**Ogden College of Science and Engineering**

**Office of the Dean**

**745-4449**

**REPORT TO THE UNIVERSITY CURRICULUM COMMITTEE**

Date: March 12, 2013

The Ogden College of Science and Engineering submits the following action items for consideration at the March 2013, UCC meeting:

1. New Business

|  |  |
| --- | --- |
| **Type of item** | **Description of Item & Contact Information** |
| Action | **Multiple Revisions to a Course**  AGRO 317, Plant Pathology  Contact: Jack L. Rudolph, Jr., [jack.rudolph@wku.edu](mailto:jack.rudolph@wku.edu), x53151 |
| Action | **Multiple Revisions to a Course**  BIOL 317, Plant Pathology  Contact: Scott Grubbs, [scott.grubbs@wku.edu](mailto:scott.grubbs@wku.edu), x55048 |
| Action | **Multiple Revisions to a Course**  GEOG 391, Data Analysis and Interpretation  Contact: Kevin Cary, [kevin.cary@wku.edu](mailto:kevin.cary@wku.edu), x52981 |
| Action | **Multiple Revisions to a Course**  GEOG 484, Theory and Application  Contact: David Keeling, [david.keeling@wku.edu](mailto:david.keeling@wku.edu), x54555 |
| Action | **Multiple Revisions to a Course**  AMS 301, Introduction to Food Science and Technology  Contact: John Khouryieh, [hanna.khouryieh@wku.edu](mailto:hanna.khouryieh@wku.edu), 270-852-6407 |
| Action | **Create a New Course**  BIOL 457, Herpetology  Contact: Jarrett Johnson, [jarrett.johnson@wku.edu](mailto:jarrett.johnson@wku.edu), x56032 |
| Action | **Create a New Course**  CHEM 240, Introduction to Organic Chemistry  Contact: Hemali Rathnayake, [hemali.rathnayake@wku.edu](mailto:hemali.rathnayake@wku.edu), x56238 |
| Action | **Create a New Course**  CHEM 307, Food Chemistry  Contact: Moon-Soo Kim, [moon-soo.kim@wkku.edu](mailto:moon-soo.kim@wkku.edu), x54362 |
| Action | **Create a New Course**  CHEM 421, Inorganic Chemistry Lab  Contact: Les Pesterfield, [lester.pesterfield@wku.edu](mailto:lester.pesterfield@wku.edu), x56246 |
| Action | **Create a New Course**  GEOG 103, Our Dynamic Planet  Contact: Greg Goodrich, [gregory.goodrich@wku.edu](mailto:gregory.goodrich@wku.edu), x55986 |
| Action | **Create a New Course**  PHYS 215, Seminar for Physics Learning Assistants  Contact: Scott Bonham, [scott.bonham@wku.edu](mailto:scott.bonham@wku.edu), x56196 |
| Action | **Revise a Program**  Ref. #353, Minor in Earth Science  Contact: David Keeling, [david.keeling@wku.edu](mailto:david.keeling@wku.edu), x54555 |

Proposal Date: 10-18-12

**Ogden College of Science**

**Department of Agriculture**

**Proposal to Make Multiple Revisions to a Course**

**(Action Item)**

Contact Person: Jack L. Rudolph Jr., [jack.rudolph@wku.edu](mailto:jack.rudolph@wku.edu) 270-745-3151

**1. Identification of course:**

* 1. Current course prefix (subject area) and number: AGRO 317
  2. Course title: Plant Pathology
  3. Credit hours: 3

**2. Revise course title: N/A**

* 1. Current course title:
  2. Proposed course title:
  3. Proposed abbreviated title:
  4. Rationale for revision of course title:

**3. Revise course number: N/A**

* 1. Current course number:
  2. Proposed course number:
  3. Rationale for revision of course number:

**4. Revise course prerequisites/corequisites/special requirements:**

4.1 Current prerequisites/corequisites/special requirements: none

4.2 Proposed prerequisites:AGRO 110 or permission of instructor

4.3 Rationale for revision of course prerequisites: Students are better able to understand the study of plant disease when they have had exposure to basic plant science.

4.4 Effect on completion of major/minor sequence: none

**5. Revise course catalog listing:**

* 1. Current course catalog listing: Symptoms, causes and control of some of the more representative plant diseases. Methods of control will be stressed. Lecture, three hours.
  2. Proposed course catalog listing: Introduction to common plant pathogens and diseases of agronomically important field and forage crops, turf, vegetables and ornamentals. Topics include control measures, newly discovered diseases and plant/pathogen interactions.

5.3 Rationale for revision of course catalog listing: Agro 317 is being offered now after not being taught for several years. The faculty wishes to provide a more detailed and updated description of the content.

