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12/09/2019

EP.20.42
December 9, 2019

UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN SENATE
COMMITTEE ON EDUCATIONAL POLICY
(Final; Information)

EP.20.42 Report of Administrative Approvals through November 18, 2019

Senate committees are authorized to act for and in the name of the Senate on minor matters. Below is a listing of the administrative approvals the Senate Committee on Educational Policy approved at its meeting on November 18, 2019. Additional information for each approval is attached.

A. Undergraduate Programs

1. **BS in Bioengineering** – To the required Orientation and Professional Development courses, add BIOE 100, Bioengineering Freshman Seminar (1 hour). In the Bioengineering Technical Core courses, *remove* BIOE 220, Bioenergetics (3 hours) and BIOE 301, Introductory Biomechanics, and *add* BIOE 210, Linear Algebra for Biomedical Data Science (3 hours). BIOE 210 replaces BIOE 301, which has not been offered for the past four years. BIOE 100, an orientation course, has been offered as BIOE 199 for the past three years in its current format and has been found to be helpful for students in the discipline, so the department wishes to add this 1-hour course. Removal of BIOE 220 plus adding BIOE 100 nets two additional hours of free electives, thereby increasing the range of choices for students. There is no change to the total number of hours required for the major.

2. **BS in Aerospace Engineering** – *Remove* PHYS 213, Thermal Physics (2 hours), as a required core course and *add* AE 140, Aerospace Computer-Aided Design (2 hours) to the Aerospace Engineering Technical Core course requirements. There is considerable overlap between PHYS 213 and another required course in the curriculum, ME 200, Thermodynamics, and the departmental faculty determined students benefit most from ME 200. AE 140 is added to support student success throughout the curriculum, introducing CAD software early in the program which will help students with their senior design project, which relies on this software. There is no change to the total number of hours required for the major.

3. **Minor in Materials Science and Engineering** – Previously, students in the minor were to select an introductory course from several different areas, including Metals, Polymers, and Electronic Materials, and then to select a senior lab course and an "Advanced Area" course from a list. This revision allows more flexibility for students in that they may select 9 hours total from a list of approved courses (rather than a specific course from different, specified areas). Added to this list of courses from which students may select are MSE 404, Laboratory Studies in Materials Science and Engineering (1.5 hours); MSE 454, Mechanics of Polymers (3 hours); MSE 456, Mechanics of Composites (3 hours); MSE 466, Materials in Electrochem Syst (3 hours); MSE 474, Biomaterials and Nanomedicine (3 hours); MSE 487, Materials for Nanotechnology (3 hours); MSE 488, Optical Materials (3 hours); and MSE 489, Matl Select for Sustainability (3 hours). These changes do not alter the total number of hours required for the minor.

4. **BA in Dance** – Add DANC 125, Black Dances of Resistance (3 hours), to the list of elective options for the major's Theory/Pedagogy/History course requirement, from which students are to select 12 hours from a list of courses. This increases the range of options for students and does not change the total number of hours required for the major.

5. **BS in Crop Sciences** – In the Horticultural Food Systems concentration, remove HORT 298, Undergraduate Seminar (1 to 3 hours) from the list of courses from which students select 15 hours of focus area electives. This course has been deactivated by the Department of Crop Sciences effective Fall, 2019. Seventeen courses remain in this list from which students can select, and there is no change to the total number of hours required for the concentration or for the major.

Date Submitted: 10/15/19 4:08 pm

Viewing: **10KP0408BS : Bioengineering, BS**

Last approved: 08/12/19 8:35 am

Last edit: 11/15/19 8:28 am

Changes proposed by: Maddie Darling

Catalog Pages Using this Program	Bioengineering, BS

In Workflow

1. **U Program Review**
2. **1343 Head**
3. **KP Committee Chair**
4. **KP Dean**
5. **University Librarian**
6. **Provost**
7. **Senate EPC**
8. Senate
9. U Senate Conf
10. Board of Trustees
11. IBHE
12. DMI

Approval Path

1. 10/15/19 4:19 pm
   Deb Forgacs (dforgacs):
   Approved for U Program Review
2. 10/15/19 5:38 pm
   Greg Underhill (gunderhi):
   Approved for 1343 Head
3. 11/13/19 7:54 am
   Brooke Newell (bsnewell):
   Approved for KP Committee Chair
4. 11/13/19 10:35 am
   Candy Deaville (candyd):
   Approved for KP Dean
5. 11/13/19 11:58 am
   John Wilkin

(jpwilkin): Approved for University Librarian
6. 11/14/19 8:57 am Kathy Martensen (kmartens): Approved for Provost

History

1. Dec 13, 2018 by Deb Forgacs (dforgacs)
2. Apr 9, 2019 by Deb Forgacs (dforgacs)
3. Jul 23, 2019 by Brooke Newell (bsnewell)
4. Jul 31, 2019 by Deb Forgacs (dforgacs)
5. Aug 12, 2019 by Deb Forgacs (dforgacs)

Proposal Type

Proposal Type:

This proposal is for a:
Revision

Proposal Title:

if this proposal is one piece of a multi-element change please include the other impacted programs here. *example: A BS revision with multiple concentration revisions*

