**Ogden College of Science and Engineering**

**Office of the Dean**

**745-4449**

**REPORT TO THE UNIVERSITY CURRICULUM COMMITTEE**

Date: March 11, 2015

The Ogden College of Science and Engineering submits the following action items for consideration at the March 2015 UCC meeting:

1. New Business

|  |  |
| --- | --- |
| **Type of item** | **Description of Item & Contact Information** |
| Action | **Proposal to Create a New Course**BDA 310, Brewhouse and Distillery Processes, 2 hrs. Contact: Cathleen Webb, Cathleen.webb@wku.edu, x4448 or Andrew McMichael, Andrew.mcmichael@wku.edu, x 6538 |
| Action | **Proposal to Create a New Course**BDA 310-M1, Brewhouse and Distillery Processes Module 1, 1 hr. Contact: Cathleen Webb, Cathleen.webb@wku.edu, x4448 or Andrew McMichael, Andrew.mcmichael@wku.edu, x 6538 |
| Action | **Proposal to Create a New Course**BDA 310-M2, Brewhouse and Distillery Processes Module 2, 1 hrs. Contact: Cathleen Webb, Cathleen.webb@wku.edu, x4448 or Andrew McMichael, Andrew.mcmichael@wku.edu, x 6538 |
| Action | **Proposal to Make Multiple Revisions to a Course**EE 479, Fundamentals of Optoelectronics, 2 hrs. Contact: Walter Collett, walter.collett@wku.edu, x2016 |
| Action | **Proposal to Make Multiple Revisions to a Course**GEOG 310, Global Hydrology, 3 hrs. Contact: Leslie North, leslie.north@wku.edu, x5982 |
| Action | **Proposal to Make Multiple Revisions to a Course**GEOG 452, Geoscience Field Experiences, 3-6 hrs. Contact: Leslie North, leslie.north@wku.edu, x5982 |
| Action | **Proposal to Make Multiple Revisions to a Course**GEOG 455, Global Environmental Change, 3 hrs. Contact: Leslie North, leslie.north@wku.edu, x5982 |
| Action | **Proposal to Make Multiple Revisions to a Course**GEOG 459, Physical Hydrology, 3 hrs. Contact: Leslie North, leslie.north@wku.edu, x5982 |
| Action | **Proposal to Make Multiple Revisions to a Course**GEOG 486, Senior Environmental Seminar, 1 hr. Contact: Leslie North, leslie.north@wku.edu, x5982 |
| Action | **Proposal to Make Multiple Revisions to a Course**GEOL 310, Global Hydrology, 3 hrs. Contact: Leslie North, leslie.north@wku.edu, x5982 |

 Proposal Date: 24 January, 2015

**Potter College of Arts & Letters**

**Ogden College of Science and Engineering**

**Proposal to Create a New Course**

**(Action Item)**

Contact Person: Andrew McMichael andrew.mcmichael@wku.edu 745-6538

 Cathleen Webb Cathleen.webb@wku.edu 745-4448

**1.** **Identification of proposed course:**

* 1. Course prefix (subject area) and number: BDA 310
	2. Course title: Brewhouse and Distillery Processes
	3. Abbreviated course title: Brewhouse/Distillery Processes
	4. Credit hours: 2
	5. Grade type: Standard
	6. Prerequisites/corequisites: None
	7. Course description: The methodology and processes involved in the preparation of wort and mash for brewing and distilling, including the essentials of the science and technology that precedes fermentation.

**2. Rationale:**

* 1. Reason for developing the proposed course:

Brewhouse and distillery processes are a crucial part of understanding how to run a brewery and distillery, as well as the processes involved in creating various types of mashes and wort, the equipment used in these processes, and the essence of the science and technology that precedes fermentation. The foundational knowledge in this course applies to the work done in either a brewery or distillery, regardless of the system and equipment used, or scale of operation. Students completing this course will understand the basics of brewhouse operations and be prepared to understand higher-level brewing and distilling processes.