**6. Revise course credit hours: N/A**

* 1. Current course credit hours:
  2. Proposed course credit hours:
  3. Rationale for revision of course credit hours:

**7. Proposed term for implementation:** Fall 2013

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

AgricultureDepartment: \_\_\_\_\_\_\_\_2/28/2013\_\_\_\_\_\_\_\_\_\_

OCSE Curriculum Committee \_\_\_\_\_\_\_\_3/7/2013\_\_\_\_\_\_\_\_\_\_\_

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

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

**Attachment: Course Inventory Form**

Proposal Date: 9 February 2013

**Ogden College of Science and Engineering**

**Department of Biology**

**Proposal to Make Multiple Revisions to a Course**

**(Action Item)**

Contact Person: Scott Grubbs, [scott.grubbs@wku.edu](../../../../../Files%20WKU/Biology%20WKU/CrseReact_464/scott.grubbs@wku.edu), 745-5048

**1. Identification of course:**

* 1. Current course prefix (subject area) and number: BIOL 317
  2. Course title: Plant Pathology
  3. Credit hours: 3

**2. Revise course title:**

* 1. Current course title: N/A
  2. Proposed course title: N/A
  3. Proposed abbreviated title: N/A
  4. Rationale for revision of course title: N/A

**3. Revise course number:**

* 1. Current course number: N/A
  2. Proposed course number: N/A
  3. Rationale for revision of course number: N/A

**4. Revise course prerequisites/corequisites/special requirements:**

4.1 Current prerequisites/corequisites/special requirements: Prerequisites – BIOL 120/121

4.2 Proposed prerequisites/corequisites/special requirements: Prerequisites – BIOL 120/121, BIOL 122/123

4.3 Rationale for revision of course prerequisites/corequisites/special requirements: BIOL 120/121 and BIOL 122/123 are the minimum prerequisites for all majors-level Biology courses. When BIOL 317 was last taught (prior to mid-1990’s), the current BIOL 122/123 was not part of the Biology curriculum. The current BIOL 122/123 was implemented during the 2004-2005 AY.

4.4 Effect on completion of major/minor sequence: None. The BIOL 120/121 - BIOL 122/123 sequence is required for all Biology majors and minors.

**5. Revise course catalog listing:**

* 1. Current course catalog listing: Symptoms, causes and control of some of the more representative plant diseases. Methods of control will be stressed. Lecture, two hours; laboratory, two hours.
  2. Proposed course catalog listing: Introduction to common plant pathogens and diseases of agronomically important field and forage crops, turf, vegetables and ornamentals. Topics include control measures, newly discovered diseases, and plant-pathogen interactions.
  3. Rationale for revision of course catalog listing: The science of Plant Pathology has changed considerably since this course was last taught. A modern and accurate description of course content is needed.

**6. Revise course credit hours:**

* 1. Current course credit hours: N/A
  2. Proposed course credit hours: N/A
  3. Rationale for revision of course credit hours: N/A

**7. Proposed term for implementation:** Fall 2013

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

Department of Biology: March 1, 2013

Ogden College Curriculum Committee March 7, 2013

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

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

**Attachment: Course Inventory Form**

Proposal Date: 2/15/2013

**Ogden College of Science and Engineering**

**Department of Geography and Geology**

**Proposal to Make Multiple Revisions to a Course**

**(Action Item)**

Contact Person: Kevin Cary, [kevin.cary@wku.edu](mailto:kevin.cary@wku.edu), 5-2981

**1. Identification of course:**

* 1. Current course prefix (subject area) and number: GEOG 391
  2. Course title: Data Analysis and Interpretation
  3. Credit hours: 3

**2. Revise course title:**

* 1. Current course title: Data Analysis and Interpretation
  2. Proposed course title: Spatial Data Analysis and Interpretation
  3. Proposed abbreviated title: Spatial Data Analysis
  4. Rationale for revision of course title: The proposed course title more accurately reflects the course content and distinguishes this data analysis course from other statistics courses offered at WKU. No other statistics course at WKU addresses the spatial element.

**3. Revise course prerequisites:**

3.1 Current prerequisites: GEOG 100 or GEOL 102, GEOG 110, MATH 116 or

higher, and MATH 183

3.2 Proposed prerequisites: MATH 183 and GEOG 316

3.3 Rationale for revision of course prerequisites: GEOG 316 Fundamentals of GIS is added to provide a spatial foundation for statistical analysis. The introductory courses are prerequisites for GEOG 316 and are thus deleted. MATH 183 provides the appropriate mathematical foundation for this course.

**4. Revise course catalog listing:**

* 1. Current course catalog listing: Basic concept of statistical models and use of

samples: variation, statistical measures, distribution, tests of significance, analysis

of variance and elementary experimental design, regression, correlation, and chi-

square as related to interpretation and use of scientific data.

* 1. Proposed course catalog listing: Statistical concepts and methods emphasizing

their applications in a spatial context. Statistical description and hypothesis

testing.  Visualization and analysis of spatial patterns and relationships.

4.3 Rationale for revision of course catalog listing: More accurately reflects the

structure and goals of the course.

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

**6. Proposed term for implementation:** Fall 2013

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

Geography and Geology Department \_\_\_\_\_2/22/2013\_\_\_\_\_\_

Ogden College Curriculum Committee \_\_\_\_\_3/7/2013\_\_\_\_\_\_\_

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

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

**Attachment: Course Inventory Form**

Proposal Date: 2/15/2013

**Ogden College of Science and Engineering**

**Department of Geography and Geology**

**Proposal to Make Multiple Revisions to a Course**

**(Action Item)**

Contact Person: David Keeling, [david.keeling@wku.edu](mailto:david.keeling@wku.eduy), 5-4555

**1. Identification of course:**

* 1. Current course prefix (subject area) and number: GEOG 484
  2. Course title: Planning: Theory and Application
  3. Credit hours: 3

**2. Revise course title:**

* 1. Current course title: Planning: Theory and Application
  2. Proposed course title: Planning for Global Change
  3. Proposed abbreviated title: Planning for Global Change
  4. Rationale for revision of course title: The proposed course title more accurately reflects the course content.

