

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

Dr. Martin Stone  
Dr. Doug Chelson  
Dr. Phil Lienesch  
Dr. Darwin Dahl  
Dr. Huanjing Wang  
Dr. Warren Campbell

Dr. Xingang Fan  
Dr. Melanie Autin  
Dr. Doug Harper  
Dr. Andy Mienaltowski  
Dr. Les Pesterfield

**FROM:** Kenneth Crawford, Chair

**SUBJECT:** Agenda for Thursday, March 2, 2017 4:00 p.m. in COHH 4123

**A. OLD BUSINESS:**

- I. Consideration of the minutes of the February 2, 2017 meeting.

**B. NEW BUSINESS:**

**Consent Items**

**Department of Biology**

- I. Proposal to Reactivate a Suspended Course
  - a. BIOL 398, Undergraduate Seminar, 1 hr.
- II. Proposal to Reactivate a Suspended Program
  - a. Ref. 417, Investigative Biotechnology, 48 hrs.

**Department of Engineering**

- I. Proposal to Revise Course Prerequisites/Corequisites
  - a. CE 303, Construction Management, 3 hrs.
  - b. CE 316, Construction Equipment Methods, 3 hrs.
  - c. CE 440, Masonry Design and Construction, 3 hrs.
  - d. EE 460, Continuous Control Systems, 3.5 hrs.
  - e. EE 461, Discrete Control Systems, 3 hrs.
  - f. EE 473 Electromagnetics I, 3 hrs.
- II. Proposal to Delete a Course
  - a. CE 441, Masonry Construction Lab, 1 hr.

**Department of Mathematics**

- I. Proposal to Revise Course Prerequisites/Corequisites
  - a. MATH 117, Trigonometry, 3 hrs.

**Action Items**

**Department of Agriculture**

- I. Proposal to Create a New Course
  - a. AGMC 326, Precision Agriculture, 3 hrs.

- II. Proposal to Make Multiple Revisions to a Course
  - a. AGRO 409, Weed Science, 3 hrs.
  - b. AGRO 422, Field Crops, 3 hrs.
- III. Proposal to Revise a Program
  - a. Ref. 308, Minor in Agriculture, 21 hrs.

**Department of Biology**

- I. Proposal to Make Multiple Revisions to a Course
  - a. BIOL 398, Undergraduate Seminar, 1 hr.
- II. Proposal to Revise a Program
  - b. Ref. 417, Investigative Biotechnology, 48 hrs.

**Department of Engineering**

- I. Proposal to Revise Course Credit Hours
  - a. CE 400, Senior Design Seminar, 1 hr.
  - b. EE 400, Electrical Engineering Design IV, 1 hr.
- II. Proposal to Revise a Program
  - a. Ref. 534, Civil Engineering, 129 hrs.

**Department of Mathematics**

- I. Proposal to Revise a Course Number
  - a. MATH 225, Intro to Advanced Math for Middle Grades Teachers, 3 hrs.
- II. Proposal to Create a New Course, Math Applications for Business, 3 hrs.

**C. OTHER BUSINESS**

**MEMBERS PRESENT:**

Dr. Scott Grubbs for Phil Lienesch  
Dr. Darwin Dahl  
Dr. Huanjing Wang  
Dr. Warren Campbell  
Dr. Xingang Fan

Dr. Melanie Autin  
Dr. Doug Harper  
Dr. Dr. Kelly Madole for Andy Mienaltowski  
Dr. Les Pesterfield  
Guest: Dr. Stuart Burris and Dr. Jeremy Maddox

**FROM:** Ken Crawford, Chair

**OLD BUSINESS:**

Campbell/Dahl moved for approval of the minutes of the December 1<sup>st</sup> meeting. Motion passed.

**NEW BUSINESS:**

**Consent Agenda**

Madole/Campbell moved to approve moving Proposal to Revise Course Prerequisites/Corequisites: CHEM 435 to action agenda. Motion passed. Madole/Campbell moved to approve the Department of Chemistry Consent Items. Motion passed. Campbell/Dahl moved to approve the Department of Engineering Consent Items. Motion passed. Campbell/Autin moved to approve the Department of Geography and Geology Consent Items. Motion passed. Campbell/Madole moved to approve the Department of Psychological Sciences Consent Items. Motion passed.

**Action Agenda**

**Department of Chemistry**

Campbell/Autin moved to approve Proposal to Revise Course Prerequisites/Corequisites: CHEM 435. Motion passed.

Campbell/Madole moved to approve Proposal to Create a New Course: CHEM 436. Motion passed.

Campbell/Dahl moved to approve Proposal to Revise a Program: Ref. 335, Minor in Chemistry. Motion Passed.

Campbell/Autin moved to approve Proposal to Revise a Program: Ref. 623, Major in Chemistry. Motion Passed.

**Department of Geography & Geology**

Grubbs/Campbell moved to approve Proposal to Create a New Course: METR 335. Motion passed with friendly amendments.

**Department of Psychological Sciences**

Dahl/Campbell moved to approve Proposal to Revise a Program: Ref. 434, Minor in Neuroscience. Motion passed.

Campbell/Autin moved to approve Proposal to Revise a Program: Ref. 440, Minor in Psychological Sciences. Motion passed.

Campbell/Autin moved to approve Proposal to Revise a Program: Ref. 747, Major in Psychological Sciences. Motion passed.

**OTHER BUSINESS:**

Discussed the need to fully explain rationale for colonnade courses.

Discussed the PSY/PSYS Connections loop hole. Technically since PSY and PSYS are two different departments, students are able to use a PSY course in one category and a PSYS in another even though some of the courses are cross listed.



Proposal Date: February 8, 2017

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

Contact Person: Sigrid Jacobshagen, sigrid.jacobshagen@wku.edu, 270-745-5994

**1. Identification of course:**

- 1.1 Course prefix (subject area) and number: BIOL 398
- 1.2 Course title: Undergraduate Seminar

**2. Rationale for the course reactivation:** The course will be part of the revised major Molecular Biotechnology within the Biology Department by serving as one of the requirements.

**3. Effect of course reactivation on programs or other departments, if known:** The reactivation of the course will not have any effect on other departments or programs, but it will have the effect of allowing the recent revisions of the Molecular Biotechnology major (formerly named Investigative Biotechnology major) to go forward.

