

MEMORANDUM TO: Ogden College of Science and Engineering Curriculum Committee

Dr. Taha Alyousef
Dr. Doug Harper
Dr. Michelle Jackson
Dr. Pat Kambesis
Dr. Phil Lienesch

Dr. Jeremy Maddox
Dr. Andy Mienaltowski
Dr. Les Pesterfield
Dr. Todd Willian

FROM: Stuart Burris, Chair

SUBJECT: Agenda for Thursday, March 26, 2020

A. OLD BUSINESS:

- I. Consideration of the minutes of the February 27, 2020 meeting.

B. NEW BUSINESS:

Type of item	Description of Item & Contact Information
Consent	Proposal to Revise Course Prerequisite/Corequisite MATH 307, Introduction to Linear Algebra, 3 hrs. Contact: Molly Dunkum, molly.dunkum@wku.edu
Action	Proposal to Revise a Program Ref. 528, Mathematics, Extended Major, 51 hrs. Contact: Molly Dunkum, molly.dunkum@wku.edu
Action	Proposal to Revise a Program Ref. 533, Construction Management, 81 hrs. Contact: Bashar Haddad, bashar.haddad@wku.edu , x3414
Action	Proposal to Revise a Program Ref. 738, Molecular Biotechnology, 89 or 90 hrs. Contact: Sigrid Jacobshagen, sigrid.jacobshagen@wku.edu , x5994

C. OTHER BUSINESS

Members Present:

Dr. Taha Alyousef
Dr. Michelle Jackson
Dr. Pat Kambesis
Dr. Phil Lienesch
Dr. Jeremy Maddox
Dr. Andy Mienaltowski

Dr. Todd Willian
Guest: Dr. Greg Goodrich
Guest: Dr. Peggy Gripshover
Guest: Dr. Royhan Gani
Guest: Dr. Chris Byrne

FROM: Stuart Burris, Chair

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

OLD BUSINESS:

Willian/Kambesis moved to approve of the minutes of the January 30, 2019 meeting. Motion passed.

NEW BUSINESS:

Consent Agenda

Maddox/Willian moved to approve the consent agenda. The consent agenda was approved unanimously.

Action Agenda

Agriculture & Food Science

Maddox/Kambesis moved to approve the Proposal to Make Multiple Revisions to a Course: HORT 340. Motion passed unanimously.

Maddox/Lienesch moved to approve Proposal to Revise a Program: Ref. 508, Agriculture Education. Motion passed unanimously with a few friendly amendments.

Geography & Geology Department

Maddox/Willian moved to approve the Proposal to Make Multiple Revisions to a Course: GEOG 480. Motion passed unanimously with a few friendly amendments.

Jackson/Willian moved to approve the Proposal to Create a New Course: GEOL 450. Motion passed unanimously.

Jackson/Willian moved to approve the Proposal to Create a New Course: METR 424. Motion passed unanimously.

Willian/Jackson moved to approve the Proposal to Create a New Course: METR 425. Motion passed unanimously with a few friendly amendments.

Willian/Maddox moved to approve the Proposal to Create a New Course: METR 430. Motion passed unanimously.

Maddox/Willian moved to approve the Proposal to Create a New Course: METR 475. Motion passed unanimously with a few friendly amendments.

Maddox/Jackson moved to approve the Proposal to Revise a Program: Meteorology. Motion passed unanimously with a few friendly amendments.

Psychological Sciences Department

Willian/Maddox moved to approve the Proposal to Create a New Course: PSYS 444. Motion passed unanimously.

Maddox/Mienaltowski moved to approve the Proposal to Revise a Program: Ref. 747 and 747E, Psychological Sciences. Motion passed unanimously.

School of Engineering and Applied Sciences

Willian/Jackson moved to approve the Proposal to make Multiple Revisions to a Course: ME 310. Motion passed unanimously.

Willian/Jackson moved to approve the Proposal to make Multiple Revisions to a Course: ME 333. Motion passed unanimously with a friendly amendment.

Harper/Willian moved to approve the Proposal to Revise Course Credit Hours: ME 325. Motion passed unanimously.

Willian/Jackson moved to approve the Proposal to Revise a Program: Ref. 543, Mechanical Engineering. Motion passed unanimously.

OTHER BUSINESS:

None.

