

MEMORANDUM TO: Ogden College of Science and Engineering Curriculum Committee

Ms. Robin Ayers
Dr. Ting-Hui Lee
Dr. Pat Kambesis
Dr. Phil Lienesch
Dr. Jeremy Maddox

Dr. Andy Mienaltowski
Dr. Les Pesterfield
Dr. Todd Willian
Mr. Jason Wilson

FROM: Dr. Stuart Burris, Chair

SUBJECT: Agenda for Thursday, November 19th at 4:00 p.m.

A. OLD BUSINESS:

- I. Consideration of the minutes of the October 22, 2020 meeting.

B. NEW BUSINESS:

Type of item	Description of Item & Contact Information
Information	The following proposals were submitted to the Provost via the expedited review process: Proposal to Revise Course Prerequisites/Corequisites: 1. CE 370, Construction Materials 2. CE 371, Construction Materials Lab 3. CE 410, Soil Mechanics 4. CE 412, Foundation Engineering
Consent	Proposal to Revise Course Special Requirements CE 461, Hydrology, 3 hrs. Contact: Jason Wilson, Jason.wilson@wku.edu , x2322
Consent	Proposal to Revise Course Prerequisite/Corequisites EE 431, Introduction to Power Systems, 3 hrs. Contact: Mark Cambron, mark.cambron@wku.edu , x8868
Consent	Proposal to Revise Course Prerequisites/Corequisites EE 479, Optoelectronics, 3 hrs. Contact: Mark Cambron, mark.cambron@wku.edu , x8868
Consent	Proposal to Revise Course Prerequisites/Corequisites ENGR 360, Systems Dynamics and Modeling, 3 hrs. Contact: Farhad Ashrafzadeh, farhad.ashrafzadeh@wku.edu , x5877
Action	Proposal to Revise a Program Ref. 318, Astronomy Minor, 20 hrs. Contact: Michael Carini, mike.carini@wku.edu , x6198
Action	Proposal to Revise a Program Ref. 534P/534, Civil Engineering Pre-Major/Civil Engineering Contact: Jason Wilson, Jason.wilson@wku.edu , x2322

C. OTHER BUSINESS

Members Present:

Ms. Robin Ayers
Dr. Ting-Hui Lee
Dr. Pat Kambesis
Dr. Phil Lienesch
Dr. Jeremy Maddox
Dr. Andy Mienaltowski
Dr. Les Pesterfield
Dr. Todd Willian
Mr. Jason Wilson

Guest:

Dr. Stacy Wilson
Dr. Huanjing Wang

FROM: Dr. Stuart Burris, Chair

The meeting was called to order at 4:00pm.

OLD BUSINESS:

Willian/Wilson moved to approve of the minutes of the September 2020 meeting. Approved as presented.

NEW BUSINESS:

Consent Agenda

Proposal to Suspend a Program: Ref. 435 Physics Minor was moved from the consent agenda to the action agenda by Mienaltowski. After some discussion, Willian/Ayers moved to approve. The final vote was 5 no and 4 yes, however, this proposal should have skipped this committee and gone through to the expedited process, so it will move forward to the Provost.

Ayers/Wilson moved to approve the Proposal to Revise Course Catalog Listing: CS 301. Motion approved.

Action Agenda

Agriculture Department

Mienaltowski/Willian moved to approve Proposal to Create a New Course: AGRO 459. Motion approved.

School of Engineering & Applied Sciences

Wilson/Willian moved to approve Proposal to Create a New Course: SEAS 175. Motion approved.

Wilson/Willian moved to approve Proposal to Create a New Course: SEAS 176. Motion approved.

Willian/Wilson moved to approve Proposal to Revise a Program: Ref. 518, Architectural Science. Motion approved.

Wilson/Willian moved to approve Proposal to Revise a Program: Ref. 555, Computer Information Technology. Motion approved.

Willian/Wilson moved to approve Proposal to Revise a Program: Ref. 533, Construction Management. Motion approved.

Ayers/Kambesis moved to approve Proposal to Revise a Program: Ref. 629/629P, Computer Science. Motion approved.

Willian/Wilson moved to approve Proposal to Revise a Program: Ref. 5007, Engineering Technology Management. Motion approved.

Wilson/Ayers moved to approve Proposal to Revise a Program: Ref. 5006, Manufacturing Engineering Technology. Motion approved.

OTHER BUSINESS:

Implementation date for Courseleaf has been moved to January 2021.

October 29, 2020

**Ogden College of Science and Engineering
School of Engineering and Applied Sciences
Proposal to Revise Course Special Requirements
(Consent Item)**

Contact Person: Jason Wilson, Jason.Wilson@wku.edu, 270-745-2322

1. Identification of course:

- 1.1 Course prefix (subject area) and number: CE 370
- 1.2 Course title: Construction Materials

2. Current special requirements:

- Prerequisite(s): (EM 302 or EM 303)
- Corequisite(s): CE 371

3. Proposed special requirements:

- Prerequisite(s): EM 222 and (EM 303 (may be taken concurrently))
- Corequisite(s): CE 371

4. Rationale for the revision of special requirements:

Changing prerequisite and corequisites to more appropriate courses.