**4. Proposed term for implementation:** Fall 2017

**5. Dates of prior committee approvals**

Department of Biology  
Ogden College Curriculum Committee  
Undergraduate Curriculum Committee  
University Senate

**February 24, 2017**

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Proposal Date: February 8, 2017

**Ogden College of Science and Engineering  
Department of Biology  
Proposal to Reactivate a Suspended Program  
(Consent Item)**

Contact Person: Sigrid Jacobshagen, sigrid.jacobshagen@wku.edu, 270-745-5994

**1. Identification of program:**

- 1.1 Program reference number: 714
- 1.2 Program title: Investigative Biotechnology
- 1.3 Credit hours: 48

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

The major will be reactivated and then directly revised. The intention is to attract new majors to the Department of Biology at WKU from inside and outside of Kentucky. These new students will be particularly interested in an aspect of biology where much progress has been made in recent years and many job opportunities exist. The major also takes advantage of many of the strengths the Department of Biology has developed over the years.

**3. Budgetary considerations:**

In the current curriculum, the two basic courses of altogether 10 credit hours are unique to the major and would require extra instructors. However, these courses did not work as well as intended. In the revisions of the major, these courses will be replaced by the basic course sequence also taken by the biology majors. There will be only two 1-credit hour courses taken solely by the Investigative Biotechnology majors, which would have to be staffed.

**4. Proposed term for implementation:**

Fall of 2017

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

Department of Biology

February 24, 2017

Ogden College Curriculum Committee

Undergraduate Curriculum Committee

University Senate

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

1. **Identification of course:**
  - 1.1 CE 303
  - 1.2 Construction Management
2. **Current prerequisites/corequisites:**

**Current Prerequisites:** None.  
**Current Corequisites:** CE 304 Construction Management Lab
3. **Proposed prerequisites/corequisites:**

**Proposed Prerequisites:** Math 117 or higher, Sophomore Standing  
**Proposed Corequisites:** CE 304 Construction Management Lab
4. **Rationale for the revision of prerequisites/corequisites:**

This course has historically had no prerequisite and is typically taken by Civil Engineering students early in their academic career. The course is also taken by students in the AMS department as well as other majors. Portions of the class include some basic mathematical analysis (as does the associated lab CE 304) that require a working knowledge of geometry and trigonometry. As the program has grown and the student population evolved, students were attempting to take this course in their freshman year due to other classes being full and the fact that this course had no prerequisites. This led to some students not being fully prepared for the course. Based on these issues, the decision was made to place a basic math prerequisite of Math 117 as well as a sophomore standing on the course. These are more appropriate prerequisites to allow the students to be better prepared for the course.
5. **Effect on completion of major/minor sequence:**

Not applicable.
6. **Proposed term for implementation:**

Summer 2017

Proposal Date: 2/2/17

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

Contact Person: Matthew Dettman, [matthew.dettman@wku.edu](mailto:matthew.dettman@wku.edu), 5-2462

1. **Identification of course:**
  - 1.1 CE 316
  - 1.2 Construction Equipment and Methods
2. **Current prerequisites/corequisites:**

**Current Prerequisites:** CE 303 Construction Management  
**Current Corequisites:** None
3. **Proposed prerequisites/corequisites:**

**Proposed Prerequisites:** Math 117 or higher, Sophomore Standing  
**Proposed Corequisites:** None
4. **Rationale for the revision of prerequisites/corequisites:**

This course has historically had CE 303 Construction Management as a prerequisite. The primary reason was that there is some basic mathematical analysis in the CE 303 course (as well as the associated lab CE 304) that served as a primer for CE 316. As the program has grown and the student population evolved, the scheduling of these courses has grown increasingly difficult. CE 303 is taught Fall, Spring and Summer and CE 316 is taught in the Spring and the Summer. Based on these issues, we looked at both of these courses to determine if indeed they needed to be linked in this way. The decision was to de-couple the courses and to place a basic minimum math prerequisite of Math 117 as well as a sophomore standing on both. These are more appropriate prerequisites as typically one course does not depend on the other and what we are looking for in students to take these courses is some basic math skills as well as a freshman year of college level coursework. This will greatly improve scheduling for students who need these courses from Civil Engineering as well as students in the AMS department.
5. **Effect on completion of major/minor sequence:**

Not applicable
6. **Proposed term for implementation:**

Summer 2017

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

Engineering Department

2/2/2017

Ogden College Curriculum Committee

Undergraduate Curriculum Committee

University Senate



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

Contact Person: Shane M. Palmquist  
Shane.Palmquist@wku.edu  
270-745-2919

**1. Identification of course:**

- 1.1 Course prefix (subject area) and number: CE 440
- 1.2 Course title: Masonry Design and Construction

**2. Current prerequisites and corequisites:**

Prerequisites: CE 382, 370 and 371.  
Corequisites: CE 441

**3. Proposed prerequisites and corequisites:**

Prerequisites: CE 382, 370 and 371, or consent of instructor

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

CE 441 Masonry Construction Lab is being deleted and will no longer be offered. Consent of instructor is being added as a prerequisite so that students from other institutions which have had academic exposure to masonry may take this course without having formally taken CE 370 and 371 Materials of Construction and Lab.

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

**6. Proposed term for implementation:** Fall 2017

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

Department of Engineering

Ogden College Curriculum Committee

Undergraduate Curriculum Committee

University Senate

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

Engineering Department

2/2/2017

Ogden College Curriculum Committee

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Undergraduate Curriculum Committee

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University Senate

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Proposal Date: 11/17/16

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

Contact Person: Stacy Wilson, [stacy.wilson@wku.edu](mailto:stacy.wilson@wku.edu), 55848

**1. Identification of course:**

1.1 Course prefix (subject area) and number: EE 460

1.2 Course title: Continuous Control Systems

**2. Current prerequisites:**

EE 420 with a grade of "C" or better

**3. Proposed prerequisites:**

EE 420 ("C" or better) or ME 310 ("C" or better)

and

MATH 307 or MATH 350 or MATH 370

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

This course has been added to the list of technical electives for mechanical engineering students.

The change in pre-requisite courses is to reflect the appropriate preparation needed for both mechanical and electrical engineering students.

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

This change will provide more options for the mechanical engineering students.

**6. Proposed term for implementation: Fall 2017**

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

Engineering Department

Ogden College Curriculum Committee

Undergraduate Curriculum Committee

University Senate

17 November 2016

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**Attachment: Course Inventory Form**

Proposal Date: 11/17/16

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

Contact Person: Stacy Wilson, [stacy.wilson@wku.edu](mailto:stacy.wilson@wku.edu), 55848

**1. Identification of course:**

- 1.1 Course prefix (subject area) and number: EE 461
- 1.2 Course title: Discrete Control Systems

**2. Current prerequisites:**

EE 420

**3. Proposed prerequisites:**

EE 420 ("C" or better) or ME 310 ("C" or better)  
and  
MATH 307 or MATH 350 or MATH 370

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

This course has been added to the list of technical electives for mechanical engineering students. The change in pre-requisite courses is to reflect the appropriate preparation needed for both mechanical and electrical engineering students.