Proposal Date: February 12, 2020

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

Contact Person: Molly Dunkum, molly.dunkum@wku.edu

1. Identification of course:

- 1.1 Course prefix (subject area) and number: MATH 307
- 1.2 Course title: INTRODUCTION TO LINEAR ALGEBRA

2. Current prerequisites/corequisites/special requirements:

MATH 137 [Min Grade: C] or MATH 136 [Min Grade: A] or MATH 142 [Min Grade: A]
OR
MATH 136 [Min Grade: C] and CS 221 [Min Grade: C]

3. Proposed prerequisites/corequisites/special requirements:

MATH 137 [Min Grade: C] or MATH 136 [Min Grade: A] or MATH 142 [Min Grade: A]
OR
MATH 136 [Min Grade: C] and CS 290 [Min Grade: C]

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

The revision in the CS portion of the course prerequisite is due to a change in sequencing and numbering by the Computer Science Division.

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

6. Proposed term for implementation: Fall 2021

7. Dates and Signatures of prior approvals

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

February 21, 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. Huanjing Wang, Undergrad. Program Coordinator for CS, 1/23/20

- 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?

There are no potential budget implications for this proposal.

- 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?



Department Head

Dean or Designee

2/25/2020
Date

Date

Proposal Date: February 12, 2020

**Proposal to Revise a program: Mathematics
Ogden College of Science & Engineering
Department of Mathematics**

1. Proponent Contact Information: Dr. Molly Dunkum, molly.dunkum@wku.edu

2. Program Information

2.1 Current Program reference number: 528

2.2 Current Program title: Mathematics, Extended Major

2.3 Current total number of credits required in the program: 51

3. Proposed program revisions and rationales

3.1 In the Computer Science requirement, change "CS 221 (4 hours)" to "CS 290 (4 hours)". This is due to a change in Computer Science course sequencing and numbering.

4. Consultations

The proposed revision in section 3 above does not involve or in any other way impact other departments/units.

5. Proposed term for implementation: Fall 2021

6. Approval Flow Dates:

Department of Mathematics

Ogden College Curriculum Committee

Undergraduate Curriculum Committee

University Senate

February 21, 2020

7.1. CURRENT Extended Mathematics Major

Required Courses (30 hrs): MATH 136 (4 hrs), MATH 137 (4 hrs), MATH 237 (4 hrs), MATH 307 (3 hrs), MATH 310 (3 hrs), MATH 317 (3 hrs), MATH 337 (3 hrs), MATH 431 (3 hrs), MATH 498 (3 hrs)

Two courses chosen from CS 180 (4 hours), **CS 221 (4 hours)**, STAT 330 (3 hours), MATH 371 (3 hours), PHYS 316 (3 hours), or PHYS 318 (3 hours) are required. If MATH 371 is selected to fulfill this requirement, it cannot also be used as an elective in the extended major.

The student is required to **complete a concentration** in one of the following areas:

- B1 – Fundamentals of Analysis and Discrete Mathematics
 - MATH 417, 439, 450
 - Two courses from MATH 315, 323, 415, 423, 473
 - Six additional elective hours from MATH 275 (up to 3 hours), STAT 301, MATH 305, 315, 323, 331, 370, 371 (if not used to satisfy the computer science requirement), 382, 398 (up to 3 hours), 405, 406, 409, 415, 423, 435, 470, 473, 475 (up to 6 hours), 482
- B2 – Fundamentals of Applied Mathematics
 - MATH 331, 370, 382, 405
 - Two courses from MATH 305, 406, 435, 470, 482
 - Three credit hours from MATH 275, STAT 301, MATH 305, 315, 323, 371 (if not used to satisfy the computer science requirement), 398, 406, 409, 415, 417, 423, 435, 439, 450, 470, 473, 475, 482
- B3 – Fundamentals of Mathematical Studies
 - MATH 450
 - Two courses from MATH 405, 406, 409, 415, 417, 423, 432, 435, 439, 470, 473, 482
 - Twelve additional electives from MATH 275 (up to 3 hours), STAT 301, MATH 305, 315, 323, 331, 370, 371 (if not used to satisfy the computer science requirement), 382, 398 (up to 3 hours), 405, 406, 409, 415, 423, 435, 470, 473, 475 (up to 6 hours), 482

With the approval of the mathematics department head, students may take certain 500-level mathematics courses for undergraduate credit in place of the courses listed in items B1, B2, and B3.