This is the first course proposed as part of a unique certificate, major, and minor that Western Kentucky University is developing in conjunction with corporate partner as part of a Malting, Brewing, and Distilling Academy. Over the past two decades, the professional training of brewers and distillers has not kept pace with the changing nature of the craft industries. This program, co-directed by faculty in Ogden and Potter College, reflects those changes. From the corporate partnership, which will provide equipment, staff, and other resources, to the close cooperation between colleges, this public/private initiative provides WKU with a unique opportunity to be on the leading edge of a growing national interest in this industry. Malting, Brewing, and Distilling in one of the fastest growing industries in Kentucky.  We anticipate students will contribute significantly to the work-force needs of this rapidly growing industry. Many courses will be offered as hybrid courses with on-line components, in an IVS format, as well as face-to-face in conjunction with the corporate partner. Reflecting the unique nature of the partnership, most courses will be able to be taught in one, two, or three single-credit modules to accommodate the anticipated wide range of student backgrounds.

* 1. Projected enrollment in the proposed course: 10 – 20 per offering based on industry surveys and feedback from corporate partners.
	2. Relationship of the proposed course to courses now offered by the department: None.
	3. Relationship of the proposed course to courses offered in other departments: BIO/CHEM 446, BIO/CHEM 447, BIO/CHEM 467 each address enzymatic structures and activity relations. None of these courses address this topic, however, in relation to industrial applications or brewing and distilling.
	4. Relationship of the proposed course to courses offered in other institutions: A number of institutions around the country offer programs in brewing and/or distilling. None combine to teach both, and none teach courses in conjunction with a corporate partner. Likewise, the programs tend to be science-focused, without the integration of science, arts, and humanities. None teach in modules. So, no courses like this one exist at other institutions. Focusing on the for-credit institutions, the most prominent program in the country in the area of brewing science is at UC-Davis. FST 102A (Malting and Brewing Science, 4 credits) and 102B (Practical Malting and Brewing, 4 credits) covers many of the same topics in this course, but in two classes spanning eight credit hours. Their course is intended as a lab-science course, reflecting their program’s home in the Department of Food Science and Technology in their College of Agricultural and Environmental Sciences. Auburn University offers a course in brewing Materials (HRMT 7116), which focuses exclusively on ingredients, but not in preparation and use. Their HRMT 7126 and HRMT 7136 (Brewing Science 1 & 2) focus on preparation and fermentation, and HRMT 7146 (Facilities and Operations Management) focuses on operations. These are all graduate-level courses, and are not meant to be introductory. In the half-dozen other brewing/distilling-related programs around the country, none offer courses focused on brewhouse/distillery processes.

**3. Discussion of proposed course:**

* 1. Schedule type: Lecture/Lab
	2. Learning Outcomes:
	By the end of this course students should be able to:
* Understand enzymes and their function in brewing as well as their importance in mashing
* Analyze types of mashing (infusion and decoction) to produce various styles of fermentable products
* Employ practical lab procedures for testing during the mashing process
* Describe wort separation
* Be familiar with and know how to use types of equipment used in mashing and distilling
* Understand wort boiling and its purposes
* Understand energy implications in boiling process systems
	1. Content outline:
* Solubilization of the primary components of the grains (usually based on malted barley) and conversion of starch during mashing to an assortment of sugars
* Separation of the extract (wort or wash) from the insoluble components (spent grains)
* Boiling of the extracted material with hops, concentration, and sterilizations of this solution (Brewing only)
* Removal of undesired volatile substances and separation of the residual materials
* Aeration/oxygenation of the brewing wort or distiller’s wash, and cooling to an appropriate temperature before pitching yeast
	1. Student expectations and requirements: Students will be expected complete an online component of this course, including reading materials and online assessment prior to entering the lab for hands-on activities and practical application the knowledge required to engage in mashing and wort production related to brewing and distilling. Assessments could include, but are not limited to surveys, online exams, lab work, oral examinations, and homework.
	2. Tentative texts and course materials:
* Bamforth, Charles. *Beer: Tap Into the Art and Science of Brewing*. (New York: Oxford University Press, 2009)
* Fix, George. *Principles of Brewing Science: A Study of Serious Brewing Issues*. (Boulder, Co.: Brewers Publications, 1999)
* Palmer, John and Kaminski, Colin. *Water: A Comprehensive Guide for Brewers*. (Boulder, Co.: Brewers Publications, 2013)
* Rogers, Adam. *Proof: The Science of Booze* (Boston: Houghton Mifflin, 2014)
* Russell, Inge, and Stewart, Graham, eds. *Whisky: Technology, Production, and Marketing*. (Boston: Elsevier, 2014).