Also, electrical engineering students need adequate mastery of the material in EE 420 before taking this course.

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

This change will provide more options for the mechanical engineering students.

**6. Proposed term for implementation:** Fall 2017

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

Engineering Department  
Ogden College Curriculum Committee  
Undergraduate Curriculum Committee  
University Senate

17 November 2016

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**Attachment: Course Inventory Form**

Proposal Date: 2/1/17

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

Contact Person: Mark E. Cambron, [mark.cambron@wku.edu](mailto:mark.cambron@wku.edu), 270-745-8868

- 1. Identification of course:**
  - 1.1 Course prefix (subject area) and number: EE 473
  - 1.2 Course title: Electromagnetics I
  - 1.3 Credit hours: 3.0
  
- 2. Current prerequisites:** MATH 331, MATH 237 and  
PHYS 265 (C or better)  
**Current corequisites:** none
  
- 3. Proposed prerequisites:** MATH 331, MATH 237 (C or better), and  
PHYS 265 (C or better)  
**Proposed corequisites:** none
  
- 4. Rationale for the revision of prerequisites/corequisites:**  
A "C" or better in MATH 237 will better prepare students for EE 473.
  
- 5. Effect on completion of major/minor sequence:** None
  
- 6. Proposed term for implementation:** Spring 2018
  
- 7. Dates of prior committee approvals:**

Department of Engineering

2 February 2017

Ogden College Curriculum Committee

University Curriculum Committee

University Senate

**Attachment: Course Inventory Form**



Proposal Date: 1/30/2017

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

Contact Person: Shane M. Palmquist  
Shane.Palmquist@wku.edu  
270-745-2919

**1. Identification of course:**

- 1.1 Current course prefix (subject area) and number: CE 441
- 1.2 Course title: Masonry Construction Lab

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

The important material in this lab can be covered during the course, CE 440 Masonry Design and Construction. The lab causes scheduling conflicts and based on limited resources, the program feels this lab should be deleted.

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

**4. Proposed term for implementation: Fall 2017**

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

Engineering Department	_____
Ogden College Curriculum Committee	_____
	_____
Undergraduate Curriculum Committee	_____
University Senate	_____

Proposal Date: February 17, 2017

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

Contact Person: Robin Ayers, [robin.ayers@wku.edu](mailto:robin.ayers@wku.edu), 270-745-5009

**1. Identification of course:**

- 1.1 Course prefix (subject area) and number: MATH 117
- 1.2 Course title: Trigonometry
- 1.3 Credit hours: 3.0

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

Four years of high school mathematics including Algebra I and II and geometry, and a satisfactory score on Math Placement Exam; or MATH 116 with a grade of C or better.

**3. Proposed prerequisites/corequisites/special requirements:**

Four years of high school mathematics including Algebra I and II and geometry, and a satisfactory score on Math Placement Exam; or MATH 116 with a grade of C or better; or MATH 123 with a grade of C or better

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

After completing MATH 123 (Mathematical Applications for Business), a student from the College of Business may wish to pursue a program which requires MATH 136 ( Calculus I). Trigonometry is a prerequisite for that course. Because MATH 123 includes the college algebra skills necessary for success in trigonometry, it is being proposed as an alternative prerequisite for MATH 117 (Trigonometry).

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

There is no effect on completion of major/minor sequence

**6. Proposed term for implementation:**

Fall 2017

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

Department of Mathematics

Feb. 17, 2017

OCSE Curriculum Committee

Colonnade Committee

Undergraduate Curriculum Committee

University Senate



remote sensing, no current course relates these technologies to agricultural practices and efficiencies. Additionally, the course content of AGMC 326 will include discussion of practical applications of these technologies that are important for agriculture (variable rate application, grid soil sampling, machinery guidance systems and yield monitoring, and precision planting among them).

- 2.5 Relationship of the proposed course to courses offered in other institutions: Many institutions offer similar courses. Comparable courses include: AGR 471 (Applications in Precision Agriculture) Murray State University; ASM 42200 (Advanced Machine Technology for Agricultural Crop Production) Purdue University; BAE 599 (Precision Agriculture) University of Kentucky.

### 3. Discussion of proposed course:

- 3.1 Schedule type: C

- 3.2 Learning Outcomes: Upon completion of this course student should be able to:
- Understand equipment and techniques relevant to precision agriculture.
  - Explain the relationship between precision farming and agronomic practices.
  - Explore career opportunities that exist within this segment of agriculture.
  - Explain methods of precision (grid) soil sampling.
  - Generate a list of mappable information that could be utilized in farm management decision making.
  - Explain how Global Positioning Systems and Geographic Information Systems work.
  - Correctly operate a handheld GPS unit.
  - Navigate using waypoints.

- 3.3 Content outline:
- An Introduction to Precision Farming
  - Satellite Based Positioning Systems
  - Yield Monitoring and Mapping
  - Grid Soil Sampling and Analysis
  - Guidance Systems and their Utility to Agriculture
  - Remote Sensing
  - Computers and Geographic Information Systems
  - Variable Rate Technologies for Fertilizer, Lime, and Pesticide Application
  - Precision Farming — Issues to Consider

- 3.4 Student expectations and requirements: Students will be evaluated based upon:
- Written exams and quizzes
  - Problem solving homework
  - Attendance
  - Hands-on practicums

- 3.5 Tentative texts and course materials:  
The Precision-Farming Guide for Agriculturists by Deere & Company  
ISBN 0-86691-358-0. Other references may be assigned.



**4. Resources:**

- 4.1 Library resources: None required
- 4.2 Computer resources: None required

**5. Budget implications:**

- 5.1 Proposed method of staffing: Existing full time faculty
- 5.2 Special equipment needed: none
- 5.3 Expendable materials needed: N/A
- 5.4 Laboratory materials needed: N/A

**6. Proposed term for implementation: Fall 2017**

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

Department of Agriculture

Ogden College Curriculum Committee

Professional Education Council (if applicable)

General Education Committee (if applicable)

Undergraduate Curriculum Committee

University Senate

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Proposal Date: January 30, 2017

**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 409
  - 1.2 Course title: Weed Science
  
- 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:
  - 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) Current prerequisites are: BIOL 120 or AGRO 110; CHEM 105 and 107 or equivalent. Corequisite: AGRO 410.
  - 4.2 Proposed prerequisites/corequisites/special requirements: CHEM 107 or equivalent; AGRO 320, AGRO 350. Corequisite: AGRO 410.
  - 4.3 Rationale for revision of course prerequisites/corequisites/special requirements: Due to the emphasis placed upon both soil-herbicide interactions, and biochemical mechanisms of herbicide activity, we feel it is imperative that students receive prior instruction regarding soil science (AGRO 350) and crop physiology (AGRO 320).
  - 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. Revise 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. **Proposed term for implementation: Fall 2017**