5. Effect on completion of major/minor sequence:

None

6. Proposed term for implementation:

Fall 2021

7. Dates of prior committee approvals:

School of Engineering and Applied Sciences Director

Ogden College Dean

Provost

Stacy Wilson Digitally signed by Stacy Wilson
Date: 2020.11.04 12:27:51 -06'00'

Stuart Burris Digitally signed by Stuart Burris
Date: 2020.11.04 15:28:09 -06'00'

October 29, 2020

**Ogden College of Science and Engineering
School of Engineering and Applied Sciences
Proposal to Revise Course Special Requirements
(Consent Item)**

Contact Person: Jason Wilson, Jason.Wilson@wku.edu, 270-745-2322

1. Identification of course:

- 1.1 Course prefix (subject area) and number: CE 371
- 1.2 Course title: Construction Materials

2. Current special requirements:

- Prerequisite(s): (EM 302 or EM 303)
- Corequisite(s): CE 370

3. Proposed special requirements:

- Prerequisite(s): EM 222
- Corequisite(s): CE 370 and EM 303

4. Rationale for the revision of special requirements:

Changing prerequisite and corequisites to more appropriate courses.

5. Effect on completion of major/minor sequence:

None

6. Proposed term for implementation:

Fall 2021

7. Dates of prior committee approvals:

School of Engineering and Applied Sciences Director

Ogden College Dean

Provost

Stacy Wilson Digitally signed by Stacy Wilson
Date: 2020.11.04 12:08:31 -06'00'

Stuart Burris Digitally signed by Stuart Burris
Date: 2020.11.04 15:28:29 -06'00'

October 29, 2020

**Ogden College of Science and Engineering
School of Engineering and Applied Sciences
Proposal to Revise Course Special Requirements
(Consent Item)**

Contact Person: Jason Wilson, Jason.Wilson@wku.edu, 270-745-2322

1. Identification of course:

- 1.1 Course prefix (subject area) and number: CE 410
- 1.2 Course title: Soil Mechanics

2. Current special requirements:

Prerequisite(s): (EM 302 or EM 303) and GEOL 111 and GEOL 113
Corequisite(s): CE 411
Major Restriction(s): NONE

3. Proposed special requirements:

Prerequisite(s): (EM 302 or EM 303) and GEOL 111 and GEOL 113
Corequisite(s): CE 411
Major Restriction(s): Civil Engineering Majors (534) or permission of instructor

4. Rationale for the revision of special requirements:

To ensure civil engineering majors complete their pre-major status before their last semester. Will act as a warning for the students to complete their pre-major prior to their last semester.

5. Effect on completion of major/minor sequence:

None

6. Proposed term for implementation:

Fall 2021

7. Dates of prior committee approvals:

School of Engineering and Applied Sciences Director

Ogden College Dean

Provost

Stacy Wilson

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Wilson
Date: 2020.11.04 12:07:45
-06'00'

Stuart Burris

Digitally signed by Stuart Burris
Date: 2020.11.04 15:28:51 -06'00'

October 29, 2020

**Ogden College of Science and Engineering
School of Engineering and Applied Sciences
Proposal to Revise Course Special Requirements
(Consent Item)**

Contact Person: Jason Wilson, Jason.Wilson@wku.edu, 270-745-2322

1. Identification of course:

- 1.1 Course prefix (subject area) and number: CE 412
- 1.2 Course title: Foundation Engineering

2. Current special requirements:

Prerequisite(s): CE 410 and CE 411
Major Restriction(s): NONE

3. Proposed special requirements:

Prerequisite(s): CE 410 and CE 411
Major Restriction(s): Civil Engineering Majors (534)

4. Rationale for the revision of special requirements:

To ensure civil engineering majors complete their pre-major status before their last semester.

5. Effect on completion of major/minor sequence:

None

6. Proposed term for implementation:

Fall 2021

7. Dates of prior committee approvals:

School of Engineering and Applied Sciences Director

Ogden College Dean

Provost

Stacy Wilson
Digitally signed by Stacy
Wilson
Date: 2020.11.04 12:08:05
-06'00'

Stuart Burris
Digitally signed by Stuart Burris
Date: 2020.11.04 15:29:08 -06'00'

October 29, 2020

**Ogden College of Science and Engineering
School of Engineering and Applied Sciences
Proposal to Revise Course Special Requirements
(Consent Item)**

Contact Person: Jason Wilson, Jason.Wilson@wku.edu, 270-745-2322

1. Identification of course:

- 1.1 Course prefix (subject area) and number: CE 461
- 1.2 Course title: Hydrology

2. Current special requirements:

Prerequisite(s): MATH 331 and CE 160 and (CE 341 or CE 342)
Corequisite(s): CE 305

3. Proposed special requirements:

Prerequisite(s): MATH 331 and CE 160 and (CE 341 or CE 342) and (CE 305 (may be taken concurrently) or STAT 301 (may be taken concurrently))

4. Rationale for the revision of special requirements:

The intention was CE 305 to be taken as a prerequisite or a corequisite. Adding STAT 301 gives students another option.