**4. Resources:**

* 1. Library resources: Current resources are sufficient.
	2. Computer resources: Existing resources are sufficient.

**5. Budget implications:**

* 1. Proposed method of staffing: The course will be taught by existing faculty at WKU, as well as by credentialed part-time faculty employed by our corporate partner.
	2. Special equipment needed: Existing resources at WKU and at partner classroom are sufficient.
	3. Expendable materials needed: Grains and adjuncts supplied through departmental resources and from corporate partners.
	4. Laboratory materials needed: Existing resources at WKU and the facility of the corporate partner are sufficient.

**6. Proposed term for implementation:** Summer, 2015

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

|  |
| --- |
| Potter College Curriculum Committee  |
| Ogden College Curriculum Committee  | **2/5/2015** |
| Undergraduate Curriculum Committee  |  |
| University Senate |  |

Proposal Date: 24 January, 2015

**Potter College of Arts & Letters**

**Ogden College of Science and Engineering**

**Proposal to Create a New Course**

**(Action Item)**

Contact Person: Andrew McMichael andrew.mcmichael@wku.edu 745-6538

 Cathleen Webb Cathleen.webb@wku.edu 745-4448

**1.** **Identification of proposed course:**

* 1. Course prefix (subject area) and number: BDA 310-M1
	2. Course title: Brewhouse and Distillery Processes Module 1
	3. Abbreviated course title: Brewhse/Distillery Proc. Mod 1
	4. Credit hours: 1
	5. Grade type: Standard
	6. Prerequisites/corequisites: None
	7. Course description: The methodology and processes involved in the preparation of wort and mash for brewing and distilling, including the essentials of the science and technology that precedes fermentation.

**2. Rationale:**

* 1. Reason for developing the proposed course:

Brewhouse and distillery processes are a crucial part of understanding how to run a brewery and distillery, as well as the processes involved in creating various types of mashes and wort, the equipment used in these processes, and the essence of the science and technology that precedes fermentation. The foundational knowledge in this course applies to the work done in either a brewery or distillery, regardless of the system and equipment used, or scale of operation. Students completing this course will understand the basics of brewhouse operations and be prepared to understand higher-level brewing and distilling processes. This course will be split into two one-credit modules, one a lab, the other a hybrid of online and classroom instruction. This split will give the instructor the flexibility to offer the course as a one-credit lab, a one-credit hybrid, or a two-credit course combining classroom, online, and lab instruction.

The first module in the course will involve a hybrid of online and classroom instruction. It is meant to be offered in conjunction with the second module, but can also serve as a stand-alone course.

This is the first course proposed as part of a unique certificate, major, and minor that Western Kentucky University is developing in conjunction with a corporate partner as part of a Malting, Brewing, and Distilling Academy. Over the past two decades, the professional training of brewers and distillers has not kept pace with the changing nature of the craft industries. This program, co-directed by faculty in Ogden and Potter College, reflects those changes. From the corporate partnership, which will provide equipment, staff, and other resources, to the close cooperation between colleges, this public/private initiative provides WKU with a unique opportunity to be on the leading edge of a growing national interest in this industry. Malting, Brewing, and Distilling in one of the fastest growing industries in Kentucky.  We anticipate students will contribute significantly to the work-force needs of this rapidly growing industry. Many courses will be offered as hybrid courses with on-line components, in an IVS format, as well as face-to-face in conjunction with the corporate partner. Reflecting the unique nature of the partnership, most courses will be able to be taught in one, two, or three single-credit modules to accommodate the anticipated wide range of student backgrounds.Projected enrollment in the proposed course: 10 – 20 per offering based on industry surveys and feedback from corporate partners.