**3. Revise course number:**

* 1. Current course number: GEOG 484
  2. Proposed course number: GEOG 384
  3. Rationale for revision of course number: The Department is realigning many 400-level courses to 300-level status to reflect the absence of, or change in, prerequisites and to prepare for possible General Education reclassification.

**4. Revise course prerequisites:**

4.1 Current prerequisites: GEOG 240 and GEOG 317

4.2 Proposed prerequisites: GEOG 280 and GEOG 316

4.3 Rationale for revision of course prerequisites: This revised course is scheduled to become an elective in the revised Environmental Planning and Resource Management option in the Geography major; therefore, GEOG 280 is a more appropriate prerequisite, especially as GEOG 280 is also being revised. GEOG 316 is the foundational course in Geographic Information Science and is a more appropriate preparation course for GEOG 384.

4.4 Effect on completion of major/minor sequence: None

**5. Revise course description**:

5.1 Current course description: An analysis of advanced topics and results of recent

research in city and regional planning.

5.2 Proposed course description: An analysis of advanced topics and results of global

change on planning for cities, regions, and communities.

**6. Proposed term for implementation:** Fall 2013

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

Geography and Geology Department \_\_\_\_\_2/22/2013\_\_\_\_\_

Ogden College Curriculum Committee \_\_\_\_\_3/7/2013\_\_\_\_\_\_

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

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

**Attachment: Course Inventory Form**

Proposal Date: 02/07/2013

**Ogden College of Science & Engineering**

**Department of Architectural & Manufacturing Sciences**

**Proposal to Make Multiple Revisions to a Course**

**(Action Item)**

Contact Person: John Khouryieh, [hanna.khouryieh@wku.edu](mailto:hanna.khouryieh@wku.edu), 270-852-6407

**1. Identification of course:**

* 1. Current course prefix (subject area) and number: AMS 301
  2. Course title: Introduction to Food Science and Technology
  3. Credit hours: 3

**2. Revise course prerequisites/corequisites/special requirements:**

2.1 Current prerequisites: CHEM 105, BIOL 207/208

2.2 Proposed prerequisites: CHEM 105

2.3 Rationale for revision of course prerequisites:

This is the foundation course in the food processing and technology concentration. Its primary goal is to introduce students to the basics concepts of food science and technology. Students need to know only basic chemistry concepts before taking this course.

2.4 Effect on completion of major/minor sequence: None

**3. Revise course catalog listing:**

* 1. Current course catalog listing: Basic concepts of transport and storage of liquids and solids, and heating and cooling of food ingredients and food products.
  2. Proposed course catalog listing: A comprehensive introduction to the basic concepts and principles of food science and the role of science in food processing and manufacturing.
  3. Rationale for revision of course catalog listing: The current description does not focus on the basic principles of food science and technology. Students need to know the composition of foods so they can understand their physical, sensory and nutritional properties, as well as the changes that take place during processing.

**5. Proposed term for implementation:** Fall 2013

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

AMS Department: February 15, 2013

OCSE Curriculum Committee: March 7, 2013

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

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

**Attachment: Course Inventory Form**

Proposal Date: 28 January 2013

**Ogden College of Science and Engineering**

**Department of Biology**

**Proposal to Create a New Course**

**(Action Item)**

Contact Person: Jarrett Johnson, [jarrett.johnson@wku.edu](mailto:jarrett.johnson@wku.edu), 745-6032

**1. Identification of proposed course:**

* 1. Course prefix (subject area) and number: BIOL 457
  2. Course title: Herpetology
  3. Abbreviated course title: Herpetology
  4. Credit hours and contact hours: 4
  5. Schedule type: C
  6. Prerequisites: BIOL 224/225 with a grade of “C” (or higher) or consent of instructor
  7. Course description: The diversity, biology, and conservation of reptiles and amphibians. Off-campus travel will be required.

**2. Rationale:**

* 1. Reason for developing the proposed course: Amphibians and reptiles represent two of the five major lineages of vertebrates. An understanding of the taxonomy and biology of these groups is an important component of an organismal-based undergraduate education in biology. Reptile and amphibian species are popular in the pet trade and many students have had casual outdoor experiences with common local species. The proposed course would provide the opportunity for students to gain a broader understanding of the diversity and importance of reptiles and amphibians both locally and globally. Many amphibians and reptiles species are experiencing population declines, and students interested in careers in conservation or wildlife biology will likely need an understanding of the natural history of these organisms.

In addition, a course in herpetology was taught in the WKU Biology Department during the 1970s. Dr. Johnson was hired, in part, with the expectation to offer Herpetology on a least a semi-regular basis.

* 1. Projected enrollment in the proposed course: 15-20. This course was taught during spring 2012 as a temporary course (with same number), with a finishing enrollment of 15 undergraduates and 5 graduate students in a complementary 457G section.
  2. Relationship of the proposed course to courses now offered by the department: The Biology Department offers courses that cover each of the other major vertebrate groups (BIOL 326 Ornithology, BIOL 456 Ichthyology, and BIOL459 Mammalogy). The proposed course covers the remaining two groups: reptiles and amphibians. The proposed course would complement the other courses well, and provide students with the opportunity to complete their education of vertebrate ecology, evolution, and diversity. It is not unusual for a comprehensive or research institution to offer Herpetology and this is a course that had previously been taught at WKU.
  3. Relationship of the proposed course to courses offered in other departments: Little, at best. GEOL 405 (Paleontology) provides a comprehensive overview of the nature of the fossil record with particular emphasis on invertebrates. The proposed course begins with an overview of the evolution of vertebrates (fish, amphibians, mammals, reptiles, and birds) but focus mainly on the diversity, biology, and conservation of reptiles and amphibians.
  4. Relationship of the proposed course to courses offered in other institutions: Nine of our benchmark institutions (Ball State University, Western Illinois University, Missouri State University, Indiana State University, Towson University, Stephen F. Austin State University, Eastern Michigan University, Central Missouri State University, and California State University-Chico) offer a Herpetology course.