5. Effect on completion of major/minor sequence:

None

6. Proposed term for implementation:

Fall 2021

7. Dates of prior committee approvals:

School of Engineering and Applied Sciences

Ogden College Curriculum Committee

Undergraduate Curriculum Committee

University Senate

11/6/2020

University Undergraduate Curriculum Proposal Checklist

Please complete the following checklist to ensure your proposal will proceed smoothly and efficiently. Include the checklist as a cover sheet with your proposal. Proposals without the checklist will be returned to the proponent.

- For new or revised programs, courses, or course descriptions, what departments/programs have been consulted concerning potential impact (e.g. to possible duplication or conflict, changed corequisite or prerequisite for equivalent courses, etc.)? Please provide names and dates for individuals consulted.

Dr. Bruce Kessler - Math Department (10/29/20)

- What are the potential budget implications for this proposal? If any additional staffing is required, how will it be funded? If not, how will current staffing accommodate the proposed course/program?

STAT 301 was already an option for students to take, but we are switching it to a required course for accreditation purposes.

- If you are proposing a new undergraduate program or changes to an existing undergraduate program, please include a new or updated four-year degree pathway.

- Has the proposal been checked carefully for mechanics, grammar, syntax, and clarity?

Stacy Wilson

Digitally signed by Stacy Wilson
Date: 2020.11.10 11:25:17
-06'00'

Department Head

Dean or Designee

Date

Date

Proposal Date:

**Ogden College
School of Engineering and Applied Sciences
Proposal to Revise Course Prerequisites/Corequisites
(Consent Item)**

Contact Person: Mark Cambron, mark.cambron@wku.edu, 745-8868

1. Identification of course:

- 1.1 Course prefix (subject area) and number: EE 431
- 1.2 Course title: Introduction to Power Systems

2. Current prerequisites/corequisites/special requirements:

Current prerequisites: EE 211, MATH 237, and EE 473

Current corequisites: none

3. Proposed prerequisites/corequisites/special requirements:

Proposed prerequisites: EE 211 and (EE 473 or PHYS 440)

Proposed corequisites: none

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

MATH 237 is a prerequisite class for EE 473 and PHYS 440. It does not need to be listed for EE 431.

Students that have successfully completed PHYS 440 will have sufficient coverage of topics in Electromagnetics to be prepared for EE 431.

5. Effect on completion of major/minor sequence: none

6. Proposed term for implementation: Fall 2021

7. Dates of prior committee approvals:

School of Engineering and Applied Sciences

Ogden College Curriculum Committee

Undergraduate Curriculum Committee

University Senate

11/6/2020

University Undergraduate Curriculum Proposal Checklist

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Dr. Bruce Kessler, Mathematics Department Chair, 11/6/2020

- What are the potential budget implications for this proposal? If any additional staffing is required, how will it be funded? If not, how will current staffing accommodate the proposed course/program?

NA

- If you are proposing a new undergraduate program or changes to an existing undergraduate program, please include a new or updated four-year degree pathway.

- Has the proposal been checked carefully for mechanics, grammar, syntax, and clarity?

Stacy Wilson

Digitally signed by Stacy Wilson
Date: 2020.11.10 11:40:05
-06'00'

Department Head

Dean or Designee

Date

Date

Proposal Date:

Ogden College
School of Engineering and Applied Sciences
Proposal to Revise Course Prerequisites/Corequisites
(Consent Item)

Contact Person: Mark Cambron, mark.cambron@wku.edu, 745-8868

1. Identification of course:

- 1.1 Course prefix (subject area) and number: EE 479
- 1.2 Course title: Optoelectronics

2. Current prerequisites/corequisites/special requirements:

Current prerequisites: EE 345 and EE 473
Current corequisites: none

3. Proposed prerequisites/corequisites/special requirements:

Proposed prerequisites: EE 345 and (EE 473 or PHYS 440)
Proposed corequisites: none

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

Students that have successfully completed PHYS 440 will have sufficient coverage of topics in Electromagnetics to be prepared for EE 479.

5. Effect on completion of major/minor sequence: none

6. Proposed term for implementation: Fall 2021

7. Dates of prior committee approvals:

School of Engineering and Applied Sciences	<u>11/6/2020</u>
Ogden College Curriculum Committee	_____
Undergraduate Curriculum Committee	_____
University Senate	_____

University Undergraduate Curriculum Proposal Checklist

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For new or revised programs, courses, or course descriptions, what departments/programs have been consulted concerning potential impact (e.g. to possible duplication or conflict, changed corequisite or prerequisite for equivalent courses, etc.)? Please provide names and dates for individuals consulted.

NA (EE 473 and PHYS 440 have been accepted as equivalent by EE program for some time).

What are the potential budget implications for this proposal? If any additional staffing is required, how will it be funded? If not, how will current staffing accommodate the proposed course/program?

NA

If you are proposing a new undergraduate program or changes to an existing undergraduate program, please include a new or updated four-year degree pathway.

