafayette: Applied College Algebra (MATH 105)

3. Discussion of proposed course:

- 3.1 Schedule type: L
- 3.2 Learning Outcomes: Students will be able to
 - Interpret information presented in mathematical form by learning to recognize the presence of mathematical elements such as functions, equations, graphs, tables, diagrams, figures or descriptive text.
 - Accurately determine how to use appropriate mathematical elements in the context of a given problem.
 - Determine when computations are needed and execute them appropriately.
 - Use exercises designed to teach recognition of the appropriate algebraic function, expression or equation (e.g. linear, quadratic, logarithmic exponential) needed to model a given problem and then develop skill in applying such modeling.
 - Illustrate and communicate mathematical information symbolically, visually and/or numerically.
 - Make inferences, evaluate assumptions and assess limitations in estimation modeling.

3.3 Content outline:

Applications of

- Linear functions, equations and inequalities
- Quadratic functions and equations
- Exponential functions and equations
- Logarithmic functions and equations
- Systems of equations in two variables
- 3.4 Student expectations and requirements: Students will complete assignments, quizzes and exams.
- 3.5 Tentative texts and course materials:

Rockswold, G.K. (2012), Essentials of College Algebra with Modeling & Visualization. Boston, MA: Addison Wesley. ISBN:978-0-321-71528-9

4. Resources:

- 4.1 Library resources: Current library resources are adequate.
- 4.2 Computer resources: Current computer resources are adequate.

5. Budget implications:

- 5.1 Proposed method of staffing: Current mathematics faculty is adequate.
- 5.2 Special equipment needed: None
- 5.3 Expendable materials needed: None
- 5.4 Laboratory materials needed: None

6. Proposed term for implementation: Spring 2017

Department of Mathematics	01/21/2016
Ogden College Curriculum Committee	

General Education Committee	
Undergraduate Curriculum Committee	
University Senate	

Proposal Date: 11/09/15

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

Contact Person: Hope Marchionda, hope.marchionda@wku.edu, 5-2961 Patrick Brown, patrick.brown@wku.edu, 5-6247

1. Identification of proposed course:

- 1.1 Course prefix (subject area) and number: MATH 225
- 1.2 Course title: Introduction to Advanced Mathematics for Middle Grades Teachers
- 1.3 Abbreviated course title: INTRO ADV MATH MID TCHRS (maximum of 30 characters or spaces)
- 1.4 Credit hours: 3 Variable credit: No
- 1.5 Grade type: Standard Letter Grade
- 1.6 Prerequisites: MATH 136
- 1.7 Course description: Development of skills in reasoning, justification, abstraction, generalization, and making connections through the study of selected topics from logic, sets, relations and functions, combinatorics, number theory, graph theory, and matrix algebra, as appropriate for middle grades mathematics teachers.

2. Rationale:

- 2.1 Reason for developing the proposed course: Faculty currently teaching upper division courses for middle grades mathematics majors have identified deficiencies in the students' ability to generalize, reason abstractly, and justify their reasoning. In addition, we have identified some content gaps in our current course sequence that require remediation in upper division courses. This new course will bridge the gap between the more computational lower division courses and the more abstract upper division courses.
- 2.2 Projected enrollment in the proposed course: 16-20 each semester. This estimate is based on current enrollment levels for other courses in the major.
- 2.3 Relationship of the proposed course to courses now offered by the department: This course will prepare middle grades mathematics majors for upper division courses. Specifically, it will serve as a transition course between MATH 136 and MATH 304. While most of the topics of the proposed course are covered in either MATH 310 or MATH 307, they are taught at a level of rigor and depth more appropriate for future mathematicians and high school mathematics teachers. The proposed course will be specifically targeted to future middle school teachers.
- 2.4 Relationship of the proposed course to courses offered in other departments: None.

2.5 Relationship of the proposed course to courses offered in other institutions:

None of our benchmark institutions or other institutions in Kentucky offers a
dedicated major in Middle Grades Mathematics. Therefore, none of them offers
a course similar to the one proposed.

3. Discussion of proposed course:

- 3.1 Schedule type: L
- 3.2 Learning Outcomes:
 - Students will assess the validity of mathematical arguments in informal and formal proofs.
 - Students will be able to generalize mathematical concepts from concrete to abstract.
 - Students will be able to provide verbal and written justifications for solutions to problems.
 - Students will be able to construct proofs from various branches of mathematics.
 - Students will demonstrate the ability to make connections within and between various strands of mathematics.