7.2. PROPOSED Extended Mathematics Major

Required Courses (30 hrs): MATH 136 (4 hrs), MATH 137 (4 hrs), MATH 237 (4 hrs), MATH 307 (3 hrs), MATH 310 (3 hrs), MATH 317 (3 hrs), MATH 337 (3 hrs), MATH 431 (3 hrs), MATH 498 (3 hrs)

Two courses chosen from CS 180 (4 hours), **CS 290 (4 hours)**, STAT 330 (3 hours), MATH 371 (3 hours), PHYS 316 (3 hours), or PHYS 318 (3 hours) are required. If MATH 371 is selected to fulfill this requirement, it cannot also be used as an elective in the extended major.

The student is required to **complete a concentration** in one of the following areas:

- B1 – Fundamentals of Analysis and Discrete Mathematics
 - MATH 417, 439, 450
 - Two courses from MATH 315, 323, 415, 423, 473
 - Six additional elective hours from MATH 275 (up to 3 hours), STAT 301, MATH 305, 315, 323, 331, 370, 371 (if not used to satisfy the computer science requirement), 382, 398 (up to 3 hours), 405, 406, 409, 415, 423, 435, 470, 473, 475 (up to 6 hours), 482
- B2 – Fundamentals of Applied Mathematics
 - MATH 331, 370, 382, 405
 - Two courses from MATH 305, 406, 435, 470, 482
 - Three credit hours from MATH 275, STAT 301, MATH 305, 315, 323, 371 (if not used to satisfy the computer science requirement), 398, 406, 409, 415, 417, 423, 435, 439, 450, 470, 473, 475, 482
- B3 – Fundamentals of Mathematical Studies
 - MATH 450
 - Two courses from MATH 405, 406, 409, 415, 417, 423, 432, 435, 439, 470, 473, 482
 - Twelve additional electives from MATH 275 (up to 3 hours), STAT 301, MATH 305, 315, 323, 331, 370, 371 (if not used to satisfy the computer science requirement), 382, 398 (up to 3 hours), 405, 406, 409, 415, 423, 435, 470, 473, 475 (up to 6 hours), 482

With the approval of the mathematics department head, students may take certain 500-level mathematics courses for undergraduate credit in place of the courses listed in items B1, B2, and B3.



BACHELOR of SCIENCE in MATHEMATICS (#528)

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

The suggested program of study shown below should be used in consultation with your advisor(s). Every student will finish with a unique plan of his/her own depending on the electives selected.

SAMPLE – Finish in Four Plan

FIRST YEAR			
Fall Semester		Spring Semester	
MATH 136 – Calculus I (F-Quantitative Reasoning)	4	MATH 137 - Calculus II	4
CS 180 – Computer Science I	4	CS 221 – Computer Science II OR STAT 330 – Intro to Statistical Software OR MATH 371 – Computational Problem Solving	3-4
ENG 100 – Introduction to College Writing (F-College Composition)	3	COMM 145 – Fundamentals of Public Speaking and Communication (F-Human Communication)	3
Colonnade (E-Natural & Physical Science, with lab)	3-5	HIST 101 – World History I OR HIST 102 – World History II (F-World History)	3
		Colonnade (E-Social & Behavioral Science)	3
TOTAL CREDIT HOURS	14-16	TOTAL CREDIT HOURS	16-17

SECOND YEAR			
Fall Semester		Spring Semester	
MATH 307 - Linear Algebra	3	MATH 237 – Multivariable Calculus	4
MATH 310 – Discrete Math	3	MATH Elective (300/400 level)*	3
ENG 200 – Introduction to Literature (F-Literary Studies)	3	Colonnade (E-Natural & Physical Sciences)	3
Colonnade (E-Arts & Humanities)	3	Colonnade (F-Writing in the Disciplines)	3
Foreign Language	3	General Elective	3
TOTAL CREDIT HOURS	15	TOTAL CREDIT HOURS	16

THIRD YEAR			
Fall Semester		Spring Semester	
MATH 317 – Intro to Algebraic Systems	3	MATH 337 – Elements of Real Analysis	3
Math Elective (300/400 level)*	3	MATH 417 – Algebraic Systems	3
Colonnade (C-Social & Cultural)	3	Colonnade (C-Local to Global)	3
Colonnade (C-Systems)	3	General Electives	6
General Elective	3		
TOTAL CREDIT HOURS	15	TOTAL CREDIT HOURS	15