* 1. Projected enrollment in the proposed course: 10 – 20 per offering based on industry surveys and feedback from corporate partners.
	2. Relationship of the proposed course to courses now offered by the department: None.
	3. Relationship of the proposed course to courses offered in other departments: BIO/CHEM 446, BIO/CHEM 447, BIO/CHEM 467 each address enzymatic structures and activity relations. None of these courses address this topic, however, in relation to industrial applications or brewing and distilling. The AMS Department currently offers a number of courses broken into modules, that they offer through a corporate partnership. This course follows that model, but focuses on a different topic and subject area.
	4. Relationship of the proposed course to courses offered in other institutions: A number of institutions around the country offer programs in brewing and/or distilling. None combine to teach both, and none teach courses in conjunction with a corporate partner. Likewise, the programs tend to be science-focused, without the integration of science, arts, and humanities. None teach in modules. So, no courses like this one exist at other institutions. Focusing on the for-credit institutions, the most prominent program in the country in the area of brewing science is at UC-Davis. FST 102A (Malting and Brewing Science, 4 credits) and 102B (Practical Malting and Brewing, 4 credits) covers many of the same topics in this course, but in two classes spanning eight credit hours. Their course is intended as a lab-science course, reflecting their program’s home in the Department of Food Science and Technology in the College of Agricultural and Environmental Sciences. Auburn University offers a course in brewing Materials (HRMT 7116), which focuses exclusively on ingredients, but not in preparation and use. Their HRMT 7126 and HRMT 7136 (Brewing Science 1 & 2) focus on preparation and fermentation, and HRMT 7146 (Facilities and Operations Management) focuses on operations. These are all graduate-level courses, and are not meant to be introductory. In the half-dozen other brewing/distilling-related programs around the country, none offer courses focused on brewhouse/distillery processes.

**3. Discussion of proposed course:**

* 1. Schedule type: Lecture/Lab
	2. Learning Outcomes:
	By the end of this course students should be able to:
* Understand enzymes and their function in brewing as well as their importance in mashing
* Analyze types of mashing (infusion and decoction) to produce various styles of fermentable products
* Employ practical lab procedures for testing during the mashing process
* Describe wort separation
* Be familiar with and know how to use types of equipment used in mashing and distilling
* Understand wort boiling and its purposes
* Understand energy implications in boiling process systems
	1. Content outline:
* Solubilization of the primary components of the grains (usually based on malted barley) and conversion of starch during mashing to an assortment of sugars
* Separation of the extract (wort or wash) from the insoluble components (spent grains)
* Boiling of the extracted material with hops, concentration, and sterilizations of this solution (Brewing only)
* Removal of undesired volatile substances and separation of the residual materials
* Aeration/oxygenation of the brewing wort or distiller’s wash, and cooling to an appropriate temperature before pitching yeast
	1. Student expectations and requirements: Students will be expected complete an online component of this course, including reading materials and online assessment prior to entering the lab for hands-on activities and practical application the knowledge required to engage in mashing and wort production related to brewing and distilling. Assessments could include, but are not limited to surveys, online exams, lab work, oral examinations, and homework.
	2. Tentative texts and course materials:
* Rogers, Adam. *Proof: The Science of Booze* (Boston: Houghton Mifflin, 2014)
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**4. Resources:**

* 1. Library resources: Current resources are sufficient.
	2. Computer resources: Existing resources are sufficient.

**5. Budget implications:**

* 1. Proposed method of staffing: The course will be taught by existing faculty at WKU, as well as credentialed part-time faculty employed by our corporate partner.
	2. Special equipment needed: Existing resources are sufficient.
	3. Expendable materials needed: Grains and adjuncts supplied through departmental resources and from corporate partners.
	4. Laboratory materials needed: Existing resources at WKU and facility of corporate partner are sufficient.