3.3 Content outline:

- Reasoning, justification, abstraction, generalization, making connections
- Logic, truth tables, quantifiers, conditional statements, implications
- Elementary direct and indirect proof/justification techniques, recursion and induction, pigeonhole principle
- Sets and set operations, relations and functions
- Combinations and permutations, fundamental theorem of counting, Pascal's triangle and binomial coefficients
- Divisibility and Euclidean algorithm
- Number patterns, number sequences, Fibonacci numbers and golden ratio
- Graphs, directed graphs, trees, coloring problems, Königsberg Bridge and traveling salesman problems
- Matrices, vectors, matrix algebra, solving linear systems
- 3.4 Student expectations and requirements: Students will complete problem sets, assignments, and exams.
- 3.5 Tentative texts and course materials:

Wheeler, E. R., & Brawner, J. N. (2010). Discrete Mathematics for Teachers.

Charlotte, NC: Cengage. ISBN: 978-1617350269

4. Resources:

- 4.1 Library resources: Current library resources are adequate.
- 4.2 Computer resources: Current computer resources are adequate.

5. Budget implications:

5.1 Proposed method of staffing: Current mathematics education faculty is adequate.

5.4 Laboratory materials needed: None

6. Proposed term for implementation: Spring 2017

7. Dates of prior committee approvals:

Department of Mathematics
Ogden College Curriculum Committee
Professional Education Council
Undergraduate Curriculum Committee
University Senate

Special equipment needed: None Expendable materials needed: None

5.2

5.3

Proposal Date: 11/9/15

Ogden College of Science & Engineering Mathematics Department Proposal to Make Multiple Revisions to a Course (Action Item)

Contact Person: Hope Marchionda, hope.marchionda@wku.edu, 5-2961 or Patrick Brown, patrick.brown@wku.edu, 5-6247

1. Identification of course:

- 1.1 Current course prefix (subject area) and number: MATH 490
- 1.2 Course title: Seminar in Middle Grades Mathematics

2. Revise course title: N/A

- 2.1 Current course title:
- 2.2 Proposed course title:
- 2.3 Proposed abbreviated title:
- 2.4 Rationale for revision of course title:

3. Revise course number: N/A

- 3.1 Current course number:
- 3.2 Proposed course number:
- 3.3 Rationale for revision of course number:

4. Revise course prerequisites/corequisites/special requirements: N/A

- 4.1 Current prerequisites/corequisites/special requirements: (indicate which)
- 4.2 Proposed prerequisites/corequisites/special requirements:
- 4.3 Rationale for revision of course prerequisites/corequisites/special requirements:
- 4.4 Effect on completion of major/minor sequence:

5. Revise course catalog listing:

5.1 Current course catalog listing:

Hands-on activities emphasize connections among various areas of mathematics; communicating mathematics effectively and applications of middle school mathematics. Papers and oral presentations are required.

5.2 Proposed course catalog listing:

Designed to integrate the ideas and techniques students have encountered in the middle grades mathematics major. Students undertake independent investigations in mathematics. Papers and oral presentations are required.

5.3 Rationale for revision of course catalog listing:

The course description is being modified to more closely mirror the description of another capstone course in our department, namely MATH 498.

6. Revise course credit hours:

- 6.1 Current course credit hours: 1
- 6.2 Proposed course credit hours: 1-3

6.3 Rationale for revision of course credit hours:

Students in this class study literature in depth and conduct independent research on an appropriate mathematics topic. The depth and breadth of this work mirrors that of the capstone course in the department for mathematics majors (MATH 498). Students will be required to give two presentations (midterm and final) and submit a 7-11 page (single-spaced) paper that must meet appropriate professional and technical standards. Students will be required to attend midterm and final talks. The department is convinced that the amount of work involved warrants three credit-hours instead of one. The course needs to be a variable credit course to accommodate students in the current and revised programs.