FOURTH YEAR			
Fall Semester		Spring Semester	
MATH 431 – Intermediate Analysis	3	MATH 450 – Complex Variables	3
MATH 439 – Topology I	3	MATH 498 – Senior Seminar	3
Math Elective (300/400 level)*	3	Math Elective (300/400 level)*	3
General Electives	5	General Electives	3-6
TOTAL CREDIT HOURS	14	TOTAL CREDIT HOURS	12-15
TOTAL CREDIT HOURS		TOTAL CREDIT HOURS	

Total Credit Hours: 120

* Two courses from MATH 315, 323, 415, 423, 473. Six more hours from MATH 275 (up to 3 hours), STAT 301, MATH 305, 315, 323, 331, 370, 371 (if not taken instead of CS 211), 382, 398 (up to 3 hours), 405, 406, 409, 415, 423, 435, 470, 473, 475 (up to 6 hours), 482.

For more details and courses offered in the Colonnade General Education program visit the [website](#).

World Language Requirement: Language Proficiency of novice-high before completing 60 credit hours is required (or completion of 2nd level of a language). Two credits (or equivalent) of a single world language in High School satisfies this WKU requirement.

For more Information:

Department: Mathematics

Website: www.wku.edu/math

Phone: (270)745-3651

Email: math@wku.edu

Course Descriptions: <http://www.wku.edu/undergraduatecatalog/>

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. Huanjing Wang, Computer Science program, 01/23/2020.

- 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 for this proposal.

- 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?



Department Head

Dean or Designee

2/25/2020

Date

Date

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

Section 1: Proponent Contact Information

- 1.1 Bashar Haddad, Assistant Professor
- 1.2 Email address: Bashar.Haddad@wku.edu
- 1.3 Phone # 270.745.3414

Section 2: Program Information

- 2.1 Current Program reference number: 533
- 2.2 Current Program title: Construction Management
- 2.3 Current total number of credits required in the program: 81

Section 3: Proposed program revisions and rationales

- 3.1 Remove CM 346 as an elective in the CM program.
- 3.2 Add CM 346 as Core course requirement in the CM program. The CM 346 applied soil mechanics and foundations is an integral part for construction management . The soil testing before construction is first step and important step for many construction projects. Hence, it is imperative for the construction manager to understand and correctly interpret the soil report. Including the class as a core requirement will be an added value to CM graduates. The proposed class will be cross listed with CE 410 (soil mechanics)

Section 4: Consultations

Do any of the proposed revisions in section 3 above involve or in any other way impact other departments/units? NO

Section 5: Proposed term for implementation: Fall 2020

Section 6: Approval Flow Dates:

SEAS: **2/28/2020**

Ogden College Curriculum Committee:
Undergraduate Curriculum Committee:
University Senate:

Section 7: Required Appendices: Current & proposed program descriptions:

7.1 Current Program Requirement: 81 hours

Architectural Drafting	AMS 163	3
Industrial Material	AMS 217	3
Construction Methods and materials	AMS 261	3
Construction Lab	AMS 262	1
Industrial Statistics	AMS 271	3
Building Structures	AMS 282	3
Building Codes	AMS 305	3
Ergonomics abd Safety	AMS 310	3
Survey of Building Systems	AMS 325	3
Quality Assurance	AMS 371	3
Project Management	AMS 390	3
Lean Systems	AMS 394	3
Internship I	AMS 398	1
Technology Mgmt./Sup./Team Blding	AMS 430	3
Senior Research Construction Management	AMS 490B	3
Contract Documents	CM 250	3
Const. Estimating and Bidding	CM 363	3
Const. Scheduling	CM 462	3
Principles of Surveying	CE 160/CE 161 or AGMC170/AGMC171	3 or 4
Construction Management	CE 303	3
Equipment and Methods	CE 316	3
Introductory Accounting/Finance		3
Business Law		3
Intro Economics/principles of economics		3
Trigonometry	MATH 117	3
General electives		12 or 13
Colonnade		39
F-W1	ENG 100	3
F-W2	ENG 300	3
F-AH	ENG 200	3
F- OC	COMM 145	3
F-QR	MATH 117	3
F-SB	HIST 101 or HIST 102	3
E-AH	SELECT	3
E-SB	ECON 150 OR ECON 202 OR ECON 203	3
E-NS/SL	CHEM 105/106 or CHEM 120/121	6