**6. Proposed term for implementation:** Summer, 2015

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

|  |
| --- |
| Potter College Curriculum Committee  |
| Ogden College Curriculum Committee  | **2/5/2015** |
| Undergraduate Curriculum Committee  |  |
| University Senate |  |

Proposal Date: 24 January, 2015

**Potter College of Arts & Letters**

**Ogden College of Science and Engineering**

**Proposal to Create a New Course**

**(Action Item)**

Contact Person: Andrew McMichael andrew.mcmichael@wku.edu 745-6538

 Cathleen Webb Cathleen.webb@wku.edu 745-4448

**1.** **Identification of proposed course:**

* 1. Course prefix (subject area) and number: BDA 310-M2
	2. Course title: Brewhouse and Distillery Processes
	3. Abbreviated course title: Brewhse/Distillery Proc. Mod 2
	4. Credit hours: 1
	5. Grade type: Standard
	6. Prerequisites/corequisites: None
	7. Course description: The methodology and processes involved in the preparation of wort and mash for brewing and distilling, including the essentials of the science and technology that precedes fermentation.

**2. Rationale:**

* 1. Reason for developing the proposed course:

Brewhouse and distillery processes are a crucial part of understanding how to run a brewery and distillery, as well as the processes involved in creating various types of mashes and wort, the equipment used in these processes, and the essence of the science and technology that precedes fermentation. The foundational knowledge in this course applies to the work done in either a brewery or distillery, regardless of the system and equipment used, or scale of operation. Students completing this course will understand the basics of brewhouse operations and be prepared to understand higher-level brewing and distilling processes. This course will be split into two one-credit modules, one a lab, the other a hybrid of online and classroom instruction. This split will give the instructor the flexibility to offer the course as a one-credit lab, a one-credit hybrid, or a two-credit course combining classroom, online, and lab instruction.

The second module in the course will involved classroom and lab instruction. It is meant to be offered in conjunction with the first module, but can also serve as a stand-alone course.

This is the first course proposed as part of a unique certificate, major, and minor that Western Kentucky University is developing in conjunction with corporate partner as part of a Malting, Brewing, and Distilling Academy. Over the past two decades, the professional training of brewers and distillers has not kept pace with the changing nature of the craft industries. This program, co-directed by faculty in Ogden and Potter College, reflects those changes. From the corporate partnership, which will provide equipment, staff, and other resources, to the close cooperation between colleges, this public/private initiative provides WKU with a unique opportunity to be on the leading edge of a growing national interest in this industry. Malting, Brewing, and Distilling in one of the fastest growing industries in Kentucky.  We anticipate students will contribute significantly to the work-force needs of this rapidly growing industry. Many courses will be offered as hybrid courses with on-line components, in an IVS format, as well as face-to-face in conjunction with the corporate partner. Reflecting the unique nature of the partnership, most courses will be able to be taught in one, two, or three single-credit modules to accommodate the anticipated wide range of student backgrounds.Projected enrollment in the proposed course: 10 – 20 per offering based on industry surveys and feedback from corporate partners.

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**3. Discussion of proposed course:**

* 1. Schedule type: Lecture/Lab
	2. Learning Outcomes:
	By the end of this course students should be able to:
* Understand enzymes and their function in brewing as well as their importance in mashing
* Analyze types of mashing (infusion and decoction) to produce various styles of fermentable products
* Employ practical lab procedures for testing during the mashing process
* Describe wort separation
* Be familiar with and know how to use types of equipment used in mashing and distilling
* Understand wort boiling and its purposes
* Understand energy implications in boiling process systems
	1. Content outline:
* Solubilization of the primary components of the grains (usually based on malted barley) and conversion of starch during mashing to an assortment of sugars
* Separation of the extract (wort or wash) from the insoluble components (spent grains)
* Boiling of the extracted material with hops, concentration, and sterilizations of this solution (Brewing only)
* Removal of undesired volatile substances and separation of the residual materials
* Aeration/oxygenation of the brewing wort or distiller’s wash, and cooling to an appropriate temperature before pitching yeast
	1. Student expectations and requirements: Students will be expected complete an online component of this course, including reading materials and online assessment prior to entering the lab for hands-on activities and practical application the knowledge required to engage in mashing and wort production related to brewing and distilling. Assessments could include, but are not limited to surveys, online exams, lab work, oral examinations, and homework.
	2. Tentative texts and course materials:
* Rogers, Adam. *Proof: The Science of Booze* (Boston: Houghton Mifflin, 2014)
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* Bamforth, Charles. *Beer: Tap Into the Art and Science of Brewing*. (New York: Oxford University Press, 2009)
* Russell, Inge, and Stewart, Graham, eds. *Whisky: Technology, Production, and Marketing*. (Boston: Elsevier, 2014).