7.	Revis	se grade type: N/A		
	7.1	Current grade type:		
	7.2	Proposed grade type:		
	7.3	Rationale for revision of grade type:		
8.	Prop	osed term for implementation: Fall 2016		
9.	Dates	s of prior committee approvals:		
	Mathe	ematics Department	11-20-15	
	Ogde	n College Curriculum Committee		
	Profes	ssional Education Council		
	Under	rgraduate Curriculum Committee		

University Senate

Proposal Date: 11/9/15

Ogden College of Science & Engineering Mathematics Department Proposal to Revise A Program (Action Item)

Contact Person: Hope Marchionda, hope.marchionda@wku.edu, 5-2961 or Patrick Brown, patrick.brown@wku.edu, 5-6247

1. Identification of program:

- 1.1 Current program reference number: 730
- 1.2 Current program title: Middle Grades Mathematics
- 1.3 Credit hours: 32-33

2. Identification of the proposed program changes:

- Replacing MATH 117 and MATH 136 or MATH 136 and MATH 137 with MATH 136 and MATH 225.
- Raising the required GPA for admission to the major from 2.4 to 2.5.
- Replacing MATH 490 with MATH 490 or MATH 498.
- Raising the overall GPA in required mathematics courses from 2.5 to 2.75.
- Increasing total number of hours from 32-33 to 34.

3. Detailed program description:

(Side-by-side table is required for most program changes showing revised program on the right and identifying deletions by strike-through and additions in boldface.)

Current Program	Proposed Program
	(proposed revision are noted in bold text)
A major in middle grades mathematics is for	A major in middle grades mathematics is for
students who plan to teach mathematics in	students who plan to teach mathematics in
grades 5-9 only. The degree requires a second	grades 5-9 only. The degree requires a second
major in science and mathematics education	major in science and mathematics education
(SMED). Upon successful completion of both	(SMED). Upon successful completion of both
majors, the student will receive a Bachelor of	majors, the student will receive a Bachelor of
Science degree.	Science degree.
Students who wish to declare a 730 middle	Students who wish to declare a 730 middle
grades mathematics major will initially be	grades mathematics major will initially be
designated as "seeking admission" until the	designated as "seeking admission" until the
following requirements have been satisfied:	following requirements have been satisfied:
 Complete MATH 117 and MATH 	 Complete 3 of the following with
136, or MATH 136 and MATH	a grade of "C" or better in each
137; and MATH 205, with a grade	course: MATH 136, MATH 183,
of "C" or better in each course.	MATH 205, MATH 206, MATH
I I ave an averall CDA of at least 2.4	225.
Have an overall GPA of at least 2.4 in all middle grades mathematics.	 Have an overall GPA of at least 2.5
in all middle grades mathematics	in all middle grades mathematics

- program courses (MATH 117 and above) completed prior to admission.
- Note: If a course is repeated, then
 the second grade is used to compute
 the GPA. If a course is repeated
 multiple times, then the average of
 all grades after the first attempt is
 used to compute the GPA.

The student must complete a minimum of 32 hours in mathematics by taking the following required courses: MATH 117 and 136 OR MATH 136 and 137; MATH 183 or STAT 301; MATH 205, 206, 304, 308, 403 or 323, 411 or 421, 413, 490. Students must attain a grade of "C" or better in each required course and must have a 2.5 GPA overall in required mathematics courses.

- program courses (MATH **136** and above) completed prior to admission.
- Note: If a course is repeated, then the second grade is used to compute the GPA. If a course is repeated multiple times, then the average of all grades after the first attempt is used to compute the GPA.

The student must complete a minimum of 34 hours in mathematics by taking the following required courses: MATH 136, MATH 183 or STAT 301, MATH 205, 206, 225 or 310, 304, 308, 403 or 323, 411 or 421, 413, and 3 hours of 490 or 498. Students must attain a grade of "C" or better in each required course and must have a 2.75 GPA overall in required mathematics courses.

4. Rationale for the proposed program change:

- MATH 117 is a preparatory course and is not appropriate as a requirement in the major. Since MATH 137 was not required in the major, but was only an option that few students selected, we decided to replace it with MATH 225. This course was developed to introduce advanced topics critical to middle grades mathematics majors. Therefore, MATH 117 and MATH 136 or MATH 136 and MATH 137 is being replaced by MATH 136 and MATH 225.
- The GPA required for student teaching was raised from 2.5 to 2.75. Therefore, we are changing it in our program requirements. We also are raising our admission GPA from 2.4 to 2.5 to reflect the higher exit requirement.
- To accommodate students who are seeking both middle grades and secondary mathematics certification, we will accept the capstone for secondary mathematics majors in place of the middle grade mathematics capstone. Therefore, we are replacing MATH 490 with MATH 490 or MATH 498.
- Due to the changes in requirements listed above and the change in hours of MATH 490 from 1 to 3 hours, the total number of hours in the major is increasing from 32-33 to 34.