Has the proposal been checked carefully for mechanics, grammar, syntax, and clarity?

Stacy Wilson

Digitally signed by Stacy Wilson
Date: 2020.11.10 11:37:00
-06'00'

Department Head

Dean or Designee

Date

Date

Proposal Date: 10/27/20

Ogden College
School of Engineering and Applied Sciences
Proposal to Revise Course Prerequisites/Corequisites
(Consent Item)

Contact Person: Farhad Ashrafzadeh, farhad.ashrafzadeh@wku.edu , 745-5877

1. Identification of course:

- 1.1 Course prefix (subject area) and number: ENGR 360
- 1.2 Course title: System Dynamics and Modeling

2. Current prerequisites/corequisites/special requirements:

Current prerequisites: EE 210 and MATH 331

Current corequisites: MATH 307 or MATH 370

3. Proposed prerequisites/corequisites/special requirements:

Proposed prerequisites: EE 210 and MATH 331

Proposed corequisites: none

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

The required background for MATH 307 or MATH 370 is minimal and it will be covered in one lecture during the course.

5. Effect on completion of major/minor sequence: none

6. Proposed term for implementation: Fall 2021

7. Dates of prior committee approvals:

School of Engineering and Applied Sciences

11/6/2020

Ogden College Curriculum Committee

Undergraduate Curriculum Committee

University Senate

University Undergraduate Curriculum Proposal Checklist

Please complete the following checklist to ensure your proposal will proceed smoothly and efficiently. Include the checklist as a cover sheet with your proposal. Proposals without the checklist will be returned to the proponent.

- For new or revised programs, courses, or course descriptions, what departments/programs have been consulted concerning potential impact (e.g. to possible duplication or conflict, changed corequisite or prerequisite for equivalent courses, etc.)? Please provide names and dates for individuals consulted.

Dr. Bruce Kessler, Mathematics Department Chair, 11/6/2020

- What are the potential budget implications for this proposal? If any additional staffing is required, how will it be funded? If not, how will current staffing accommodate the proposed course/program?

NA

- If you are proposing a new undergraduate program or changes to an existing undergraduate program, please include a new or updated four-year degree pathway.

- Has the proposal been checked carefully for mechanics, grammar, syntax, and clarity?

Stacy Wilson Digitally signed by Stacy Wilson
Date: 2020.11.10 11:38:30
-06'00'

Department Head

Dean or Designee

Date

Date

**Proposal to Revise a program
Ogden College of Science and Engineering
Physics and Astronomy**

Section 1: Proponent Contact Information

- 1.1 Name/Title: Michael Carini
- 1.2 Email address: mike.carini@wku.edu
- 1.3 Phone #56198

Section 2: Program Information

- 2.1 Current Program reference number: 318
- 2.2 Current Program title: Astronomy Minor
- 2.3 Current total number of credits required in the program: 20

Section 3: Proposed program revisions and rationales

The Comprehensive Academic Program Evaluation (CAPE) review process recommended the Astronomy Minor be transformed. Two options have been created, to be more explicit about how the astronomy minor might be attractive to students from a wide range of backgrounds. The expected outcome is that many more students will explore their interest in astronomy and relate it to their major field of study, resulting in an increase of the number of student persisting through the minor.

- 3.1 Revision and Rationale for expansion reflected in Option A: Recent advances in astronomy have created interdisciplinary connections, such as astrobiology, astrochemistry, astrostatistics, etc. The astronomy minor has previously attracted students seeking to earn any degree related to astronomy. The new elective choices presented with this option will attract new students and will make it more likely that those who initially declare an astronomy minor will complete the requirements.
- 3.2 Revision and Rationale for expansion reflected in Option B: This new path of study is designed for students pursuing degrees in disciplines other than science. Astronomy captures the interest of the public at large, and this option aims to attract new minors who might find themselves in a position to be communicating science, astronomy in particular, to the public. These students will not need advanced science skills, only a college level introduction to astronomy.

Section 4: Consultations

Do any of the proposed revisions in section 3 above involve or in any other way impact other departments/units? YES

3.1 Biology	Michael Smith	1/24/2020
3.1 Chemistry	Rui Zhang	1/24/2020
3.1 Mathematics	Bruce Kessler	1/24/2020
3.1 Earth, Environmental and Atmospheric Sciences	Fred Siewers	1/24/2020
3.1 SEAS	Stacy Wilson/Mark Camberon	1/24/2020
3.2 Communication	Helen Sterk	9/20/2020
3.2 Recreation Administration	Ron Ramsing/Raymond Poff	1/24/2020

Section 5: Proposed term for implementation: Fall 2021

Section 6: Approval Flow Dates:

Physics and Astronomy	21 October 2020
OCSE College Curriculum Committee:	_____
Professional Education Council:	_____ N/A _____
Undergraduate Curriculum Committee:	_____
University Senate:	_____

Section 7: Required Appendices: Current & proposed program descriptions

7.1 Current Program Description:

Minor in Astronomy

The minor in astronomy is designed to provide a background in astronomy, astrophysics, and planetary science for students from a wide range of backgrounds. Students who intend to undertake graduate work in astronomy should complete a major in physics with a minor in mathematics.