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

Department of Agriculture	February 2, 2017
OCSE Curriculum Committee	_____
Professional Education Council (if applicable)	_____
General Education Committee (if applicable)	_____
Undergraduate Curriculum Committee	_____
University Senate	_____

Proposal Date: January 30, 2017

**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 422
  - 1.2 Course title: Field Crops
- 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:
  - 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) Current prerequisites are: AGRO 110 and 350, BIOL 120 or consent of instructor.
  - 4.2 Proposed prerequisites/corequisites/special requirements: AGRO 320 and AGRO 350.
  - 4.3 Rationale for revision of course prerequisites/corequisites/special requirements: Due to an increasing emphasis placed upon the relationships between plant physiological processes and crop phenology, we feel it is imperative that students receive prior instruction regarding crop physiology (AGRO 320).
  - 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. Revise 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. Proposed term for implementation: Fall 2017**

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

Department of Agriculture

February 2, 2017

OCSE Curriculum Committee

Professional Education Council (if applicable)

General Education Committee (if applicable)

Undergraduate Curriculum Committee

University Senate

Proposal Date: February 1, 2017

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

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

**1. Identification of program:**

- 1.1 Current program reference number: 308
- 1.2 Current program title: Minor in Agriculture
- 1.3 Credit hours: 21

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

- Addition of 3 credit hours of electives numbered 300 or above

**3. Detailed program description: See attached table**

**(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.)**

**4. Rationale for the proposed program change:** These proposed changes add more academic rigor to our minor.

**5. Proposed term for implementation and special provisions (if applicable):** Fall 2017

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

Department of Agriculture

February 2, 2017 \_\_\_\_\_

OCSE Curriculum Committee

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Professional Education Council (if applicable)

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Undergraduate Curriculum Committee

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University Senate

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Minor in Agriculture  
Reference Number: 308

Current Courses

Proposed Courses

AGRO 110 (3) ANSC 140 (3) AGRI 494 (3)	AGRO 110 (3) ANSC 140 (3) AGRI 494 (3)
Choose 3 hours from the following: AGRO 320 (3) ANSC 345 (3) AGRO 350 (3) AGEC 360 (3)	Choose 3 hours from the following: AGRO 320 (3) ANSC 345 (3) AGRO 350 (3) AGEC 360 (3)
Electives in Agriculture to complete the 18 hours. Must be numbered 300 or above.	<b>Electives in Agriculture to complete the 21 hours.</b> Must be numbered 300 or above.

Proposal Date: February 8, 2017

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

Contact Person: Sigrid Jacobshagen, sigrid.jacobshagen@wku.edu, 270-745-5994

- 1. Identification of course:**
  - 1.1 Current course prefix (subject area) and number: BIOL 398
  - 1.2 Course title: Undergraduate Seminar
  
- 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 Senior Standing
  - 4.2 Proposed prerequisites/corequisites/special requirements: None
  - 4.3 Rationale for revision of course prerequisites/corequisites/special requirements: The removal of the prerequisite Senior Standing will allow the course to be taken over several semesters as an in progress course. This will create a cohort-based environment that fosters peer-to-peer learning and will allow students to keep up with new advances in the field.
  - 4.4 Effect on completion of major/minor sequence: The change will improve the ability of future students to start early with the course and therefore take it in a cumulative fashion. It will not affect current major/minors, because the course is not required for current students and their major/minors.
  
- 5. Revise course catalog listing: n/a**
  - 5.1 Current course catalog listing
  - 5.2 Proposed course catalog listing:
  - 5.3 Rationale for revision of course catalog listing:
  
- 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:**

7.1 Current grade type: Standard letter grade

7.2 Proposed grade type: pass/fail grade and IP (in progress) grade type

7.3 Rationale for revision of grade type: The cumulative in-progress fashion of the course with pass/fail grading will allow for the intended function as a continuing course creating a cohort-based environment that fosters peer-to-peer learning.

**8. Proposed term for implementation: Fall 2017**

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

Department of Biology

Ogden College Curriculum Committee

Undergraduate Curriculum Committee

University Senate

**February 24, 2017**

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Proposal Date: February 8, 2017

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

Contact Person: Sigrid Jacobshagen, sigrid.jacobshagen@wku.edu, 270-745-5994

**1. Identification of program:**

- 1.1 Current program reference number: 714
- 1.2 Current program title: Major in Investigative Biotechnology
- 1.3 Credit hours: 48

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

- Change title of major from Investigative Biotechnology to Molecular Biotechnology.
- Change credit hours from 48 to 55.
- Drop as required courses:
  - BIOL 150 (Investigative Biotechnology Core I)
  - BIOL 151 (Investigative Biotechnology Core II)
  - BIOL 199 (Introduction to Research Experience)
  - BIOL 275 (Colloquia)
  - BIOL 495 (Molecular Genetics).
- Add as required courses:
  - BIOL 120/121 (Biological Concepts: Cells, Metabolism, and Genetics & Laboratory)
  - BIOL 122/123 (Biological Concepts: Evolution, Diversity and Ecology & Laboratory)
  - BIOL 212 (Genome Discovery and Exploration)
  - BIOL 226/227 (Microbial Biology and Diversity & Laboratory)
  - BIOL 319/322 (Introduction to Molecular and Cell Biology & Laboratory)
  - BIOL 382 (Introductory Biostatistics)
  - BIOL 398 (Undergraduate Seminar)
  - BIOL 447 (Lab Biochemistry I)
  - BIOL 489 (Professional Aspects of Biology).
- Drop as electives the choice of any biology course applicable to the two biology majors.
- Add as electives the list of courses:
  - BIOL 222/223 (Plant Biology and Diversity & Laboratory) or BIOL 224/225 (Animal Biology and Diversity & Laboratory)
  - BIOL 316 (Evolution)
  - BIOL 328 (Immunology)
  - BIOL 330 (Animal Physiology)
  - BIOL 331 (Animal Physiology Laboratory)
  - BIOL 335 (Neurobiology)
  - BIOL 400 (Plant Physiology)
  - BIOL 403 (Molecular Basis of Cancer)
  - BIOL 404 (Electron Microscopy)



- BIOL 407 (Virology)
- BIOL 412 (Cell Biology Laboratory)
- BIOL 420 (Introduction to Toxicology)
- BIOL 440 (Developmental Genetics)
- BIOL 464 (Endocrinology)
- BIOL 467 (Biochemistry II)
- BIOL 470 (Pathogenic Microbiology)
- BIOL 490 (Plants as Alternative Therapeutics)
- BIOL 495 (Molecular Genetics)
- BIOL 496 (Plant Biotechnology).
- Drop as required supporting course:
  - BIOL 283 (Introductory Biostatistics).
  - CHEM 314 (Introduction to Organic Chemistry)
- Add as required supporting courses:
  - [MATH 116 (College Algebra) and MATH 117 (Trigonometry)] as the choice with MATH 136 (Calculus I) from which the students have to choose one.
  - AMS 371 (Quality Assurance) or AMS 390 (Project Management) or AMS 430 (Technology Management/Team Building).