5. Proposed term for implementation and special provisions: Fall 2016

Mathematics Department	11-20-15	200
Ogden College Curriculum Committee		
Professional Education Council		
Undergraduate Curriculum Committee		
University Senate		

Proposal Date: 1/20/16

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

Contact Person: Andy Mienaltowski, andy.mienaltowski@wku.edu, 5-6475

1. Identification of proposed course:

- 1.1 Course prefix (subject area) and number: PSYS 260
- 1.2 Course title: Introduction to Biopsychology
- 1.3 Abbreviated course title: INTRO BIOPSYCHOLOGY (maximum of 30 characters or spaces)
- 1.4 Credit hours:

2

Variable credit (yes or no)

- 1.5 Grade type: Standard letter grade
- 1.6 Prerequisites/corequisites: none
- 1.7 Course description: An introductory class emphasizing the contributions of molecular, cellular, physiological, and evolutionary biology to the scientific understanding of psychological processes. Topics include the brain and nervous system, sensation and perception, hormones and behavior, and the interaction of genes and environment.

2. Rationale:

2.1 Reason for developing the proposed course:

There are three broad rationales for the development of this course, 1) changes within the discipline of psychology, 2) changes in related disciplines, especially the health sciences, and 3) continued development of WKU's latest strategic plan.

Changes within the discipline of psychology. One of the main reasons for the development of this course is the need to keep departmental offerings current with changes in the discipline. The recently revised guidelines of the American Psychological Association for undergraduate programs in psychology focus on the role that psychology plays in advancing the scientific mission of the discipline. Given the interdisciplinary nature of psychological science, three of the many justifications for the revisions of the guidelines are particularly relevant: 1) The identity of psychology as a STEM discipline should be strengthened, 2) Psychology should be promoted as a hub science with courses reflecting the multi-disciplinary nature of science within courses (e.g., biology, chemistry, physics, computer science, engineering, etc.) and, 3) Greater encouragement of sequencing in curriculum to scaffold growth of knowledge and research skills. The current course will help to meet these demands by encouraging students to understand the close ties between psychology and other STEM disciplines such as biology and biochemistry. This course will help to lay the foundation for an interdisciplinary approach to thinking about these fields. In addition, by providing a greater emphasis on the scientific methods used in psychological research, students will be better prepared for the use of this knowledge in later psychological sciences courses.

Changes in health science admissions. Recent revisions to the Medical College Admissions Test (MCAT), reflect an increased awareness that behavioral, social, and biological factors are key to understanding health. The APA Board of Educational Affairs has estimated that, because of changes in health practitioner admissions standards, psychology education should prepare for an influx of pre-health students in introductory level psychology courses, statistics, and research methods courses. In fact, they suggest that nearly all pre-health students will take an introductory level psychology course in the next few years. The proposed course will provide a strong foundation on which these students can build a biopsychosocial approach to understanding health and development.

Strategic planning. The Department of Psychological Sciences is developing a strategic plan that will complement and support the WKU strategic plan. One of our main objectives is to grow undergraduate student engagement in scientific research. This course will focus extensively on the research methods that are used in a variety of sub-disciplines. With this early introduction to the science of psychology, we anticipate that more students will be able to take advantage of the research opportunities offered in the department.

- 2.2 Projected enrollment in the proposed course: 75-100
- 2.3 Relationship of the proposed course to courses now offered by the department:

PSYS 100, Introduction to Psychology, deals with general principles of behavior, including topics such as learning, motivation, development, social behavior, and intelligence. Although the proposed course will address a few of the same topics, the focus will be on the biological underpinnings of these behaviors. A review of syllabi from recent offerings of Introduction to Psychology suggests that, depending on the instructor, around 25% or less of the course content deals explicitly with the relationship between biology and behavior.

The Department of Psychological Sciences offers several advanced courses with topics that build upon those that will be introduced in the proposed course. (e.g., PSYS 360-Behavioral Neuroscience, PSYS 363, Sensation and Perception, PSYS 462-Neuroscience of Learning and Memory, PSYS 465-Psychopharmacology). A lower-level introduction to the relationship between biological and psychological processes will help to ensure student success in these more advanced courses.

2.4 Relationship of the proposed course to courses offered in other departments:

The Department of Psychology also offers PSY 100 Introduction to Psychology (see above description of PSYS 100, which is equivalent to PSY 100).