A minor in astronomy consists of at least 16 credit hours of required core courses and at least 4 credit hours from the list of restricted electives.

The core requirements are:

- ASTR 214 (4 hrs),
- ASTR 314 (4 hrs); and
- an introductory sequence of classical physics: PHYS 255 / PHYS 256 and PHYS 265 / PHYS 266 (10 hours); or PHYS 201 and PHYS 202 (8 hours); or PHYS 231 / PHYS 232 and PHYS 332 / PHYS 233 (8 hours).

Physics majors must substitute GEOL 111 / GEOL 113 for PHYS 255 / PHYS 256. The actual number of elective credit hours required for an astronomy minor is dependent upon satisfaction of the university requirement that at least one-half of the credits required for each major or minor be earned in courses numbered 300 and above.

The list of restricted electives includes: ASTR 305, ASTR 414, PHYS 316, PHYS 441 / PHYS 404, PHYS 445, PHYS 450, PHYS 465, GEOL 325, GEOL 330, GEOL 350, GEOL 370, GEOL 420 or GEOL 465.

7.2 Proposed Program Description

Minor in Astronomy

The minor in astronomy is designed to provide a background in astronomy for students from a wide range of backgrounds. Science majors can choose from a variety of specializations connecting to other fields (Option A below), such as astrobiology, astrochemistry, astrostatistics, or planetary science. Students in other disciplines may still obtain a firm grounding in basic astronomy and physics, supplemented with relevant courses from other fields (Option B below).

Option A: Required Courses (8)

ASTR 214 (4), ASTR 314 (4)

Option A: Electives (12)

Students choose a specialization area that interests them and take a minimum of two courses (at least 6 hours) from this area, plus enough other courses from the list of general elective courses to reach the 20 hour program option requirement.

Option A: Special Elective Courses (6+)

Astrophysics: ASTR 305 (3), ASTR 414 (4), PHYS 321 (3), PHYS 350 (3)

Astrochemistry: ASTR 305 (3), CHEM 340 (3), CHEM 342 (3), CHEM 420 (3),
CHEM 450 (3), CHEM 452 (3)

Astrobiology: ASTR 305 (3), BIOL 316 (3), BIOL 319 (3)

Astronomical Instrumentation: ASTR 305 (3), EE 445 (3), EE 479 (3)

Astrostatistics: ASTR 305 (3), STAT 301 (3), STAT 330 (3)

Planetary Science: ASTR 305 (3), GEOL 325 (3), GEOL 330 (4), GEOL 430 (3),
GEOL 465 (3), METR 438 (3), METR 439 (3)

Option A: General Elective Courses

ASTR 305 (3), ASTR 414 (4), PHYS 180 (3), PHYS 231 (3), PHYS 255 (4),
PHYS 265 (4), PHYS 321 (3), PHYS 332 (3), PHYS 465 (3)

Option B: Required Courses (10)

ASTR 314 (4)

choose two of: PHYS 103 (3), ASTR 104 (3), ASTR 106 (3)

Option B: Electives (9)

Students choose three unduplicated courses from the following list:

ASTR 104 (3), ASTR 106 (3), ASTR 305 (3), COMM 365 (3), PHYS 103 (3),
PHYS 489 (3), REC 434 (3)

Students may petition the department to replace one of the above elective courses with a different 3-hour course with a demonstrable connection to astronomy. The minor must include at least 10 credit hours at the 300 level or above.

7.1: Current Minor in Astronomy

Required courses	Credits	Notes
ASTR 214	4	
ASTR 314	4	
PHYS 255/256 and PHYS 265/266 or PHYS 201/PHYS 202 or PHYS 231/232 and PHYS 332/233	10	Physics majors substitute GEO111/112 for PHYS 255/256
	8	

Additional courses from the list of restricted electives to satisfy the university requirement of at least 50% of the credits earned are in courses numbered 300 or above

ASTR 305	3	
ASTR 414	4	
PHYS 316	3	
PHYS 441/PHYS 404	4	
PHYS 445	3	
PHYS 450	3	
PHYS 465	3	
GEOL 325	3	
GEOL 330	3	
GEOL 350	3	
GEOL 370	3	
GEOL 420	3	
GEOL 465	3	
Total required credits	20	

7.2: Proposed Minor in Astronomy

Required courses	Credits
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OPTION A

ASTR 214	4
ASTR 314	4

OPTION B

ASTR 314	4
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Students choose 2 courses from the following list: 6
ASTR 104, ASTR 106, PHYS 103

Electives:

OPTION A: Depending on the student's interest they choose a minimum of 2 courses from one of the following specializations totaling at least 6 hours plus courses from the list of general electives to reach the minimum 20 hour program requirement.