Administrative approval: Revising UG Courses ~~UG Lists Approval.~~

Is this program available on campus and online? **No**

Official Program Name	Bioengineering, BS
Banner/Codebook Name	BS:Bioengineering - UIUC
Program Code:	10KP0408BS

Major Code	Minor Code	Conc Code	Degree Code
0408			BS

EP Control Number	**EP.20.42**
Senate Approval Date	
Senate Conference Approval Date	
BOT Approval Date	
IBHE Approval Date	
Effective Date:	
Effective Catalog Term	Fall 2020
Sponsor College	Grainger College of Engineering
Sponsor Department	Bioengineering

Sponsor Name	Sponsor Email
College Contact	College Contact Email

Is this program interdisciplinary?

No

Academic Level	Undergraduate
CIP Code	140501 - Bioengineering and Biomedical Engineering.

Program Description and Justification

Justification for proposal change:

(1) remove BIOE 220 from the program requirement, to be replaced with 2 hours of free electives
(2) replace BIOE 301 with BIOE 210 as a program requirement; BIOE 301 has not been offered for the past 4 years
(3) Add BIOE 100 as a program requirement; the orientation course has been offered as BIOE 199 and 100 for the past 3 years in its current format, this will become a required course in our program

Is This a Teacher Certification Program?

No

Will specialized accreditation be sought for this program?

No

Admission Requirements

Enrollment

Describe how this revision will impact enrollment and degrees awarded.

N/A

Estimated Annual Number of Degrees Awarded

Year One Estimate	5th Year Estimate (or when fully implemented)

Delivery Method

This program is available:
Face-to-Face

Budget

Are there budgetary implications for this revision?	No

Will the program or revision require staffing (faculty, advisors, etc.) beyond what is currently available?

No

Additional Budget Information

Attach File(s)

Resource Implications

Facilities

Will the program require new or additional facilities or significant improvements to already existing facilities?

No

Technology

Will the program need additional technology beyond what is currently available for the unit?

No

Non-Technical Resources

Will the program require additional supplies, services or equipment (non-technical)?

No

Resources

Faculty Resources

Please address the impact on faculty resources including any changes in numbers of faculty, class size, teaching loads, student-faculty ratios, etc. Describe how the unit will support student advising, including job placement and/or admission to advanced studies.

No, the courses are currently being taught (BIOE 100, 210) and the courses are included in their existing teaching loads. BIOE 220 being removed from the program will not require additional resources.

Library Resources

Describe your proposal's impact on the University Library's resources, collections, and services. If necessary please consult with the appropriate disciplinary specialist within the University Library.

None, textbooks are not required through these courses - instructors provide the materials necessary.

Instructional Resources

Will there be any reduction in other course offerings, programs or concentrations by your department as a result of this new program/proposed change?

No

Does this new program/proposed change result in the replacement of another program?

No

Does the program include other courses/subjects impacted by the creation/revision of this program?

No

Financial Resources

How does the unit intend to financially support this proposal?

Will the unit need to seek campus or other external resources?

No

Attach letters of support

Will an existing tuition rate be used or continue to be used for this program?

Yes

Program Regulation

Describe how the program is aligned with or meets licensure, certification, and/or entitlement requirements, if applicable.

Briefly describe the plan to assess and improve student learning, including the program's learning objectives; when, how, and where these learning objectives will be assessed; what metrics will be used to signify student's achievement of the stated learning objectives; and the process to ensure assessment results are used to improve student learning.

Is the career/profession for graduates of this program regulated by the State of Illinois?

No

Program of Study

"Baccalaureate degree requires at least 120 semester credit hours or 180 quarter credit hours and at least 40 semester credit hours (60 quarter credit hours) in upper division courses" (source: https://www.ibhe.org/assets/files/PrivateAdminRules2017.pdf). For proposals for new bachelor's degrees, if this minimum is not

explicitly met by specifically-required 300- and/or 400-level courses, please provide information on how the upper-division hours requirement will be satisfied.

All proposals must attach the new or revised version of the Academic Catalog program of study entry. Contact your college office if you have questions.

Revised programs ~~ep1413 (BioE revision).pdf~~

BIOE side-by-side 10 15 2019.xlsx

Attach a side-by-side comparison with the existing program AND, if the revision references or adds "chose-from" lists of courses students can select from to fulfill requirements, a listing of these courses, including the course rubric, number, title, and number of credit hours.

Catalog Page Text

Catalog Page Text: Description of program for the catalog page. This is not official content, it is used to help build the catalog pages for the program. Can be edited in the catalog by the college or department.

Statement for Programs of Study Catalog

Overview of Curricular Requirements

The curriculum requires 128 hours for graduation and is organized as shown below.

Orientation and Professional Development

These courses introduce the opportunities and resources your college, department, and curriculum can offer you as you work to achieve your career goals. They also provide the skills to work effectively and successfully in the engineering profession.

Course List

Code	Title	Hours
ENG 100	Engineering Orientation	0
BIOE 100	**Bioengineering Freshman Seminar**	**1**
BIOE 120	Introduction to Bioengineering	1
Total Hours		2

Foundational Mathematics and Science

These courses stress the basic mathematical and scientific principles upon which the engineering discipline is based.