	K-SC	SELECT	3
	K-LG	SELECT	3
	K-SY	SELECT	3
Program Grand Total Hours			120

7.2 Proposed Program Requirement: 81 hours

Architectural Drafting	AMS 163		3
Industrial Material	AMS 217		3
Construction Methods and materials	AMS 261		3
Construction Lab	AMS 262		3
Industrial Statistics	AMS 271		3
Building Structures	AMS 282		3
Building Codes	AMS 305		3
Ergonomics and Safety	AMS 310		3
Survey of Building Systems	AMS 325		3
Quality Assurance	AMS 371		3
Project Management	AMS 390		3
Lean Systems	AMS 394		3
Internship I	AMS 398		1
Technology Mgmt./Sup./Team Bldg	AMS 430		3
Quality Assurance	AMS371		3
Project Management	AMS390		3
Internship I	AMS398		1
Technology Mgmt./Sup./Team Bldg	AMS430		3
Senior Research Construction Management	AMS490B		3
Contract Documents	CM 250		3
Const. Estimating and Bidding	CM 363		3
Applied Soil Mechanics/Foundations	CM 346		3
Const. Scheduling	CM 462		3
Principles of Surveying	CE 160/CE 161 or AGMC170/AGMC171		3 or 4
Construction Management	CE 303		3
Equipment and Methods	CE 316		3
Introducotry Accounting/Finance			3
Business Law			3
Intor Economics/principles of economics			3
Trigonometry	MATH 117		3
General electives			9 or 10
Colonnade			39
	F-W1	ENG 100	3

F-W2	ENG 300	3
F-AH	ENG 200	3
F- OC	COMM 145	3
F-QR	MATH 117	3
F-SB	HIST 101 or HIST 102	3
E-AH	SELECT	3
E-SB	ECON 150 OR ECON 202 OR ECON 203	3
E-NS/SL	CHEM 105/106 or CHEM 120/121	6
K-SC	SELECT	3
K-LG	SELECT	3
K-SY	SELECT	3
Program Grand Total Hours		120



BACHELOR of SCIENCE in CONSTRUCTION MANAGEMENT (#533)

School of Engineering & Applied Sciences
 Ogden College of Science and Engineering
 Western Kentucky University

The suggested program of study shown below should be used in consultation with your advisor(s). Every student will finish with a unique plan of his/her own depending on the electives selected.

SAMPLE – Finish in Four Plan

FIRST YEAR			
Fall Semester		Spring Semester	
AMS 163 Architectural Drafting	3	CHEM 105/106 or 120/121: (E-NS, LS)	4-5
MATH 117 –Trigonometry or higher math class (Foundations)(F-QR)	3	Natural & Physical Sciences (E-NS)	3
ENG 100 Intro to College Writing (Foundation) (F-W1)	3	HIST 101 World History I OR HIST 102 World II (F-SB)	3
Arts & Humanities (E-AH)	3	Human Communication (F-OC)	3
Economics Elective* (E-SB)	3	Literary Studies (F-AH)	3
TOTAL CREDIT HOURS	15	TOTAL CREDIT HOURS	16-17

SECOND YEAR			
Fall Semester		Spring Semester	
AMS 282 Architectural Structures	3	World Language	3
AMS 310 Ergonomics and Safety	3	AMS 271: Industrial Statistics	3
CE 160/161 Surveying 1 (with a Lab)	4	AMS 261/262	4
AMS 217: Industrial Materials	3	CM 250 Contract Documents	3
Finance Elective*	3	General Elective	1-2
TOTAL CREDIT HOURS	16	TOTAL CREDIT HOURS	14-15

THIRD YEAR			
Fall Semester		Spring Semester	
CM 363 Construction Estimating and Bidding I	3	CE 316 Equipment & Methods	3
AMS 305 Building Codes	3	AMS 390 Project Management	3
CE 303 Construction Management	3	Business Law Elective*	3
AMS 394 Lean Systems	3	Connections: Social and Cultural (K-SC)	3
ENG 300 Writing in the Disciplines (F-W2)	3	Connections: Local to Global Course (K-LG)	3
TOTAL CREDIT HOURS	15	TOTAL CREDIT HOURS	15

FOURTH YEAR			
Fall Semester		Spring Semester	
AMS 430 Technology Mgt/Supervision	3	AMS 490 Senior Research	3
AMS 325 Survey of Building Systems	3	AMS 371 Quality Assurance	3

CM: 346: Applied Soil Mechanics	3	AMS 398 Internship	1
CM 462 Construction Scheduling	3	Connections: Systems (K-SY)	3
General Elective	3	General Elective	3
TOTAL CREDIT HOURS	15	TOTAL CREDIT HOURS	13

Total Credit Hours: 120

For more details and courses offered in the Colonnade General Education program visit the [website](#).