### 3. Detailed program description:

<b>Current program</b>	<b>Proposed program</b>
<p><u>Title</u> Major in <del>Investigative</del> Biotechnology</p> <p><u>Required coursework (38 hrs)</u>  <del>BIOL 150: Investigative Biotechnology Core I (5)</del>  <del>BIOL 151: Investigative Biotechnology Core II (5)</del>  <del>BIOL 199: Introduction to Research Experience (1)</del>  <del>BIOL 275: Colloquia (1)</del>            BIOL 312: Bioinformatics (4)            BIOL 327: Genetics (4)            BIOL 350: Introduction to Recombinant Genetics (3)            BIOL 369: Cooperative Education in Biology (3)              or BIOL 399: Research Problems in Biology (3)            BIOL 411: Cell Biology (3)            BIOL 446: Biochemistry I (3)  <del>BIOL 495: Molecular Genetics (3)</del></p>	<p><u>Title</u> Major in <b>Molecular</b> Biotechnology</p> <p><u>Required coursework (45 hrs)</u>  <b>BIOL 120/121: Biological Concepts: Cells, Metabolism, and Genetics &amp; Laboratory (4)</b>  <b>BIOL 122/123: Biological Concepts: Evolution, Diversity and Ecology &amp; Laboratory (4)</b>  <b>BIOL 212: Genome Discovery and Exploration (2)</b>  <b>BIOL 226/227: Microbial Biology and Diversity &amp; Laboratory (4)</b>            BIOL 312: Bioinformatics (4)  <b>BIOL 319/322: Introduction to Cellular and Molecular Biology &amp; Laboratory (4)</b>            BIOL 327/337: Genetics &amp; Laboratory (4)            BIOL 350: Introduction to Recombinant Genetics (3)            BIOL 369: Cooperative Education in Biology (3)              or BIOL 399: Research Problems in Biology (3)  <b>BIOL 382: Introductory Biostatistics (3)</b>  <b>BIOL 398: Undergraduate Seminar (1)</b>            BIOL 411: Cell Biology (3)            BIOL 446: Biochemistry I (3)  <b>BIOL 447: Biochemistry Laboratory (2)</b>  <b>BIOL 489: Professional Aspects of Biology (1)</b></p>



<p><u>Elective coursework (10 hrs)</u> Any course in the biology curriculum applicable to the biology major may be used as an elective for the Investigative Biotechnology major in consultation with the student's advisor.</p>	<p><u>Elective coursework (10 hrs) chosen from the following list</u>  <b>BIOL 222/223: Plant Biology and Diversity &amp; Laboratory (4) or BIOL 224/225: Animal Biology and Diversity &amp; Laboratory (4)</b>  <b>BIOL 316: Evolution (3)</b>  <b>BIOL 328: Immunology (4)</b>  <b>BIOL 330: Animal Physiology (3)</b>  <b>BIOL 331: Animal Physiology Laboratory (1.5)</b>  <b>BIOL 335: Neurobiology (3)</b>  <b>BIOL 400: Plant Physiology (4)</b>  <b>BIOL 403: Molecular Basis of Cancer (3)</b>  <b>BIOL 404: Electron Microscopy (4)</b>  <b>BIOL 407: Virology (3)</b>  <b>BIOL 412: Cell Biology Laboratory (1)</b>  <b>BIOL 420: Introduction to Toxicology (3)</b>  <b>BIOL 440: Developmental Genetics (3)</b>  <b>BIOL 464: Endocrinology (3)</b>  <b>BIOL 467: Biochemistry II (3)</b>  <b>BIOL 470: Pathogenic Microbiology (3)</b>  <b>BIOL 490: Plants as Alternative Therapeutics (3)</b>  <b>BIOL 495: Molecular Genetics (3)</b>  <b>BIOL 496: Plant Biotechnology (4)</b></p>
<p><u>Supporting coursework</u>  <b>BIOL 283: Introductory Biostatistics (4)</b>  or MATH 136: Calculus I (4)  <b>CHEM 120/121: College Chemistry I &amp; Lab (5)</b>  <b>CHEM 222/223: College Chemistry II &amp; Lab (5)</b>  <b>CHEM 314: Introduction to Organic Chemistry (5)</b>  or [CHEM 340/341: Organic Chemistry I &amp; Lab (5) and CHEM 342/343: Organic Chemistry II &amp; Lab (5)]  <b>PHYS 231/232: Introduction to Physics and Biophysics I &amp; Lab (4)</b>  <b>PHYS 332/233: Introduction to Physics and Biophysics II &amp; Lab (4)</b></p>	<p><u>Supporting coursework</u>  <b>[MATH 116: College Algebra (3) and MATH 117: Trigonometry (3)]</b>  or MATH 136: Calculus I (4)  <b>CHEM 120/121: College Chemistry I &amp; Lab (5)</b>  <b>CHEM 222/223: College Chemistry II &amp; Lab (5)</b>  <b>CHEM 340/341: Organic Chemistry I &amp; Lab (5)</b>  and CHEM 342/343: Organic Chemistry II &amp; Lab (5)  <b>PHYS 231/232: Introduction to Physics and Biophysics I &amp; Lab (4)</b>  <b>PHYS 332/233: Introduction to Physics and Biophysics II &amp; Lab (4)</b>  <b>AMS 371: Quality Assurance (3)</b>  or <b>AMS 390: Project Management (3)</b>  or <b>AMS 430: Technology Management/Team Building (3)</b></p>

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

Overall, the proposed changes are the result of intensive research on current and projected requirements and conditions for work in the biotechnology industry or in biotechnology research in an academic setting. The changes are also intended to better align the courses with departmental resources and with recently developed biotechnology-related courses.