Astrophysics: ASTR 305, ASTR 414, PHYS 321, PHYS 350

Astrochemistry: ASTR 305, CHEM 340, CHEM 342, CHEM 420, CHEM 450, CHEM 452

Astrobiology: ASTR 305, BIOL 316, BIOL 319

Astronomical Instrumentation: ASTR 305, EE 445, EE 479

Astrostatistics: ASTR 305, STAT 301, STAT 330

Planetary Science: ASTR 305, GEOL 325, GEOL 330, GEOL 430, GEOL 465, METR 438, METR 439

General: ASTR 305, ASTR 414, PHYS 180, PHYS 231, PHYS 255, PHYS 265, PHYS 321, PHYS 332, PHYS 465

OPTION B:

Students choose 3 unduplicated courses from the following:

ASTR 104, ASTR 106, ASTR 305, COMM 365, PHYS 103, PHYS 389, REC 434

Students may petition the department to replace one of the above elective courses with a 3 hour course with a demonstrated connection to Astronomy. The minor must include at least 10 hours at the 300 level or above.

Total required credits: Option A: 20

Total required credits: Option B: 19

University Undergraduate Curriculum Proposal Checklist

Please complete the following checklist to ensure your proposal will proceed smoothly and efficiently. Include the checklist as a cover sheet with your proposal. Proposals without the checklist will be returned to the proponent.

- For new or revised programs, courses, or course descriptions, what departments/programs have been consulted concerning potential impact (e.g. to possible duplication or conflict, changed corequisite or prerequisite for equivalent courses, etc.)? Please provide names and dates for individuals consulted.

3.1 Biology, Michael Smith 1/24/2020 3.1 Chemistry, Rui Zhang 1/24/2020 3.1 Mathematics, Bruce Kessler 1/24/2020 3.1 EEAS, Fred Siewers 1/24/2020 3.1 SEAS, Stacy Wilson/Mark Cambron 1/24/2020 3.2 Communication, Helen Sterk 9/20/2020 3.2 Recreation Administration, Ron Ramsing/Raymond Poff 1/24/2020

- What are the potential budget implications for this proposal? If any additional staffing is required, how will it be funded? If not, how will current staffing accommodate the proposed course/program?

There are no potential budget implications. We will not be teaching any new courses under this revision, and we do not anticipate sufficiently large numbers in any courses in our department or other departments to necessitate additional sections.

- If you are proposing a new undergraduate program or changes to an existing undergraduate program, please include a new or updated four-year degree pathway.

- Has the proposal been checked carefully for mechanics, grammar, syntax, and clarity?

Carini, Michael

Digitally signed by Carini, Michael
DN: cn=Carini, Michael, o=Western Kentucky
University, ou=Physics and Astronomy,
email=mike.carini@wku.edu, c=US
Date: 2020.11.16 16:54:24 -06'00'

Department Head

Dean or Designee

Date

Date

Proposal to Revise a Program: Civil Engineering
Ogden College
Department/Unit: School of Engineering and Applied Sciences

Section 1: Proponent Contact Information

- 1.1 Jason C. Wilson, Instructor
- 1.2 Email address: Jason.Wilson@wku.edu
- 1.3 Phone # 270.745.2322

Section 2: Program Information

- 2.1 Current Program reference number: 534/534P
- 2.2 Current Program title: Civil Engineering/Civil Engineering Pre-major
- 2.3 Current total number of credits required in the program: 66

Section 3: Proposed program revisions and rationales

- 3.1 Delete CE 310 Strength of Materials Lab (1 credit hour) from "CE Program". Material is accomplished in another laboratory. Removing this course eliminates duplicates.
- 3.2 Move CE 305 from "CE Program Requirement" to "Other Requirments" CE 305 or STAT 301 will replace "Math/Science Elective Requirement" in "Other Requirments" category. CE 305 or STAT 301 will be required for ABET accreditation. (3 hours instead of 3-5 hours)
- 3.3 Add SEAS 175 & SEAS 176 as options for freshman design courses. (1-2 Hours instead of 1 hour)
- 3.4 Add CE 383 as alternative to CE 384. This allows some flexibility in the program course offerings to increase efficiency. Additionally, if a student elects to take both one will count as a "CE Tech Elective".
- 3.5 Add EM 313 as alternative to CE 352. This allows some flexibility in the program course offerings to increase efficiency. Additionally, if a student elects to take both one will count as a "CE Tech Elective".
- 3.6 Add CE 462 as alternative to CE 461. This allows some flexibility in the program course offerings to increase efficiency. Additionally, if a student elects to take both one will count as a "CE Tech Elective".

Section 4: Consultations

Do any of the proposed revisions in section 3 above involve or in any other way impact other departments/units? YES

Adding STAT 301 would impact the math department and Dr. Bruce Kessler was consulted about this change and agreed upon the change.