**4. Resources:**

* 1. Library resources: Current resources are sufficient.
	2. Computer resources: Existing resources are sufficient.

**5. Budget implications:**

* 1. Proposed method of staffing: The course will be taught by existing faculty at WKU, as well as credentialed part-time faculty employed by our corporate partner.
	2. Special equipment needed: Existing resources are sufficient.
	3. Expendable materials needed: Grains and adjuncts supplied through departmental resources and from corporate partners.
	4. Laboratory materials needed: Existing resources at WKU and the facility of the corporate partner are sufficient.

**6. Proposed term for implementation:** Summer, 2015

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

|  |
| --- |
| Potter College Curriculum Committee  |
| Ogden College Curriculum Committee  | **2/5/15** |
| Undergraduate Curriculum Committee  |  |
| University Senate |  |

Proposal Date: February 24, 2015

**Ogden College of Science and Engineering**

**Department of Engineering**

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

**(Action Item)**

Contact Person: Walter Collett, walter.collett@wku.edu, 745-2016

**1. Identification of course:**

* 1. Current course prefix (subject area) and number: EE 479
	2. Course title: Fundamentals of Optoelectronics

**2. Revise course title:**

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

As no second course is offered in the subject area, and the course is undergraduate level, indicating ‘fundamentals of’ is not needed.

**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:** 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:**

* 1. Current course catalog listing:

An introduction to the principles of electronic devices that interact with light. Topics include the generation and propagation of light, basic geometrical and wave optics, Snell’s Law, polarization, optical storage, LED’s, micro-opto-electromechanical systems, optical sensors, fiber optics, solar cells, and fundamentals of lasers.

* 1. Proposed course catalog listing:

Topics include basic wave optics, Snell’s Law, optical storage, LED’s, micro-opto-electromechanical systems, optical sensors, fiber optics, solar cells, and fundamentals of lasers.

* 1. Rationale for revision of course catalog listing:

The proposed catalog listing is a more concise and accurate description of the material covered in the course.

**6. Revise course credit hours:**

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

This course was a required two-hour experience in optoelectronics. The two-hour allocation was originally chosen over three hours due to the high number of required hours in the Electrical Engineering (EE) curriculum. Optoelectronics is now an elective course, enabling us to increase the number of hours to three. This increase in hours will permit greater depth of material coverage.

**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 2015

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

|  |  |
| --- | --- |
|  Engineering Department  |  **26 February 2015** |
|  OSCE College Curriculum Committee  | **3/5/15** |
|  Undergraduate Curriculum Committee  |  |
|  University Senate |  |

Proposal Date: 2/23/15

**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, leslie.north@wku.edu, 5-5982

**1. Identification of course:**

* 1. Current course prefix (subject area) and number: GEOG 310
	2. Course title: Global Hydrology

**2. Revise course prerequisites:**

2.1 Current prerequisites: GEOL 111

2.2 Proposed prerequisites: GEOL 111 or GEOG/GEOL 103

2.3 Rationale for revision of course prerequisites:

 Additional prerequisite option added to reflect introductory level course recently added to

 the curriculum

2.4 Effect on completion of major/minor sequence: None

**3. Revise course catalog listing:**

3.1 Current course catalog listing: Emphasis is given to descriptive and quantitative

 hydrology. The hydrologic cycle, precipitation, evaporation, and transpiration will be

 covered under descriptive hydrology. Hydrographs, runoff relations, groundwater, and

 storage routing will be covered under quantitative hydrology. Consideration will be given

 to use and management of water as a resource. Equivalent to GEOL 310.

* 1. Proposed course catalog listing: An introduction to descriptive and quantitative

 hydrology. The hydrologic cycle precipitation, evaporation, and transpiration are covered

 under descriptive hydrology. Hydrographs, runoff relations, groundwater, and storage

 routing are covered under quantitative hydrology. Equivalent to GEOL 310.

* 1. Rationale for revision of course catalog listing: Description changed to remove reference

 to management of water resources since this is covered in another course. Emphasizes

 that this is an introductory water course, for easier sequencing identification by

 students.