- The new title of the major (Molecular Biotechnology instead of Investigative Biotechnology) reflects the focus on molecular processes and molecular technologies.
- The change in credit hours of the major from 48 to 55 hours is necessary to achieve the intended depth of education, particularly in light of modern developments in the field of molecular biotechnology.
- The previously required introductory series specific for the major (BIOL 150/151: Investigative Biotechnology Core I/II) and the equally specific Introduction to Research Experience (BIOL 199) will be replaced with the introductory series required for the Biology major (BIOL 120/121 and 122/123: Biological Concepts in Cells, Metabolism, & Genetics as well as in Evolution, Diversity and Ecology, with their laboratories) and with the recently developed Genome Discovery and Exploration course (BIOL 212). The aims of each set of courses are the same, i.e. to lay a basic foundation of required knowledge but at the same time to also instill enthusiasm for the scientific approach through hands-on, investigative exercises. The proposed changes make the approach far superior, however, because they rely on well-developed courses in the department. The Genome Discovery and Exploration course in particular relies on molecular biotechnology-related research specifically geared towards freshmen and has already produced many student presentations, student databank entries and publications with student authors. The changes will also better integrate the Molecular Biotechnology major into the Biology Department for more efficient use of resources and faculty time.
- Replacing the required Colloquia (BIOL 275) with Undergraduate Seminar (BIOL 398) will not increase the number of credit hours (both are 1 credit hour), but it will elevate this requirement to a branding course for the major creating a cohort-based environment that fosters peer-to-peer learning. It will be taken each semester by every Molecular Biotechnology major, from freshman to senior, as an in-progress course. Since molecular biotechnology changes rapidly, the frequent course interval will also allow students to become better acquainted with these changes.
- The additional required courses, which are Microbial Biology and Diversity & Laboratory (BIOL 226/227), Introduction to Molecular and Cell Biology & Laboratory (BIOL 319/322), Introductory Biostatistics (BIOL 382), and Biochemistry Laboratory (BIOL 447) will provide necessary content that is required for mastering concepts in molecular biotechnology.
- The addition of a required Professional Aspects of Biology (BIOL 489) upon the completion of a supervised internship experience (BIOL 369) or independent research project (BIOL 399) will cap the experience by employing peer-to-peer learning to leverage the research or internship exposure, while preparing the students for careers in the molecular biotechnology field.
- Listing these particular courses as electives instead of allowing any course as an elective that is also applicable to the biology majors will ensure that students are on a path of learning where they gain a solid understanding of the breadth of concepts in molecular biotechnology.
- Removing Introductory Biostatistics (BIOL 283) as the choice with Calculus I as supporting course is necessary, since Introductory Biostatistics (which lately received the new number of BIOL 382) has been made a required course in line with the importance the subject plays in molecular biotechnology, where large amounts of data are often produced and analyzed. Instead, the two-course-sequence College Algebra (MATH 116)

and Trigonometry (MATH 117) as the other choice with Calculus I is added, because Trigonometry is required as prerequisite for Introductory Biostatistics and College Algebra as prerequisite for Trigonometry. As a consequence, the mathematics that is required is made more clear. Introduction to Organic Chemistry (CHEM 314) is removed because the Chemistry Department does not offer the course anymore. Three AMS courses are added as supporting courses from which students have to choose one in order to better prepare themselves for the biotechnological workplace in industry or academia.

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

Fall of 2017

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

Department of Biology

February 24, 2017

Ogden College Curriculum Committee

Undergraduate Curriculum Committee

University Senate



Proposal Date: 2/2/2017

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

Contact Person: Matthew Dettman, [matthew.dettman@wku.edu](mailto:matthew.dettman@wku.edu), 5-2462

**1. Identification of course:**

- 1.1 CE 400
- 1.2 Senior Design Seminar
- 1.3 1 Credit Hour

**2. Proposed course credit hours:**

2 Credit Hours

**3. Rationale for the revision of course credit hours:**

This course is the first course of the CE Senior Capstone Experience. It includes development of their Senior Project as well as topics in professionalism, ethics, and leadership. While the content of the course has not changed, the value of 1 credit hours does not adequately reflect the workload in this course, therefore it is being modified to 2 credit hours.

**4. Proposed term for implementation:**

Fall 2017

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

Department/ Unit

2/2/2017

College Curriculum Committee

Professional Education Council (if applicable)

General Education Committee (if applicable)

Undergraduate Curriculum Committee

University Senate

Proposal Date: 1/27/2017

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

Contact Person: Mark Cambron [mark.cambron@wku.edu](mailto:mark.cambron@wku.edu) 745-8868

**1. Identification of course:**

1.1 Current course prefix (subject area) and number: EE 400  
1.2 Course title: Electrical Engineering Design IV  
1.3 Credit hours: 1.0

**2. Proposed course credit hours:** 2.0

**3. Rationale for the revision of course credit hours:** This course is the first course of the EE Senior Capstone Experience. While the content of the course has not changed, the value of 1 credit hours does not adequately reflect the workload in this course, therefore it is being modified to 2 credit hours.

**4. Proposed term for implementation:** Fall 2017

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

Department of Engineering

2 February 2017

Ogden College Curriculum Committee

University Curriculum Committee

University Senate



Proposal Date: 1/30/2017

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

Contact Person: Shane M. Palmquist  
Shane.Palmquist@wku.edu  
 270-745-2919

**1. Identification of program:**

1.1 Current program reference number: 534  
 1.2 Current program title: Engineering-Civil  
 1.3 Credit hours: Current: 129                      **Proposed: 130**

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

- Increase the credit hours in CE 400 Senior Design Seminar from 1 to 2.
- Delete CE 441 Masonry Construction Lab (1 credit hour).
- Add CE 301 Field Experience in Floodplain Management (3 credit hours) to the list of approved technical elective courses.