Section 5: Proposed term for implementation: Fall 2021

Section 6: Approval Flow Dates:

SEAS: **11/6/2020**

Ogden College Curriculum Committee:

Undergraduate Curriculum Committee:

University Senate:

Section 7: Required Appendices: Current & proposed program descriptions:
7.1 Current Program Requirement: 66 hours



CE Current Program		
Course	Course Title	Hrs.
CE 176 ME 176 EE 101	CE Fresh Design, ME Fresh Design, or EE Design I	1
CE 160	Prin. of Surveying	3
CE 161	Surveying Lab	1
CE 303	Constr. Management	3
CE 305	Risk Analysis	3
CE 310	Strengths Lab	1
CE 316	Equip. & Methods	3
CE 331	Transportation Eng.	3
CE 342	Fluid & Thermal Science	3
CE 352	Intro. to Environmental Engineering	3
CE 370	Materials of Construction	2
CE 371	Matls. of Constr. Lab	1
CE 382	Structural Analysis	3
CE 384	Civil Engineering Structural Design Course	3
CE 410	Soil Mechanics	3
CE 411	Soil Mechanics Lab	1
CE 412	Foundation Eng.	3
CE 461 OR CE 462	Hydrology OR Hydraulic Engineering	3
ENGR 490	Senior Design Seminar	2
ENGR 491	Senior Project	3
CE	Technical Elective*	3
CE	Technical Elective*	3
CE	Technical Elective*	3
AMS 163	Arch. Drafting	3
EM 222	Statics	3
EM 303	Mechanics of Deformable Bodies	3
TOTALS	Credit Hours	66

*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.

Other Requirements		
Course	Course Title	Hrs.
MATH 136	Calculus I	4

MATH 137	Calculus II	4
MATH 237	Multivariable Calculus	4
MATH 331	Differential Equations	3
PHYS 255	University Physics I	4
PHYS 256	Physics I Lab	1
	Science or Math Elective (See list below.)**	3-5
CHEM 120	College Chemistry I	3
CHEM 121	Chemistry I Lab	2
GEOL 111	The Earth	3
GEOL 113	The Earth Lab	1
TOTALS	Credit Hours	32-34

**Students are required to complete one set of Science or Math Electives.

CE Technical Electives		
Course	Course Title	Hrs.
CE 300	Floodplain Management	3
CE 378	Boundary Surveying	3
CE 379	Boundary Surveying. Lab	1
CE 380	Route Surveying	3
CE 381	Route Surveying Lab	1
CE 383	Structural Steel Design	3
CE 426	Adv. Construction Matls.	3
CE 432	Traffic Engineering	
CE 440	Masonry Construction	3
CE 444	Bridge Engineering	3
CE 461 OR CE 462	Hydrology OR Hydraulic Engineering	3
CE 474	Civil Eng. Design Project	1-3
CE 475	Sel. Topics in Civil Eng.	3
Additional CE Technical Electives		
AMS 305	Building Codes	3
AMS 325	Surv. of Building Systems	3
CM 363	Constr. Est. and Bidding	3
CM 400	Constr. Administration	3
CM 426	Construction Law	3
EM 313	Dynamics	3
ENGR 400	Systems Engineering	3
GISC 316	Fundamentals of GIS	4
GEOL 310	Global Hydrology	3
GEOL 415	Environmental Geology	3
GISC 317	Geog. Info. Systems	4
ME 220	Eng. Thermodynamics	3

MATH 350	Adv. Engineering Math	3
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CE Program:

Students must have a grade of "C" or better in:

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

7.2 Proposed Program Requirement: 62-63 hours

CE Current Program		
Course	Course Title	Hrs.
CE 176 OR ME 176 OR EE 101 OR SEAS 175 & SEAS 176	CE Fresh Design, OR ME Fresh Design, OR EE Design I, OR Freshman Experience I & Freshman Experience II	1-2
CE 160	Prin. of Surveying	3
CE 161	Surveying Lab	1
CE 303	Constr. Management	3
CE 305	Risk Analysis	3
CE 310	Strengths Lab	1
CE 316	Equip. & Methods	3
CE 331	Transportation Eng.	3
CE 342	Fluid & Thermal Science	3
CE 352 OR EM 313	Intro. to Environmental Engineering OR Dynamics	3
CE 370	Materials of Construction	2
CE 371	Matls. of Constr. Lab	1
CE 382	Structural Analysis	3
CE 383 OR CE 384	Civil Engineering Structural Design Course	3
CE 410	Soil Mechanics	3
CE 411	Soil Mechanics Lab	1
CE 412	Foundation Eng.	3
CE 461	Hydrology	3
ENGR 490	Senior Project I	2
ENGR 491	Senior Project II	3
CE	Technical Elective*	3
CE	Technical Elective*	3
CE	Technical Elective*	3
AMS 163	Arch. Drafting	3
EM 222	Statics	3
EM 303	Mechanics of Deformable Bodies	3
TOTALS	Credit Hours	62-63

*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.