**4. Proposed term for implementation:** Spring 2016

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

|  |  |
| --- | --- |
| Department of Geography and Geology | **2/27/2015** |
| Ogden College Curriculum Committee  | **3/5/15** |
| Undergraduate Curriculum Committee  |  |
| University Senate |  |

Proposal Date: 2/23/15

**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, leslie.north@wku.edu, 5-5982

**1. Identification of course:**

* 1. Current course prefix (subject area) and number: GEOG 452
	2. Course title: Geoscience Field Experiences

**2. Revise course prerequisites:**

2.1 Current prerequisites: Junior standing or instructor’s permission

2.2 Proposed prerequisites: None

2.3 Rationale for revision of course prerequisites: The structure of this course is such that a

 student’s standing is not needed to be specified. The course can include study abroad,

 field camps, and special hands-on courses, all of which can be taken by students at any

 grade level.

2.4 Effect on completion of major/minor sequence: None

**3. Revise course credit hours:**

* 1. Current course credit hours: 3-6 hours
	2. Proposed course credit hours: 3-6 hours, repeatable for a maximum of 12 hours.
	3. Rationale for revision of course credit hours: This course encompasses a wide variety of

 possible field experiences, so it is important that students are able to take advantage of

 multiple experiences and be able to count these experiences towards the degree as

 electives. The additional hours will allow students to capitalize on these multiple field

 opportunities offered through the Department.

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

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

|  |  |
| --- | --- |
| Department of Geography and Geology | **2/27/2015** |
| Ogden College Curriculum Committee  | **3/5/15** |
| Undergraduate Curriculum Committee  |  |
| University Senate |  |

Proposal Date: 2/23/15

**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, leslie.north@wku.edu, 5-5982

**1. Identification of course:**

* 1. Current course prefix (subject area) and number: GEOG 455
	2. Course title: Global Environmental Change

**2. Revise course title:**

* 1. Current course title: Global Environmental Change
	2. Proposed course title: Global Climate Change
	3. Proposed abbreviated title: Global Climate Change
	4. Rationale for revision of course title: The proposed title is more reflective of modern-day terminology in the environment and climate change field. Students will have a clearer description (through the title) of the course content.

**3. Revise course catalog listing:**

* 1. Current course catalog listing: Examines key themes in environmental change at the

 global scale, environmental policy formation and relevance of environmental change for

 policy implementation and assessment.

* 1. Proposed course catalog listing: Explores the science behind global climate change,

 including how models, observations, and proxies are used to understand and predict past

 and future climate, international perspectives on global climate change, and mitigation

 strategies put forth by the Intergovernmental Panel on Climate Change.

* 1. Rationale for revision of course catalog listing: The new description more closely reflects

 the detailed content covered in the course to remove vagueness and add in relevant

 terminology used in the climate change discipline.

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

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

|  |  |
| --- | --- |
| Department of Geography and Geology | **2/27/2015** |
| Ogden College Curriculum Committee  | **3/5/15** |
| Undergraduate Curriculum Committee  |  |
| University Senate |  |

Proposal Date: 2/23/15

**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, leslie.north@wku.edu, 5-5982

**1. Identification of course:**

* 1. Current course prefix (subject area) and number: GEOG 459
	2. Course title: Physical Hydrology

**2. Revise course title:**

* 1. Current course title: Physical Hydrology
	2. Proposed course title: Advanced Hydrology
	3. Proposed abbreviated title: Advanced Hydrology
	4. Rationale for revision of course title: Distinguishes more clearly between the introductory GEOG/GEOL 310 course and this senior-level course.

**3. Revise course prerequisites:**

3.1 Current prerequisites: MATH 136 with a grade of “C” or better, and GEOG 310 or

 GEOL 420

3.2 Proposed prerequisites: MATH 136 with a grade of "C" or better, and GEOG/GEOL 310

 or GEOG/GEOL 420

3.3 Rationale for revision of course prerequisites: To allow either section (GEOG or GEOL)

 of the existing departmental prerequisites to count.