World Language Requirement: Language Proficiency of novice-high before completing 60 credit hours is required (or completion of 2nd level of a language). Two credits (or equivalent) of a single world language in High School satisfies this WKU requirement.

1. Accounting/Financial Elective: Choose one course from: ACCT 200, MKT 220, MKT 325, MKT 390, FIN 161, RE170C, BUS 100C, BUS 102C, BUS 110C BUS 250C, BUS 252C, ENT 312
2. Business Law Elective: Choose one course from: MGT 301, MGT 333, MGT 365
3. Economics Elective: Choose one course from: ECON 150, ECON 202, ECON 203, ECON 375, ECON 390, AGE 360, BUS 160C, BUS 212C

***PLEASE NOTE:** Prerequisites, Course Numbers, and Course Titles are subject to change. Consult your advisor each semester.*

For more Information:

School of Engineering and Applied Sciences

Website: www.wku.edu/seas

Phone: 270-745-3251

Email: seas@wku.edu

Course Descriptions: <http://www.wku.edu/undergraduatecatalog/>

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.

Civil Engineering program. Mr. Jason Wilson 1/29/2020

- 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?

The proposed class will be offered as a joint class with CE410 (soil mechanics)

- 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: 2020.03.19 17:24:00
-05'00'

Department Head

Dean or Designee

Date

Date

Proposal to Revise a program: BS in Molecular Biotechnology
Ogden College of Science and Engineering
Department/Unit: Department of Biology

Section 1: Proponent Contact Information

- 1.1 Name/Title: Sigrid Jacobshagen, Professor of Biology
- 1.2 Email address: sigrid.jacobshagen@wku.edu
- 1.3 Phone # 270-745-5994

Section 2: Program Information

- 2.1 **Classification of Instructional Program (CIP) reference number:** 738
- 2.2 **Current Program title:** BS in Molecular Biotechnology
- 2.3 **Current total number of credits required in the program:** 89 or 90

Section 3: Proposed program revisions and rationales

3.1 First and only proposed revision: Remove CHEM 342 (Organic Chemistry II) and its associated lab CHEM 343 (Organic Chemistry II Laboratory) as a supporting course.

Rationale: The Organic Chemistry II and Lab (CHEM 342/343) is not needed as supporting course to give the students a solid basis of organic chemistry. Students are already taking the Organic Chemistry I and Lab (CHEM 340/341), which provides enough content to better understand biochemistry- and molecular biology-related courses. In addition, Organic Chemistry I serves as prerequisite for the Biochemistry I lecture (BIOL 446/CHEM 446). Removing Organic Chemistry II and its lab allows students to better concentrate on the large number of biotechnology-related courses that are required for the major.

Section 4: Consultations:

The proposed revision in 3.1. concerns a chemistry lecture and its associated lab. The revision therefore also has some impact on the Chemistry Department.

Dr. Sigrid Jacobshagen, the person requesting this revision, and Dr. Ken Crawford, the former interim Biology Department Chair met with Dr. Stuart Burris, the former Chemistry Department Chair, on December 5, 2019 to discuss the proposed change. Present also were Dr. Michael Smith, the now Biology Department Chair and Dr. Rui Zhang, the now Chemistry Department chair.

Dr. Burris commented that he considered the requested change possibly too early to judge the impact of the Organic Chemistry II course, since the major is fairly new and with a relatively low number of students (ca. 15).