The Biology Department offers courses in human physiology (BIOL 131 Human Anatomy and Physiology and BIOL 231 Advanced Human Anatomy and Physiology), genetics (BIOL 327 Genetics), and neurobiology (BIOL 335 Neurobiology) as well as courses in animal behavior (BIOL 315 Ecology and BIOL 334 Animal Behavior). The primary focus of the current course is biological influences on human behavior at an introductory level. This course will complement other introductory courses taught by faculty from Ogden College (e.g., BIOL 120 Biological Concepts – Cells, Metabolism, and Genetics; and BIOL 122 Biological Concepts – Evolution,

Diversity, and Ecology) by offering students an additional opportunity to develop a foundation linking neurophysiological systems to psychological processes.

2.5 Relationship of the proposed course to courses offered in other institutions:

Many institutions offer an introductory course in biological psychology in addition to more advanced topical courses. The following table illustrates those benchmark and regional institutions that have adopted this approach:

D. Line Commission	- P
Bowling Green State	Psychophysiology
University	• Intro to Neuroscience
	Behavioral and Neural Genetics
	Psychoneuroendocrinology
East Tennessee University	Health psychology
	• Ecopsychology
	Behavioral neuroscience
	Advanced behavioral neuroscience
Florida Atlantic University	 Biological Bases of Behavior (2 semesters)
	 Neuropsychology
	 Psychophysiology
	Developmental Psychobiology
Middle Tennessee State	 Brain, Behavior. and Consciousness
University	 Behavioral Neuroscience
	 Neuropsychology
Northern Illinois University	 Introduction to Brain and Behavior
	Physiological Psychology
Ohio University	 Psychophysiology
	 Behavior Genetics
	Neuropsychology
University of North Carolina	Introduction to Brain and Behavior
- Charlotte	 Physiological Psychology
	Hereditary Behavior
	 Neuropsychology
	Cognitive Neuroscience
	Seminar in Physiological Psychology
University of North Carolina	Biological Psychology
- Greensboro	Brain and Psychological Processes
University of Southern	Behavioral Neuroscience
Mississippi	Sleep and Behavior
Louisville	Physiological Psychology
	Neuroscience
	Cognitive Neuroscience
UK	Brain and Behavior
	Behavioral Neuroscience
EKU	Physiological Psychology
Lixo	Mind and Brain
	• Miliu and Diani

3. Discussion of proposed course:

- 3.1 Schedule type: Lecture, Seminar
- 3.2 Learning Outcomes:
 - 3.2.1 Demonstrate an understanding of research ethics and methodology within biological psychology, including structural and functional analysis of biological and psychological systems and the impact of scientific and therapeutic intervention on thought and behavior
 - 3.2.2 Explain the basic principles involved in neurobiological development, sensory machinery and perceptual systems, influences of gene-environment interactions on behavior, the neuroscience of cognition, social and affective neuroscience, and biological etiologies of psychopathology
 - 3.2.3 Apply neuroscientific principles to investigate the role of biological systems underlying thought and behavior and to make predictions about the connection between behavior and molecular biology and physiology within the disciplines of psychology
 - 3.2.4 Explain the connection between normal/abnormal neurophysiological processes and normal/abnormal human cognitive and socioemotional functioning

3.3 Content outline:

- Psychology as a science
 - o Philosophy and importance of science
 - Scientific ethics
 - Applying psychology as a science
- Psychological research methods
 - Behavioral methods
 - o Psychophysiological methods
 - Computational methods
- Neural Foundations
 - o The brain and nervous system
 - Hormones and Behavior
 - o Biochemistry of relationships
 - o Sensation and Perception
 - Comparative neurophysiology
- Interactions between environment and mind/body
 - Nature and Nurture
 - Epigenetics
- Cognitive neuroscience
 - Learning and memory
 - o Language
 - o Intelligence
- Developmental growth and change
 - Infancy and childhood
 - Adulthood and aging
- Social and affective neuroscience
 - Motivation and reward

- o Internal and external causes of aggression and violence
- Stress and emotion
- Neurochemistry of relationships
- Psychopathology
 - Psychological disorders
 - Psychopharmacology
- 3.4 Student expectations and requirements: Students will complete in-class and/or homework assignments, and quizzes and/or exams to assess their understanding of the course content. No prior courses in biology or psychology are necessary for a student to successfully meet the course's proposed learning outcomes.
- 3.5 Tentative texts and course materials:
 - Garrett, B. (2015). *Brain & Behavior: An Introduction to Biopsychology, 4th Ed.*, Los Angeles: Sage.
 - Kalat, J.W. (2013). *Biological Psychology*, 12th Ed., Belmont, CA: Cengage Learning.
 - Kolb, B., Whishaw, I. Q., & Teskey, G. C. (2016). *An Introduction to Brain and Behavior*, 5th Ed., New York: Worth.
 - Psychology as a Biological Science. (2015). Retrieved from http://nobaproject.com/textbooks/psychology-as-a-biological-science

4. Resources:

- 4.1 Library resources: The library resources that are currently available (e.g., scientific journals and books) will be adequate for the course. No additional resources are required.
- 4.2 Computer resources: No additional computer resources are required for this course. Existing resources are sufficient.