**3. Discussion of proposed course:**

* 1. Course objectives: To introduce students to the field of herpetology, while emphasizing the evolutionary relationships of major groups of amphibians and reptiles, the diversity of life-history adaptations, and the identification of species found in Kentucky. This course will include discussions of evolutionary history and the fossil record, and introduce a wide range of molecular and field techniques for the modern study of amphibian and reptile species and populations from taxonomic and ecological perspectives.
  2. Content outline:

Lecture

* Introduction to herpetology
* Concepts in systematics and evolution of Tetrapoda
* Evolution of Amniotes and major features of living amphibians
* Amphibian diversity
* Major features of living reptiles and reptile diversity
* Problems in phylogeny
* Life histories
* Reproduction and mating systems
* Osmoregulation and thermoregulation
* Locomotion, orientation and movement
* Communication and foraging ecology
* Defense
* Population ecology and phylogeography
* Conservation of amphibians and reptiles

Lab

* Salamander diversity
* Salamanders of Kentucky
* Frog diversity
* Frogs of Kentucky
* Amphibian field trip
* Turtle diversity
* Turtles of Kentucky
* Lizard diversity
* Lizards of Kentucky
* Snake diversity
* Snakes of Kentucky
* Reptile field trip
  1. Student expectations and requirements: Student performance will be based on lecture exams and laboratory practical exams.
  2. Tentative texts and course materials: Herpetology by Vitt and Caldwell (3rd Edition), A Field Guide to Reptiles & Amphibians of Eastern & Central North America by Conant and Collins (3rd Edition).

**4. Resources:**

* 1. Library resources: Herpetology by Vitt and Caldwell (3rd Edition) text on reserve.
  2. Computer resources: Departmental computer resources are sufficient to instruct students during lectures.

**5. Budget implications:**

* 1. Proposed method of staffing: Additional staff is not required. Note, this an expected components of the Dr. Johnson’s teaching requirements.
  2. Special equipment needed: None
  3. Expendable materials needed: None
  4. Laboratory materials needed: None

**6. Proposed term for implementation:** Fall 2013

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

Department of Biology: March 1, 2013

Ogden College Curriculum Committee: March 7, 2013

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

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

**Attachment: Bibliography, Library Resources Form**, **Course Inventory Form**

Proposal Date: 02/21/2013

**Ogden College of Science & Engineering**

**Department of Chemistry**

**Proposal to Create a New Course**

**(Action Item)**

Contact Person: Hemali Rathnayake, hemali.rathnayake@wku.edu, 270-745-6238

**1. Identification of proposed course:**

* 1. Course prefix (subject area) and number: CHEM 240
  2. Course title: Introduction to Organic Chemistry
  3. Abbreviated course title: Intro Organic Chemistry
  4. Credit hours and contact hours: 3 Credit hours
  5. Type of course: L
  6. Prerequisites/corequisites: CHEM 222 and CHEM 223
  7. Course catalog listing: An introduction to selected topics in organic chemistry including structure-property relationships, bonding, functional groups, and acid-base reaction mechanisms.

**2. Rationale:**

* 1. Reason for developing the proposed course: This course is designed as a preparatory course for CHEM 340 (Organic Chemistry I). This course specifically focuses on those basic concepts in organic chemistry that have been found to impede success in CHEM 340. Currently, students who have difficulty with or who withdraw from Organic Chemistry I have no options but to repeat the course. CHEM 240 is seen as a booster course that will improve fundamentals and will help facilitate success in the main sequence of organic chemistry. Moreover, it will use the same textbook as CHEM 340, thus preventing students from purchasing an additional textbook. This course will not be accepted as a course in any chemistry major or minor as it designed only as a booster class, much as CHEM 116 serves to help success in CHEM 120/121.
  2. Projected enrollment in the proposed course: Based on current enrolment in CHEM 340, projected class size is 20-30/offering.
  3. Relationship of the proposed course to courses now offered by the department: This course covers selected material from the first half of CHEM 340 such as structure-property relationship, bonding in organic compounds, functional groups and acid-base reactions.
  4. Relationship of the proposed course to courses offered in other departments: none
  5. Relationship of the proposed course to courses offered in other institutions: Similar courses are offered at other institutions as preparation for Organic Chemistry I and II.  For example, the University of Massachusetts - Amherst offers CHEM 261 as a prep course for CHEM 265 (Organic Chemistry).

**3. Discussion of proposed course:**

* 1. Course objectives: This course is designed to equip the student with the skills and fundamentals necessary to facilitate success in the organic chemistry sequence (CHEM 340 and CHEM 342). The core fundamentals of organic chemistry will be stressed, focusing on those topics that seem to be “stumbling blocks” to many students.
  2. Content outline: This includes selected topics covered in the first half of Organic Chemistry I:
* *Organic Chemical Bonds and Lewis Structures*
* *Functional Groups*
* *Acid-Base Chemistry*
* *Introduction to Substitution and Elimination Reactions and Their Mechanisms*.
  1. Student expectations and requirements: Students will be evaluated through course assignments such as quizzes, exams, and homework all of which will be evaluated by the instructor.
  2. Tentative texts and course materials: Organic Chemistry by Solomons Fryhle, 11th Edition, Wiley-Science.