**3. Detailed program description:**

**CE Current Program**

**CE Proposed Program**

Prefix	#	Course Title	Hrs.	Prefix	#	Course Title	Hrs.
CE	176	CE Fresh Design,	1	CE	176	CE Freshman Design,	1
ME	176	ME Fresh Design, or		ME	176	ME Freshman Design, or	
EE	101	EE Design I		EE	101	EE Design I	
CE	160	Prin. of Surveying	3	CE	160	Prin. of Surveying	3
CE	161	Surveying Lab	1	CE	161	Surveying Lab	1
CE	303	Constr. Management	3	CE	303	Constr. Management	3
CE	304	Constr. Management Lab	1	CE	304	Constr. Management Lab	1
CE	305	Risk Analysis	3	CE	305	Risk Analysis	3
CE	310	Strengths Lab	1	CE	310	Strengths Lab	1
CE	316	Equip. & Methods	3	CE	316	Equip. & Methods	3
CE	331	Transportation Eng.	3	CE	331	Transportation Eng.	3

Prefix	#	Course Title	Hrs.	Prefix	#	Course Title	Hrs.
CE	341 342	Fluid & Thermal Science	4	CE	341 342	Fluid & Thermal Science	4
CE	351 352	Intro. to Environmental Engineering	3	CE	351 352	Intro. to Environmental Engineering	3
CE	370	Materials of Construction	2	CE	370	Materials of Construction	2
CE	371	Matls. of Constr. Lab	1	CE	371	Matls. of Constr. Lab	1
CE	382 373	Structural Analysis	3	CE	382 373	Structural Analysis	3
CE	384 482 483	Civil Engineering Design Course	3	CE	384 482 483	Civil Engineering Design Course	3
CE	410	Soil Mechanics	3	CE	410	Soil Mechanics	3
CE	411	Soil Mechanics Lab	1	CE	411	Soil Mechanics Lab	1
CE	412	Foundation Eng.	3	CE	412	Foundation Eng.	3
CE	461	Hydrology	3	CE	461	Hydrology	3
CE	400	Senior Design Seminar	1	<b>CE</b>	<b>400</b>	<b>Senior Design Seminar</b>	<b>2</b>
CE	498	Senior Project	3	CE	498	Senior Project	3
<b>CE</b>		<b>Technical Elective*</b>	<b>3</b>	<b>CE</b>		<b>Technical Elective*</b>	<b>3</b>
<b>CE</b>		<b>Technical Elective*</b>	<b>3</b>	<b>CE</b>		<b>Technical Elective*</b>	<b>3</b>
<b>CE</b>		<b>Technical Elective*</b>	<b>3</b>	<b>CE</b>		<b>Technical Elective*</b>	<b>3</b>
AMS	163	Arch. Drafting	3	AMS	163	Arch. Drafting	3
EM	221 222	Statics	3	EM	221 222	Statics	3
EM	302 303	Mechanics of Deformable Bodies	3	EM	302 303	Mechanics of Deformable Bodies	3
<b>TOTALS</b>		<b>Credit Hours</b>	<b>67</b>	<b>TOTALS</b>		<b>Credit Hours</b>	<b>68</b>

### Other Requirements

### Other Proposed Requirements

Prefix	#	Course Title	Hrs.	Prefix	#	Course Title	Hrs.
MATH	136	Calculus I	4	MATH	136	Calculus I	4
MATH	137	Calculus II	4	MATH	137	Calculus II	4
MATH	237	Multivariable Calculus	4	MATH	237	Multivariable Calculus	4
MATH	331	Differential Equations	3	MATH	331	Differential Equations	3
PHYS	255	University Physics I	4	PHYS	255	University Physics I	4
PHYS	256	Physics I Lab	1	PHYS	256	Physics I Lab	1
		Science or Math Elective (See list below.)**	3			Science or Math Elective (See list below.)**	3



Prefix	#	Course Title	Hrs.	Prefix	#	Course Title	Hrs.
CHEM	120	College Chemistry I	3	CHEM	120	College Chemistry I	3
CHEM	121	Chemistry I Lab	2	CHEM	121	Chemistry I Lab	2
GEOL	111	The Earth	3	GEOL	111	The Earth	3
GEOL	113	The Earth Lab	1	GEOL	113	The Earth Lab	1
TOTALS		Credit Hours	32	TOTALS		Credit Hours	32

\*Students are required to complete a total of 9 credit hours of technical electives in civil engineering or a related field. A minimum of 6 credit hours must come from CE prefixed courses.

### Current CE Technical Electives

### Proposed CE Technical Electives

Prefix	#	Course Title	Hrs.	Prefix	#	Course Title	Hrs.
CE	300	Floodplain Management	3	CE	300	Floodplain Management	3
				<b>CE</b>	<b>301</b>	<b>Field Experience in Floodplain Management</b>	<b>3</b>
CE	326	Engineering Law	3	CE	326	Engineering Law	3
CE	360	Est., Scheduling Bidding	3	CE	360	Est., Scheduling Bidding	3
CE	361	Estimating Lab	1	CE	361	Estimating Lab	1
CE	378	Boundary Surveying	3	CE	378	Boundary Surveying	3
CE	379	Boundary Surveying. Lab	1	CE	379	Boundary Surveying. Lab	1
CE	380	Route Surveying	3	CE	380	Route Surveying	3
CE	381	Route Surveying Lab	1	CE	381	Route Surveying Lab	1
CE	383	Structural Steel Design	3	CE	383	Structural Steel Design	3
CE	426	Adv. Construction Matls.	3	CE	426	Adv. Construction Matls.	3
CE	436	Design / Constr. Integration	3	CE	436	Design / Constr. Integration	3
CE	440	Masonry Construction	3	CE	440	Masonry Construction	3
CE	441	Masonry Construction Lab	1	CE	<del>441</del>	<del>Masonry Construction Lab</del>	<del>1</del>
CE	444	Bridge Engineering	3	CE	444	Bridge Engineering	3
CE	462	Hydraulic Engineering	3	CE	462	Hydraulic Engineering	3
CE	474	Civil Eng. Design Project	1-3	CE	474	Civil Eng. Design Project	1-3
CE	475	Sel. Topics in Civil Eng.	3	CE	475	Sel. Topics in Civil Eng.	3
CE	476	Highway Construction	3	CE	476	Highway Construction	3

Prefix	#	Course Title	Hrs.	Prefix	#	Course Title	Hrs.
CE	486	Steel & Concrete Constr.	3	CE	486	Steel & Concrete Constr.	3
CE	490	UK-CE Sel. Topics (Fall)	3	CE	490	UK-CE Sel. Topics (Fall)	3
CE	491	UK-CE Sel. Topics (Spr)	3	CE	491	UK-CE Sel. Topics (Spr)	3
CM	363	Constr. Est. and Bidding	3	CM	363	Constr. Est. and Bidding	3
CM	400	Constr. Administration	3	CM	400	Constr. Administration	3
CM	426	Construction Law	3	CM	426	Construction Law	3
EE	350	Fund. of Electrical Eng.	4	EE	350	Fund. of Electrical Eng.	4
EM	313	Dynamics	3	EM	313	Dynamics	3
GISC	317	Geog. Info. Systems	4	GISC	317	Geog. Info. Systems	4
ME	220	Eng. Thermodynamics	3	ME	220	Eng. Thermodynamics	3
GISC	316	Fundamentals of GIS	4	GISC	316	Fundamentals of GIS	4
GEOL	308	Structural Geology	4	GEOL	308	Structural Geology	4
GEOL	310	Global Hydrology	3	GEOL	310	Global Hydrology	3
GEOL	415	Environmental Geology	3	GEOL	415	Environmental Geology	3
ENGR	400	Systems Engineering	3	ENGR	400	Systems Engineering	3
AMS	305	Building Codes	3	AMS	305	Building Codes	3
AMS	325	Surv. of Building Systems	3	AMS	325	Surv. of Building Systems	3
MATH	350	Adv. Engineering Math	3	MATH	350	Adv. Engineering Math	3