Other Requirements		
Course	Course Title	Hrs.
MATH 136	Calculus I	4
MATH 137	Calculus II	4
MATH 237	Multivariable Calculus	4
MATH 331	Differential Equations	3
PHYS 255	University Physics I	4
PHYS 256	Physics I Lab	1
CE 305 OR STAT 301	Risk Analysis OR Probability/Applied Statistics	3-5
CHEM 120	College Chemistry I	3
CHEM 121	Chemistry I Lab	2
GEOL 111	The Earth	3
GEOL 113	The Earth Lab	1
TOTALS	Credit Hours	32

**Students are required to complete one set of Science or Math Electives.

CE Technical Electives		
Course	Course Title	Hrs.
CE 300	Floodplain Management	3
CE 378	Boundary Surveying	3
CE 379	Boundary Surveying. Lab	1
CE 380	Route Surveying	3
CE 381	Route Surveying Lab	1
CE 383 OR CE 384	Structural Steel Design OR Reinforced Concrete Design	3
CE 426	Adv. Construction Matls.	3
CE 432	Traffic Engineering	
CE 440	Masonry Construction	3
CE 444	Bridge Engineering	3
CE 462	Hydraulic Engineering	3
CE 474	Civil Eng. Design Project	1-3
CE 475	Sel. Topics in Civil Eng.	3
Additional CE Technical Electives		
AMS 305	Building Codes	3
AMS 325	Surv. of Building Systems	3
CM 363	Constr. Est. and Bidding	3
CM 400	Constr. Administration	3
CM 426	Construction Law	3
EM 313 OR CE 352	Dynamics OR Intro. to Environmental Engineering	3
ENGR 400	Systems Engineering	3
GISC 316	Fundamentals of GIS	4
GEOL 310	Global Hydrology	3
GEOL 415	Environmental Geology	3
GISC 317	Geog. Info. Systems	4
ME 220	Eng. Thermodynamics	3
MATH 350	Adv. Engineering Math	3

CE Program:

Students must have a grade of "C" or better in:

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



Civil Engineering

Ogden College of Science and Engineering
Western Kentucky University

A Suggested Four-Year Academic Degree Path

FIRST YEAR

FALL SEMESTER		SPRING SEMESTER	
CE176: CE Freshman Design	1	COMM145: Public Speaking	3
AMS163: Architectural Drafting	3	CE160/161: Surveying I and Lab	3/1
MATH136: Calculus I	4	MATH137: Calculus II	4
GEOL 111/113: The Earth and Lab	3/1	PHYS255/256: Physics I and Lab	4/1
ENG100: Intro to College Writing	3		
TOTAL CREDIT HOURS	15	TOTAL CREDIT HOURS	16

SECOND YEAR

FALL SEMESTER		SPRING SEMESTER	
CE303: Construction Mgmt.	3	CE 316: Equipment and Methods	3
ENG200: Intro to Literature	3	EM303: Mechanics of Deformable Solids	3
MATH237: Multivariable Calculus	4	MATH331: Differential Equations	3
EM222: Statics	3	CE305: Risk Analysis	3
Arts and Humanities Elective	3	CE 332: Transportation Engineering	3
TOTAL CREDIT HOURS	16	TOTAL CREDIT HOURS	15

THIRD YEAR

FALL SEMESTER		SPRING SEMESTER	
CE382: Structural Analysis	3	CE Technical Elective	3
Social and Behavioral Science Elective	3	CHEM120/121: College Chemistry I and Lab	3/2
CE342: Fluid Thermal Science	3	HIST101 or 102: World History	3
CE370/371: Materials of Const. and Lab	2/1	CE384: Reinforced Concrete	3
ENG300: Writing in Discipline Elective	3	CE461: Hydrology	3
TOTAL CREDIT HOURS	15	TOTAL CREDIT HOURS	17

FOURTH YEAR

FALL SEMESTER		SPRING SEMESTER	
CE410/411 Soil Mechanics and Lab	3/1	Connections: Social and Cultural Elective	3
CE Technical Elective	3	CE Technical Elective	3
ENGR490: Senior Design Seminar	2	CE498: Senior Project	3
CE352: Intro to Environmental Engineering	3	Connections: Local to Global	3
Connections: Systems Elective	3	CE412: Foundation Engineering	3
TOTAL CREDIT HOURS	15	TOTAL CREDIT HOURS	15

FOR ADDITIONAL INFORMATION, PLEASE CONTACT:

Department:	Civil Engineering Program Coordinator Mr. Jason Wilson
Phone:	270-745-2322

University Undergraduate Curriculum Proposal Checklist

Please complete the following checklist to ensure your proposal will proceed smoothly and efficiently. Include the checklist as a cover sheet with your proposal. Proposals without the checklist will be returned to the proponent.

- For new or revised programs, courses, or course descriptions, what departments/programs have been consulted concerning potential impact (e.g. to possible duplication or conflict, changed corequisite or prerequisite for equivalent courses, etc.)? Please provide names and dates for individuals consulted.

Math Department head, Dr. Bruce Kessler was consulted prior to 10/29/20 and again

- What are the potential budget implications for this proposal? If any additional staffing is required, how will it be funded? If not, how will current staffing accommodate the proposed course/program?

NONE

- If you are proposing a new undergraduate program or changes to an existing undergraduate program, please include a new or updated four-year degree pathway.
- Has the proposal been checked carefully for mechanics, grammar, syntax, and clarity?

Stacy Wilson Digitally signed by Stacy Wilson
Date: 2020.11.10 11:18:50
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Department Head

Dean or Designee

Date

Date