**4. Resources:**

* 1. Library resources: No additional resources are required.
  2. Computer resources: No additional resources are required.

**5. Budget implications:**

* 1. Proposed method of staffing: This course is designed to be offered in Winter Term, May Term, and in the second part of the Summer semester to help students who need to take CHEM 340 during the regular terms. Consequently, it will not increase teaching loads of faculty in the organic division. Furthermore, student success and retention in Organic Chemistry is expected to improve. Special equipment needed: None
  2. Expendable materials needed: None
  3. Laboratory materials needed: None

**6. Proposed term for implementation: May 2013**

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

ChemistryDepartment/Division: February 25, 2013

OCSE Curriculum Committee March 7, 2013

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

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

**Attachment: Course Inventory Form**

Proposal Date: February 15, 2013

**Ogden College of Science and Engineering**

**Department of Chemistry**

**Proposal to Create a New Course**

**(Action Item)**

Contact Person: Moon-Soo Kim, [moon-soo.kim@wku.edu](mailto:moon-soo.kim@wku.edu), 5-4362

1. **Identification of Proposed Course:** 
   1. Course prefix (subject area) and number: CHEM 307
   2. Course title: Food Chemistry
   3. Abbreviated course title: Food Chemistry
   4. Credit hours and contact hours: 3 credit hours
   5. Type of course: L
   6. Prerequisites: CHEM 107/108, or CHEM 109, or a college-level chemistry course.
   7. Course catalog listing: An understanding of the fundamental building blocks in foods (proteins, lipids, carbohydrates, and minerals) and chemical, physical, and biological phenomena that affect food quality, texture, flavor, and safety. This course will not be accepted as a course in any chemistry major or minor as it is in the course catalog listing for CHEM 304.
2. **Rationale:**
3. Reasons for developing the proposed course: This course is designed to allow students in chemistry, nutrition, or health science disciplines to apply scientific principles to understanding the properties and functionalities of foods and the important changes occurring during food processing and storage. This course will provide students with an opportunity to develop a conceptual framework to understand unfamiliar phenomena in terms of food chemistry as well as to understand the important chemical basis of food quality, texture, flavor, and safety. While this course is designed as part of the Food Science Cluster in the context of potentially developing the Food Science Major, it is expected to be useful for non-food science students taking it as a practical application of chemical principles.
4. Projected enrollment in the proposed course: 20 based on the current enrollment of CHEM 304 Biochemistry for the Health Sciences. Students from outside the Food Science Cluster are expected to enroll as well.
5. Relationship of the proposed course to courses now offered by the department: This course builds on content in CHEM 107/108 and CHEM 109 such as proteins, carbohydrates, and lipids, but focuses on understanding chemistry as the key functional attributes of the major food components. Also this course can be accepted as a Nutritional Chemistry Minor as CHEM 304.
6. Relationship of the proposed course to courses offered in other departments: None
7. Relationship of the proposed course to courses offered in other institution: Similar courses are offered at numerous institutions as food chemistry/biochemistry. This course is one of the core food science courses in other institutions. Examples include: University of Massachusetts, Amherst: Food Science 541 Food Chemistry University of California, Davis: FST 201 Food Chemistry and Biochemistry

**3. Description of proposed course:**

1. Course objectives: The goal of this course is to enable students to understand foods as mechanistic, chemical systems. All the phenomena observed in preparing food can, in principle, be understood in classically chemical terms. Understanding how chemical systems behave enables us to control them better to meet our many needs. Students will enter the course with a strong understanding of chemistry fundamentals and leave with an understanding of how chemistry applies to food.  Through real examples, students will recognize the underlying physiochemical mechanisms responsible for food functionality and quality and will be able to use their knowledge of food chemistry to identify the important control points and consequences of the reactions.
2. Content outline:

Carbohydrates

* Introduction and structure
* Monosaccharides, oligosaccharides and polysaccharides
* Chemical reactions
* Functional properties

Proteins

* Amino acids
* Molecular bonds
* Protein structure
* Protein denaturation
* Functional properties

Enzymes

* Introduction
* Food enzyme
* Factors influencing enzyme activity

Lipids

* Structure
* Lipid processing, lipid oxidation
* Methods and control of oxidation
* Antioxidants
* Emulsions

Additives

* Colors
* Preservatives
* Flavors

1. Student expectation and requirements: The course assignments include exams, reading, and homework, as well as a paper on the application of chemistry knowledge discussed during class to a real example.
2. Tentative texts and course materials: Principles of Food Chemistry (John deMan, 3rd edition, Aspen Publishers Inc., Gaithersburd, Md.) will be required for the course. Food Chemistry (ed. Owen Fennema, 3rd edition, Marcel Dekker, New York) will be recommended as a resource. Other materials (handouts) will be provided in class.
3. **Resources**
4. Library resources: Adequate
5. Computer resources: Not Applicable
6. **Budget Implications**
7. Proposed method of staffing:

Current staffing – Dr. Moon-Soo Kim was hired in 2012 as a Food Chemist. This course will be a part of her regular teaching rotation and will be a part of the emerging Food Science curriculum in Ogden.