Section 5: Proposed term for implementation: Fall 2020

Section 6: Approval Flow Dates:

**Biology Department: 17 March 2020
 Ogdan College Curriculum Committee:
 Undergraduate Curriculum Committee:
 University Senate:**

Section 7: Required Appendices: Current & proposed program descriptions:

7.1: Current BS in Molecular Biotechnology

Required courses (45 hrs)	Credits	Notes
BIOL 120/121: Biological Concepts: Cells, Metabolism, and Genetics & Lab	4	
BIOL 122/123: Biological Concepts: Evolution, Diversity and Ecology & Lab	4	
BIOL 212: Genome Discovery and Exploration	2	
BIOL 226/227: Microbial Biology and Diversity & Lab	4	
BIOL 312: Bioinformatics	4	
BIOL 319/322: Introduction to Cellular and Molecular Biology & Lab	4	
BIOL 327/337: Genetics & Lab	4	
BIOL 350: Introduction to Recombinant Genetics	3	
BIOL 369: Cooperative Education in Biology or BIOL 399: Research Problems in Biology	3	Students choose BIOL 369 or 399
BIOL 382: Introduction to Biostatistics	3	
BIOL 388: Contemporary Issues in Biotechnology	5x0, 1x1	Students take the course 5 times for 0 hrs before taking it for 1 hr
BIOL 411: Cell Biology	3	
BIOL 446/447: Biochemistry I & Lab	5	
BIOL 489: Professional Aspects of Biology	1	
Elective Courses (10 hrs)		Students choose 10 additional hrs from the list of electives
BIOL 222/223: Plant Biology and Diversity & Lab or BIOL 224/225: Animal Biology and Diversity & Lab	4	
BIOL 316: Evolution	3	
BIOL 328: Immunology	4	
BIOL 330: Animal Physiology	3	
BIOL 331: Lab Animal Physiology	1.5	
BIOL 335: Neurobiology	3	
BIOL 400: Plant Physiology	4	
BIOL 403: Molecular Basis of Cancer	3	
BIOL 404: Electron Microscopy	4	
BIOL 407: Virology	3	
BIOL 412: Cell Biology Lab	1	
BIOL 420: Introduction to Toxicology	3	
BIOL 440: Developmental Genetics	3	
BIOL 464: Endocrinology		
BIOL 467: Biochemistry II	3	

BIOL 470: Pathogenic Microbiology	3	
BIOL 490: Plants as Alternative Therapeutics	3	
BIOL 495: Molecular Genetics	3	
BIOL 496: Plant Biotechnology	3	
Supporting Courses (34 or 35 hrs)	4	
MATH 117: Trigonometry or MATH 136: Calculus I		
CHEM 120/121: College Chemistry I & Lab	3 or 4	Students choose one of the two Math courses, with one counting 3 and the other 4 hrs
CHEM 222/223: College Chemistry II & Lab	5	
CHEM 340/341: Organic Chemistry I & Lab	5	
CHEM 342/343: Organic Chemistry II & Lab	5	
PHYS 231/232: Introduction to Physics and Biophysics I & Lab	5	
PHYS 332/233: Introduction to Physics and Biophysics II & Lab	4	
AMS 371: Quality Assurance or AMS 390: Project Management or AMS 430: Technology Management/Team Building	4	
Total required credits	3	Students choose one of AMS 371, 390 or 430
	89	
	or	
	90	

7.2: Proposed BS in Molecular Biotechnology

Required courses (45 hrs)	Credits	Notes
BIOL 120/121: Biological Concepts: Cells, Metabolism, and Genetics & Lab	4	
BIOL 122/123: Biological Concepts: Evolution, Diversity and Ecology & Lab	4	
BIOL 212: Genome Discovery and Exploration	2	
BIOL 226/227: Microbial Biology and Diversity & Lab	4	
BIOL 312: Bioinformatics	4	
BIOL 319/322: Introduction to Cellular and Molecular Biology & Lab	4	
BIOL 327/337: Genetics & Lab	4	
BIOL 350: Introduction to Recombinant Genetics	3	
BIOL 369: Cooperative Education in Biology or BIOL 399: Research Problems in Biology	3	Students choose BIOL 369 or 399
BIOL 382: Introduction to Biostatistics	3	
BIOL 388: Contemporary Issues in Biotechnology	5x0, 1x1	Students take the course 5 times for 0 hrs before taking it for 1 hr
BIOL 411: Cell Biology	3	

BIOL 446/447: Biochemistry I & Lab 5
 BIOL 489: Professional Aspects of Biology 1

Students choose 10 additional hrs from the list of electives

Elective Courses (10 hrs)