**\*\*Proposed List of Courses to Satisfy the Science or Math Elective**

Prefix	#	Course Title	Hrs.
PHYS	265/266	University Physics II & Lab	4/1
MATH	307	Linear Algebra	3
MATH	370	Applied Tech. in Mathematics	3
STAT	301	Prob. & Applied Statistics	3
CHEM	222/223	College Chemistry II & Lab	3/2
GEOG	280	Envir. Sc. & Sustainability	4
GEOL	311	General Oceanography	3
GEOL	420	Geomorphology	4
GEOL	445	Aqueous Geochemistry	3
GEOL	465	Geophysics	3

**CE Program:**

Students must have a grade of “C” or better in:

- All premajor courses,
- All math courses,
- Science or math elective,
- EM 302 or 303 Mechanics of Deformable Solids,
- All CE courses including technical electives (except for one (1) 300-level or 400-level CE course),

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

- The CE program is harmonizing CE 400 Senior Design Seminar with the senior project courses of the engineering programs, mechanical and electrical engineering. Both, ME 400 Mechanical Engineering Design and EE 400 Design IV are 2 credit courses.
- Delete CE 441 Masonry Construction Lab (1 credit hour). The material in this lab can be covered in the course, CE 440 Masonry Design and Construction. The lab causes scheduling conflicts and based on limited resources, the program feels this lab should be deleted.
- CE 301 Field Experience in Floodplain Management (3 credit hours) has already been created and the CE program would like to add this course to the list of approved technical elective courses.

**5. Proposed term for implementation:** Fall 2017

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

Department of Engineering

Ogden College Curriculum Committee

Undergraduate Curriculum Committee

University Senate

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Proposal Date: 02/09/2017

**Ogden College  
Department of Mathematics  
Proposal to Revise Course Number  
(Action Item)**

Contact Persons: Patrick Brown, patrick.brown@wku.edu, 2707456247  
Hope Marchionda, hope.marchionda@wku.edu, 2707452961

**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

**2. Proposed course number: MATH 302**

**3. Rationale for revision of course number:**

MATH 225 was created in 2016 and is being taught for the first time in Spring 2017. During the development and implementation process, it became apparent to the creators and instructors of the course that the level of mathematics covered is commensurate with an upper division number. This course for Middle Grades Mathematics majors comprises content from both MATH 307 (Linear Algebra) and MATH 310 (Discrete Mathematics), and serves as the introductory course in advanced (upper division) mathematics in the same way that the pair of MATH 307 and 310 does for Mathematics majors. Because level of mathematics in this course exceeds that which would normally be expected in a lower division mathematics course, we propose to change the course number from MATH 225 to MATH 302.

**4. Proposed term for implementation: Fall 2017**

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

Department of Mathematics

**02/17/2017**

Ogden College Curriculum Committee

Professional Education Council

Undergraduate Curriculum Committee

University Senate

Proposal Date: February 17, 2017

**Ogden College  
Mathematics  
Proposal to Create a New Course  
(Action Item)**

Contact Person: Robin Ayers, [robin.ayers@wku.edu](mailto:robin.ayers@wku.edu), 270-745-5009

**1. Identification of proposed course:**

- 1.1 Course prefix (subject area) and number: MATH 123
- 1.2 Course title: Mathematical Applications for Business
- 1.3 Abbreviated course title: Mathematical Apps for Business
- 1.4 Credit hours: 3                      Variable credit No
- 1.5 Grade type: Standard Letter Grade
- 1.6 Prerequisites/corequisites: Math ACT score of 22 or better OR Math SAT score of 510 or better OR WKU Math Placement Exam score of 14 or better OR KYOTE score of 14 or better or DMA 096C with a grade of C or better.
- 1.7 Course description: Business applications of linear, quadratic, exponential and logarithmic functions, plus a brief introduction to probability, the mathematics of finance, and derivatives as they apply to problem-solving strategies in business-related fields.

**2. Rationale:**

- 2.1 Reason for developing the proposed course: After striving to create STEM and non-STEM tracks for students needing college algebra skills, it has been determined that students in the College of Business would benefit from a course that places emphasis on the application of mathematics to business-related topics. MATH 123 is designed to be a Colonnade course for business majors.
- 2.2 Projected enrollment in the proposed course: 100 per year, based on the need as determined by the College of Business
- 2.3 Relationship of the proposed course to courses now offered by the department: Although similar in algebra content to MATH 115 and MATH 116, the emphasis in MATH 123 will be on topics which support applications in business-related field. MATH 123 will also serve as a prerequisite for MATH 117.
- 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: MATH 1370 Business Applications of Algebra at Webster University, MATH 117 Math for Business at Lansing Community College, and MATH 1130 College Algebra for Business at Ohio State University

**3. Discussion of proposed course:**

- 3.1 Schedule type: L
- 3.2 Learning Outcomes: Students will be able to:
  - Understand the concepts of college algebra and be successful in manipulating expressions and equations involving polynomials, exponents and logarithms.

- Recognize the appropriate algebraic function, expression or equation (e.g. linear, quadratic, logarithmic or exponential) need to model a given business-related problem and then develop skill in applying such modeling.
- Determine when computations are needed and execute them appropriately.
- Apply concepts from the mathematics of finance and basic probability to business-related problems.
- Apply the basic concept of the derivative to maximizing and minimizing economic functions.
- Illustrate and communicate mathematical results symbolically, visually and/or numerically.

3.3 Content outline:

- Linear functions, equations, and inequalities with business applications
- Quadratic functions and equations with business applications
- Exponential functions and equations with business applications
- Logarithmic functions and equations with business applications
- Mathematics of finance with business applications
- Derivatives with business applications
- Introduction to probability with business applications

3.4 Student expectations and requirements: Students will complete assignments, quizzes, and exams.

3.5 Tentative texts and course materials: College Mathematics for Business, Economics, Life Sciences, and Social Sciences, Barnett, Ziegler, and Byleen (2015) 13<sup>th</sup> edition. Pearson ISBN: 978-0-321-94551-8

**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: Fall 2017**

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

Department of Mathematics

February 17, 2017

OCSE Curriculum Committee

Colonnade Committee

Undergraduate Curriculum Committee

University Senate

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