1. Special equipment needed: None
2. Expendable materials needed: None
3. Laboratory materials needed: None
4. **Proposed term for Implementation: Fall 2014**
5. **Dates of prior committee approvals:**

Chemistry Department: February 25, 2013

OCSE Curriculum Committee March 7, 2013

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

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

**Attachment: Course Inventory Form**

2/11/2013

**Ogden College**

**Department of Chemistry**

**Proposal to Create a New Course**

**(Action Item)**

Contact Person: Les Pesterfield, [lester.pesterfield@wku.edu](mailto:lester.pesterfield@wku.edu), 5-6246

**1. Identification of proposed course:**

* 1. Course prefix (subject area) and number: CHEM 421
  2. Course title: Inorganic Chemistry Laboratory
  3. Abbreviated course title: Inorganic Chem Lab
  4. Credit hours and contact hours: 1 hr, 3 hr
  5. Type of course: B: Laboratory
  6. Prerequisites/corequisites: Corequisite CHEM 420
  7. Course catalog listing: A laboratory course emphasizing the synthesis and characterization of inorganic compounds of the main group and transition metals. Laboratory meets once a week for three hours. (Course fee)

**2. Rationale:**

* 1. Reason for developing the proposed course:

Historically the Department has used the special topics laboratory course (CHEM 476) to satisfy the inorganic lab recommendation of the American Chemical Society. This has caused confusion for students since all of the lecture/laboratory sequences in the Chemistry Department are sequentially numbered (e.g. 120/121 and 222/223) except for inorganic lecture/laboratory sequence (CHEM 420 and 476). The proposed laboratory permits the inorganic sequence to be brought in line with the remainder of the departmental sequences. CHEM 476 is the special topics laboratory course in the department corresponding to the special topics lecture course of CHEM 475.

* 1. Projected enrollment in the proposed course: 5-10 based on enrollment in CHEM 420.
  2. Relationship of the proposed course to courses now offered by the department:

CHEM 421 will provide a laboratory experience to accompany CHEM 420. The course has traditionally been taught under the CHEM 476 course title. CHEM 476 will retain the special topics designation within the Department.

* 1. Relationship of the proposed course to courses offered in other departments:

No other courses offered at WKU have significant overlap with the proposed lab.

* 1. Relationship of the proposed course to courses offered in other institutions: All ACS-certified Chemistry Departments offer either an independent inorganic laboratory or an integrated (inorganic/organic/analytical/physical) laboratory to satisfy the ACS requirements.

**3. Discussion of proposed course:**

* 1. Course objectives:

Chemistry is a laboratory science. Laboratory courses are essential for students to begin to integrate and reinforce concepts presented in lecture. Students will synthesize and characterize a variety of compounds as examples of the fundamental types of bonding in inorganic chemistry: molecular, ionic, polymeric, coordination and metallic. This will allow students to make connections between the theories of bonding and electronic structure presented in lecture and the chemical and physical properties exhibited by compounds.

* 1. Content outline:

•Synthesis and characterization of main group compounds including molecular and polymeric materials.

•Synthesis and characterization of transition metal compounds including alloys and coordination complexes

•Syntheses will make use of aqueous, nonaqueous, solid-state and inert atmosphere techniques.

•Characterization will employ IR, UV-vis and NMR instrumentation.

* 1. Student expectations and requirements:

Students will be given a variety of inorganic compounds to synthesize. Students will characterize their products by physical and instrumental methods and write up their results in formal lab reports. Course grades will be determined by the successful synthesis of the assigned compounds and the formal lab reports.

* 1. Tentative texts and course materials:

Microscale Inorganic Chemistry, Z. Szafram, R.M. Pike and M.M. Singh, John Wiley & Sons, 1st edition, 1991 (ISBN 0-471-61996-5)

Experimental Methods in Inorganic Chemistry, J. Tanaka and S.L. Suib, Prentice Hall, 1st edition, 1999 (ISBN 0-13-841909-4)

Inorganic Experiments, J.D. Woollins(editor), Wiley-VCH, 3rd edition, 2009 (ISBN 978-3-527-32472-9)

**4. Resources:**

* 1. Library resources: See attached library resource form and bibliography
  2. Computer resources: No new additional resources are required.

**5. Budget implications:**

* 1. Proposed method of staffing: Existing faculty will teach the course.
  2. Special equipment needed: Already in place from CHEM 476.
  3. Expendable materials needed: Already in place from CHEM 476.
  4. Laboratory materials needed: Already in place from CHEM 476.

**6. Proposed term for implementation: Spring 2014**

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

Chemistry Department/Division: \_\_2/13/13\_\_\_\_\_\_\_\_\_\_

Ogden Curriculum Committee \_\_3/7/2013\_\_\_\_\_\_\_\_\_

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

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

**Attachment: Bibliography, Library Resources Form**, **Course Inventory Form**

Proposal Date: February 4, 2013

**Ogden College of Science and Engineering**

**Department of Geography and Geology**

**Proposal to Create a New Course**

**(Action Item)**

Contact Person: Greg Goodrich, [gregory.goodrich@wku.edu](mailto:gregory.goodrich@wku.edu), 5-5986

**1. Identification of proposed course:**

* 1. Course prefix (subject area) and number: GEOG 103
  2. Course title: Our Dynamic Planet
  3. Abbreviated course title: Our Dynamic Planet
  4. Credit hours: 3
  5. Type of course: L – Lecture
  6. Prerequisites: None
  7. Course catalog listing: Introduction to the spatial dimension of Earth’s dynamic systems and how they affect people. These include the atmosphere, hydrosphere, and lithosphere. Equivalent to GEOL 103.