BIOL 222/223: Plant Biology and Diversity & Lab
 or BIOL 224/225: Animal Biology and Diversity & Lab 4
 BIOL 316: Evolution 3
 BIOL 328: Immunology 4
 BIOL 330: Animal Physiology 3
 BIOL 331: Lab Animal Physiology 1.5
 BIOL 335: Neurobiology 3
 BIOL 400: Plant Physiology 4
 BIOL 403: Molecular Basis of Cancer 3
 BIOL 404: Electron Microscopy 4
 BIOL 407: Virology 3
 BIOL 412: Cell Biology Lab 1
 BIOL 420: Introduction to Toxicology 3
 BIOL 440: Developmental Genetics 3
 BIOL 464: Endocrinology 3
 BIOL 467: Biochemistry II 3
 BIOL 470: Pathogenic Microbiology 3
 BIOL 490: Plants as Alternative Therapeutics 3
 BIOL 495: Molecular Genetics 3
 BIOL 496: Plant Biotechnology 4

Supporting Courses (29 or 30 hrs)


MATH 117: Trigonometry or MATH 136: Calculus I 3 or 4
 CHEM 120/121: College Chemistry I & Lab 5
 CHEM 222/223: College Chemistry II & Lab 5
 CHEM 340/341: Organic Chemistry I & Lab 5
 PHYS 231/232: Introduction to Physics and Biophysics I & Lab 4
 PHYS 332/233: Introduction to Physics and Biophysics II & Lab 4
 AMS 371: Quality Assurance or AMS 390: Project Management or AMS 430: Technology Management/Team Building 3

Students choose one of the two Math courses, with one counting 3 and the other 4 hrs

Students choose one of AMS 371, 390 or 430

Total required credits

**84
or
85**

	BACHELOR of SCIENCE in Molecular Biotechnology (#738) Biology Department Ogden College of Science and Engineering Western Kentucky University	
	The suggested program of study shown below should be used in consultation with your advisor(s). Every student will finish with a unique plan of his/her own depending on the electives selected. Successful continuation in the major requires completion of BIOL 120/121 and 122/123 with a "C" or higher.	

SAMPLE – Finish in Four Plan

FIRST YEAR			
Fall Semester		Spring Semester	
BIOL 120/121 or BIOL 122/123	4	BIOL 122/123 or 120/121	4
MATH 116 or higher	3	MATH 117 or higher	3
ENG 100	3	BIOL 312 Bioinformatics	4
BIOL 212 Genome Discovery	2	CHEM 120/121 College Chem I and Lab	5
BIOL 388* Contemporary Issues	0	BIOL 388* Contemporary Issues	0
COMM 145 Public Speaking	3		
TOTAL CREDIT HOURS	15	TOTAL CREDIT HOURS	16

SECOND YEAR			
Fall Semester		Spring Semester	
BIOL 226/227 Microbial Biology	4	BIOL 319/322 Intro to Cell/Molec and lab	4
BIOL 327/337 Genetics and Lab	4	BIOL 388* Contemporary Issues	0
BIOL 388* Contemporary Issues	0	BIOL 399 or 369**	1
CHEM 222/223 College Chem II and Lab	5	CHEM 340/341 Organic Chem I and lab	5
Colonnade Exploration: Social and Behavioral Science	3	ENG 200 Introduction to Literature	3
		HIST 101 or 102	3
TOTAL CREDIT HOURS	16	TOTAL CREDIT HOURS	16

THIRD YEAR			
Fall Semester		Spring Semester	
BIOL 388* Contemporary Issues	0	BIOL 350 Recomb Genetics	3
BIOL 399 or 369**	1	BIOL 382 Biostatistics	3
BIOL 446/447 Biochem I and Lab	5	BIOL 388* Contemporary Issues	0
BioTech Elective—see Molec Biotech Advisor	3	BIOL 399 or 369**	1
PHYS 231/232 Biophysics I and Lab	4	PHYS 322/233 Biophysics II and Lab	4
Colonnade Exploration: Arts & Humanities	3	Writing in Disciplines (ENGL 300 or PSYS 300 or GEOG 300 or COMM 200)	3
TOTAL CREDIT HOURS	16	TOTAL CREDIT HOURS	14

BACHELOR of SCIENCE in Molecular Biotechnology (#738) Finish in Four plan (2020-21)

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. Burris and Dr. Zhang (Chemistry) were consulted on 12/5/2019.

- 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?

Smith, Michael

Digitally signed by Smith, Michael
DN: cn=Smith, Michael, c=United States, ou=University of Maryland System, ou=College of Management and Information Systems, ou=CS
Date: 2020.03.18 09:38:17 -0500

Department Head

Dean or Designee

3/18/2020

Date

Date