5. Budget implications:

- 5.1 Proposed method of staffing: The course will be taught by current faculty. A number of faculty have expertise within biopsychology within the Department of Psychological Sciences.
- 5.2 Special equipment needed: No special equipment needed.
- 5.3 Expendable materials needed: No expendable materials are needed.
- 5.4 Laboratory materials needed: No laboratory materials are needed for this course.

6. Proposed term for implementation: Fall 2015

Department/ Unit _Psychological Sciences	<u>January 27, 2015</u>
College Curriculum Committee	
Professional Education Council (if applicable)	
General Education Committee (if applicable)	
Undergraduate Curriculum Committee	
University Senate	

	*Changes due to fall break. ** Change due to holiday break.	1" I nursaay of the month (unless otherwise indicated) Changes due to fall break. ** Change due to holiday break.	2 nd Wednesday of the month (unless otherwise	3:45 p.m. WAB 239 4th Thursday of the month	3:45 p.m. Faculty House
Change to meet the last spring University Senate Deadline Please submit one electronic copy of the proposal. Submit either an original signed paper copy of the inventory form, library resources form & bibliography, or you may submit a scanned signed copy of these documents by email on or before the due date to Jennifer at jennifer.anderson@wku.edu.	Change to meet the last spring University Senate Deadline omit one electronic copy of the proposal. Submit either an origin of the inventory form, library resources form & bibliography, o anned signed copy of these documents by email on or before the Jennifer at jennifer.anderson@wku.edu.	thate Deadline that are the an original signed bibliography, or you may not before the due date to du.	*Change due to Spring Break	(unless otherwise indicated) *Changes due to holiday breaks	3rd Thurs. of the month *Change due to holiday break (Note: items going from UCC to Faculty Senate go the following month)
Proof Copy to Linda Pulsinelli	Electronic Copy to Jennifer Anderson	Meeting	Meeting	Meeting	Meeting
					August 27, 2015
					September 17, 2015
August 24, 2015	August 28, 2015	September 3, 2015	September 9, 2015	September 24, 2015	October 15, 2015
September 28, 2015	October 2, 2015	October 8, 2015*	October 9, 2015	October 22, 2015	November 19, 2015
	October 30, 2015	November 5, 2015	November 11, 2015	November 17, 2015*	December 10, 2015*
November 16, 2015**	November 20, 2015**	December 3, 2015	December 19, 2015	December 8, 2015*	January 21, 2016
			9 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	January 28, 2016	February 18, 2016
January 25, 2016	January 29, 2016	February 4, 2016	February 10, 2016	February 25, 2016	March 17, 2016
February 18, 2016	February 22, 2016	March 3, 2016	March 16, 2016*	March 24, 2016	April 14, 2016
March 17, 2016	March 21, 2016	March 31, 2016	April 13, 2016	April 21, 2016	May 12, 2016
April 21, 2016	April 25, 2016	May 5, 2016	May 11, 2016		
3:00 p.m. CO 4 th Friday of the n *Change due to	OCSE Graduate Committee 2015-16 3:00 p.m. COHH (College High Hall) 4123 4th Friday of the month (unless otherwise indicated) *Change due to Thanksgiving and Winter Breaks.	16 4123 indicated) Breaks.	3:00 p.m. W 2nd Thurs Graduate Council mee	Graduate Council 2015-16 3:00 p.m. WAB 239 (please note where times are different) 2nd Thursday of the month (unless otherwise indicated) Graduate Council meeting on August 20, 2015 (before the first Ogden GCC mtg.)	are different) ie indicated) e first Ogden GCC mtg.)
Please submit one electronic copy of the proposal. Submit either an original signed paper copy of the inventory form, library resources form and bibliography, or you may submit a scanned signed copy of these documents by email on or before the due date to Lisa Wood at lisa.wood@wku.edu. For a complete list of required documents for course proposal type please go to http://www.wku.edu/graduatecouncil/index.php	of the proposal. Submit ibrary resources form and ese documents by email of the For a complete list of http://www.wku.edu/gra	either an original signed I bibliography, or you may on or before the due date to required documents for aduatecouncil/index.php			
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