**2. Rationale:**

* 1. Reason for developing the proposed course: GEOG 103 – *Our Dynamic Planet* represents a merging of two separate courses, GEOG 100 – *Introduction to the Physical Environment* and GEOL 102 – *Introduction to Geology*. The new course, which will be equivalent to GEOL 103 – *Our Dynamic Planet*, provides a more efficient and streamlined presentation of the introductory concepts relating to the various aspects of Earth Science. While GEOG 100 and GEOL 102 had some overlap, there were enough differences in the two curricula to make GEOG/GEOL 103 a better introductory course. *Our Dynamic Planet* will be a required course for many of the majors within the Department of Geography and Geology and will also be submitted as an Essentials part of the new Colonnade Program.
  2. Projected enrollment in the proposed course: 750 per year, based on the recent history of the combined enrollments of GEOG 100 and GEOL 102.
  3. Relationship of the proposed course to courses now offered by the department: GEOG 103 – *Our Dynamic Planet* will replace GEOG 100 - *Introduction to the Physical Environment* and GEOL 102 – *Introduction to Geology*, both of which will be deleted.
  4. Relationship of the proposed course to courses offered in other departments: No other department at WKU offers an introductory Earth Science course.
  5. Relationship of the proposed course to courses offered in other institutions: All institutions that offer degree programs in any of the Earth Sciences offer an introductory course similar to GEOG 103 – *Our Dynamic Planet.*
  6. Relationship to the university mission: To provide students with a foundational knowledge in earth science to permit them to develop a deeper understanding of environmental issues at a global scale.

**3. Discussion of proposed course:**

* 1. Course objectives: Students in GEOG 103 – Our Dynamic Planet will understand the spatial dimension of Earth’s dynamic systems with a special emphasis on how their many interrelationships affect humans and their environment. These systems include air, water, weather, climate, tectonics, landforms, and ecosystems.
  2. Content outline:

Section one: Earth

* Introduction to Earth Science
* Rocks and minerals
* Plate tectonics, volcanoes, and earthquakes
* Mountain building and Earth’s history

Section two: Atmosphere

* Solar energy and the seasons
* Atmosphere and energy balance
* Atmospheric and oceanic circulations
* Atmospheric moisture and weather

Section three: Earth-Atmosphere Interactions

* Weathering and mass movement
* Karst processes and landforms
* River systems and landforms
* Eolian processes and desert landforms
* Coastal processes and landforms
* Glacial processes and landforms

The order and exact nature of the content covered may vary by textbook and instructor preference. Other topics that may be covered include astronomy, climate, soils, and ecosystems.

* 1. Student expectations and requirements: Grades will consist of mid-term exams and a final exam based on textbook readings and class discussions, homework assignments and in-class projects, and quizzes.
  2. Tentative texts and course materials:

Tarbuck, E. J., Lutgens, F. K., and Tasa, D., 2012: *Earth Science*, 13th ed.,

Prentice Hall, 768 pp.

Christopherson, R. W., 2011: *Geosystems*, 8th ed., Prentice Hall, 688 pp.

Peterson, J. F., Sack, D., and Gabler, R. E., 2011: *Physical Geography*, 10th ed.,

Brooks Cole, 672 pp.

**4. Resources:**

* 1. Library resources: See attached library resource form and bibliography.
  2. Computer resources: No new computer resources will be needed.

**5. Budget implications:**

* 1. Proposed method of staffing: Course will be staffed by existing instructors of GEOG 100 and GEOL 102.
  2. Special equipment needed: None
  3. Expendable materials needed: None
  4. Laboratory materials needed: None

**6. Proposed term for implementation:** Fall 2014

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

Department of Geography and Geology: \_\_\_\_\_2/22/2013\_\_\_\_\_\_

Ogden Curriculum Committee \_\_\_\_\_3/7/2013\_\_\_\_\_\_\_

General Education Committee (if applicable) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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

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

**Attachment: Bibliography, Library Resources Form**, **Course Inventory Form**

Proposal Date: February 18, 2013

**Ogden College of Science and Engineering**

**Department of Physics and Astronomy**

**Proposal to Create a New Course**

**(Action Item)**

Contact Person: Scott Bonham, 270-745-6196, scott.bonham@wku.edu

**1. Identification of proposed course:**

* 1. Course prefix (subject area) and number: PHYS 215
  2. Course title: Seminar for Physics Learning Assistants
  3. Abbreviated course title: Seminar Physics Learning Assts
  4. Credit hours: 1 h
  5. Schedule type: S-seminar
  6. Prerequisites/corequisites: A college level physics course and acceptance to serve as a learning assistant or permission of instructor.
  7. Course description: Introduces students to basic theory and practical skills for assisting instructors as learning assistants in active-engagement physics courses.

**2. Rationale:**

* 1. Reason for developing the proposed course: This course will provide a basic pedagogical foundation for undergraduate students working as learning assistants in active-learning physics courses and help improve their instructional skills in a student-centered learning environment. The revision of the Physics 256 laboratories, in particular, has created the need for systematically preparing multiple students to effectively assist in this type of instruction.
  2. Projected enrollment in the proposed course: 5-10 based on need for assistants in corresponding courses.
  3. Relationship of the proposed course to courses now offered by the department: This course will provide an important support role for the Physics 256 and other active-learning courses in training assistant instructors.
  4. Relationship of the proposed course to courses offered in other departments: SMED 101 is also an introduction to teaching science (and math), but it is specifically designed for students with interest in becoming middle or secondary math or science teachers and prepares students to develop and teach lessons in an elementary school. In contrast, Physics 215 is targeted towards students who will be working as learning assistants in introductory physics courses at the university level, developing their ability to effectively work with students to develop their physics skills. It will also include much greater focus on physics-specific issues.
  5. Relationship of the proposed course to courses offered in other institutions: This course is modeled after a course developed at the University of Colorado for providing learning assistants with background and skills to assist faculty in active learning courses.