3.4 Effect on completion of major/minor sequence: None

**4. Revise course catalog listing:**

4.1 Current course catalog listing: A geologically-based and calculus-based introduction to

 the Earth’s hydrologic cycle, using principles of fluid dynamics, that addresses

 components of atmospheric, surface, and ground waters. Fieldtrips and field-based

 exercises are required.

* 1. Proposed course catalog listing: Builds upon the principles of descriptive and quantitative

 hydrology using a geologic- and calculus-based approach to understanding the Earth’s

 hydrologic cycle. Includes components of atmospheric, surface, and ground waters and

 the principles of fluid dynamics that govern the physical and chemical processes that

 affect water and its behavior in the natural world.

* 1. Rationale for revision of course catalog listing: Facilitates better identification of course

 sequencing and more clearly illustrates the advanced and physical nature of this course

 content compared to other courses in the program.

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

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

|  |  |
| --- | --- |
| Department of Geography and Geology | **2/27/2015** |
| Ogden College Curriculum Committee  | **3/5/15** |
| Undergraduate Curriculum Committee  |  |
| University Senate |  |

Proposal Date: 2/23/15

**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, leslie.north@wku.edu, 5-5982

**1. Identification of course:**

* 1. Current course prefix (subject area) and number: GEOG 486
	2. Course title: Senior Environmental Seminar

**2. Revise course title:**

* 1. Current course title: Senior Environmental Seminar
	2. Proposed course title: Environmental Seminar
	3. Proposed abbreviated title: Environmental Seminar
	4. Rationale for revision of course title: All qualified students can participate in the course. Therefore, “Senior” is not needed in the title.

**3. Revise course catalog listing:**

* 1. Current course catalog listing: Current environmental issues discussed by invited

 lecturers, including identification of possible careers in environmental fields.

* 1. Proposed course catalog listing: Current environmental issues discussed by invited

 lecturers. Students are expected to participate in pre-approved department and university-

 wide seminars.

* 1. Rationale for revision of course catalog listing: Seminars do not always include

 discussion of careers in environmental fields, so this was removed from the description.

 Clarifies what is expected in the course (participation in both department and

 university-wide seminars).

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

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

|  |  |
| --- | --- |
| Department of Geography and Geology | **2/27/2015** |
| Ogden College Curriculum Committee  | **3/5/15** |
| Undergraduate Curriculum Committee  |  |
| University Senate |  |

Proposal Date: 2/23/15

**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, leslie.north@wku.edu, 5-5982

**1. Identification of course:**

* 1. Current course prefix (subject area) and number: GEOL 310
	2. Course title: Global Hydrology

**2. Revise course prerequisites:**

2.1 Current prerequisites: GEOL 111

2.2 Proposed prerequisites: GEOL 111 or GEOG/GEOL 103

2.3 Rationale for revision of course prerequisites:

 Additional prerequisite option added to reflect introductory level course recently added to

 the curriculum

2.4 Effect on completion of major/minor sequence: None

**3. Revise course catalog listing:**

3.1 Current course catalog listing: Emphasis is given to descriptive and quantitative

 hydrology. The hydrologic cycle, precipitation, evaporation, and transpiration will be

 covered under descriptive hydrology. Hydrographs, runoff relations, groundwater, and

 storage routing will be covered under quantitative hydrology. Consideration will be given

 to use and management of water as a resource. Equivalent to GEOG 310.

* 1. Proposed course catalog listing: An introduction to descriptive and quantitative

 hydrology. The hydrologic cycle precipitation, evaporation, and transpiration are covered

 under descriptive hydrology. Hydrographs, runoff relations, groundwater, and storage

 routing are covered under quantitative hydrology. Equivalent to GEOG 310.

* 1. Rationale for revision of course catalog listing: Description changed to remove reference

 to management of water resources since this is covered in another course. Emphasizes

 that this is an introductory water course, for easier sequencing identification by

 students.

**4. Proposed term for implementation:** Spring 2016

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

|  |  |
| --- | --- |
| Department of Geography and Geology | **2/27/2015** |
| Ogden College Curriculum Committee  | **3/5/15** |
| Undergraduate Curriculum Committee  |  |
| University Senate |  |