**3. Discussion of proposed course:**

* 1. Course objectives:
* Develop questioning techniques to be able to probe and deepen student understanding in the classroom more effectively.
* Be able to apply basic concepts from current physics education theory to understanding sources of student challenges and applying effective pedagogical strategies.
* Read and discuss primary literature in science education research.
* Reflect on and grow in teaching abilities.
  1. Content outline:
     + Five principles of effective physics instruction
     + Discussion techniques-univocal/dialogic discourse
     + Cognitive studies and teaching physics
     + Classroom discourse and Bloom’s Taxonomy
     + Student conceptions in physics and formative assessment
     + Resource perspectives in physics
     + Cooperative learning
     + Problem solving strategies
     + Epistemology and metacognition
     + Nature of science
     + Qualities of an effective teacher
  2. Student expectations and requirements: Students in the course will be working as learning assistants in an introductory physics classroom. They will be assigned readings each week and attend a weekly seminar that will discuss them and/or engage in an activity related to the topic. They will seek to apply what they have learned to their work in the classroom and complete a short written reflection each week about their growth as instructors. Students will be evaluated based on their participation at the seminar, their weekly reflection log, and observation(s) of their work as classroom (assistant) instructors.
  3. Tentative texts and course materials:

R. Knight, *Five Easy Lessons: Strategies for Successful Physics Teaching*, (Addison Wesley, San Francisco, 2004)

Readings from the American Journal of Physics and other science education journals/magazines.

**4. Resources:**

* 1. Library resources: Adequate; see Library Resources Form.
  2. Computer resources: This course will utilize Blackboard; current configuration is sufficient.

**5. Budget implications:**

* 1. Proposed method of staffing: Current faculty
  2. Special equipment needed: None
  3. Expendable materials needed: None
  4. Laboratory materials needed: None

**6. Proposed term for implementation:** Fall 2013

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

Department of Physics and Astronomy: \_\_2/20/2013\_\_\_\_\_\_\_\_\_

Ogden Curriculum Committee \_\_3/7/2013\_\_\_\_\_\_\_\_\_\_

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

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

**Attachment: Bibliography, Library Resources Form**, **Course Inventory Form**

Proposal Date: February 8, 2013

**Ogden College of Science and Engineering**

**Department of Geography and Geology**

**Proposal to Revise a Program**

**(Action Item)**

Contact Person: David Keeling ([david.keeling@wku.edu](mailto:david.keeling@wku.edu)) 745-4555

**1. Identification of program:**

* 1. Current program reference number: 353
  2. Current program title: Minor in Earth Science
  3. Credit hours: 23

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

* Revise the program structure to correct imbalance between lower- and upper-division hours.
* Add additional electives and remove ASTR 214 from required options.

**3. Detailed program description:**

|  |  |
| --- | --- |
| *Requirements****:*** The minor in earth science (reference number 353) is for prospective earth science teachers and requires a minimum of 21 semester hours.  Required courses are:  GEOL 111, 112, 113, 114, GEOG 121, and ASTR 214.  Courses to total seven additional hours must be selected from:  GEOL 308, 330, 370, 405, 420, and GEOG 328 and 420.  A minor in earth science must be taken in conjunction with a major or minor in another science or in mathematics. | ***Requirements:* The Minor in Earth Science (reference number 353) is designed for geology or physical geography majors, earth science teachers, and for anyone interested in understanding basic earth systems. The Minor requires a minimum of 23 semester hours, with at least 50% of the hours earned at the 300-400 level.**  **Required Courses (11 hours):**  **GEOL 111 The Earth 3**  **GEOL 113 The Earth Laboratory 1**  **GEOL 112 Earth History 3**  **GEOL 114 Earth History Laboratory 1**  **GEOG 121 Introduction to Meteorology 3**  **Elective Courses (12 hours):**  **Select from the following options:**  **ASTR 104 Astronomy of Solar System 3**  **GEOL 308 Structural Geology 4**  **GEOL 311 General Oceanography 3**  **GEOL 325 Intro to Minerals & Rocks 3**  **GEOL 405 Paleontology 4**  **GEOL/G 420 Geomorphology 4**  **GEOL 460 Sediment and Stratigraphy 3**  **GEOG 328 Biogeography 3** |

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

* The existing program only requires 7 hours of upper-division coursework, which violates the 50% rule for the distribution of hours. The proposed program corrects this problem.
* ASTR 214 requires MATH 136 as a prerequisite, so it is deleted, as many students studying earth science do not go beyond MATH 116 and 117.
* ASTR 104, GEOL 311, 325, and 460 are added as approved electives.
* GEOL 330 and 370 are removed from the list of approved electives as 330 is not suitable and 370 no longer exists.

**5. Proposed term for implementation and special provisions (if applicable):** Fall 2013

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

Department of Geography and Geology: \_\_\_\_2/22/2013\_\_\_\_\_\_\_

Ogden College Curriculum Committee \_\_\_\_3/7/2013\_\_\_\_\_\_\_\_

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

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