Course List

Code	Title	Hours
CHEM 102	General Chemistry I	3
CHEM 103	General Chemistry Lab I	1
CHEM 104	General Chemistry II	3
CHEM 105	General Chemistry Lab II	1
MATH 221	Calculus I 1	4
MATH 231	Calculus II	3

Code	Title	Hours
MATH 241	Calculus III	4
MATH 285	Intro Differential Equations	3
PHYS 211	University Physics: Mechanics	4
PHYS 212	University Physics: Elec & Mag	4
Total Hours		30

Bioengineering Technical Core

These courses stress fundamental concepts and basic laboratory techniques that comprise the common intellectual understanding of bioengineering.

Course List

Code	Title	Hours
BIOE 201	Conservation Principles Bioeng	3
BIOE 202	Cell & Tissue Engineering Lab	2
BIOE 205	Signals & Systems in Bioengrg	3
BIOE 206	Cellular Bioengineering	3
~~BIOE 220~~	~~Bioenergetics~~	~~3~~
~~BIOE 301~~	~~Introductory Biomechanics~~	~~3~~
BIOE 210	**Linear Algebra for Biomedical Data Science**	**3**
BIOE 302	Modeling Human Physiology	3
BIOE 303	Quantitative Physiology Lab	2
BIOE 310	Comp Tools Bio Data	3
BIOE 360	Transport & Flow in Bioengrg	3
BIOE 414	Biomedical Instrumentation	3
BIOE 415	Biomedical Instrumentation Lab	2
BIOE 420	Intro Bio Control Systems	3
BIOE 435	Senior Design I	2
BIOE 436	Senior Design II	2
BIOE 476	Tissue Engineering	3
CHEM 232	Elementary Organic Chemistry I 2	4
CS 101	Intro Computing: Engrg & Sci	3
MCB 150	Molec & Cellular Basis of Life	4
Total Hours		51

Track Electives

Students must complete 15 hours of engineering study which show coherence, focus, and purpose within a bioengineering context. Students may choose from among the following pre-approved tracks:

Biomechanics
Cell and Tissue Engineering
Computational and Systems Biology
Imaging and Sensing
Therapeutics Engineering

Alternately a student may devise a special track and set of courses which must be approved by the Bioengineering Department. In either case, overage hours in required courses may be counted toward the 15-hour minimum.

Course List

Code	Title	Hours
Track electives selected from a departmentally approved list of track elective courses.		15
Biomechanics Track		
List of Pre-Approved Biomechanics Track Required Courses		
TAM 211	Statics	3
TAM 212	Introductory Dynamics	3
TAM 251	Introductory Solid Mechanics	3
List of Pre-Approved Biomechanics Electives to choose remaining hours from:		
BIOE 461	Cellular Biomechanics	4
BIOE 498	Special Topics (Surgical Techniques)	3
BIOE 498	Special Topics (Finite Element Methods in Biomedicine)	3
ME 330	Engineering Materials	4
ME 481	Whole-Body Musculoskel Biomech	3
ME 482	Musculoskel Tissue Mechanics	3
ME 483	Mechanobiology	4
NPRE 498	Special Topics (Advanced Risk Analysis)	3
SE 402	Comp-Aided Product Realization	3
SE 423	Mechatronics	3
TAM 445	Continuum Mechanics	4
TMGT 461	Tech, Eng, & Mgt Final Project	2
Pre-Approved Biomechanics Track recommended free elective		
SE 101	Engineering Graphics & Design	3
Cell and Tissue Engineering Track		
BIOE 306	Biofabrication Lab	3
BIOE 416	Biosensors	3
BIOE 424	Modeling for Angiogenesis	3
BIOE 430	Intro Synthetic Biology	3
BIOE 460	Gene Editing Lab	3
BIOE 461	Cellular Biomechanics	4
BIOE 487	Stem Cell Bioengineering	3
BIOE 498	Special Topics (Finite Element Methods in Biomedicine)	3
CHBE 471	Biochemical Engineering	3
CHBE 472	Techniques in Biomolecular Eng	3
IE 330	Industrial Quality Control	3
MSE 404	Laboratory Studies in Materials Science and Engineering	1.5
MSE 470	Design and Use of Biomaterials	3
MSE 474	Biomaterials and Nanomedicine	3
ME 483	Mechanobiology	4
TMGT 461	Tech, Eng, & Mgt Final Project	2
Recommended Free Elective		
MCB 450	Introductory Biochemistry	3
Therapeutics Engineering Track		
ABE 446	Biological Nanoengineering	3
BIOE 306	Biofabrication Lab	3
BIOE 424	Modeling for Angiogenesis	3
BIOE 430	Intro Synthetic Biology	3

Code	Title	Hours
BIOE 460	Gene Editing Lab	3
BIOE 477	Imaging and Therapeutic Probes	3
BIOE 479	Cancer Nanotechnology	3
BIOE 498	Special Topics (Preclinical Molecular Imaging)	3
CHBE 472	Techniques in Biomolecular Eng	3
ECE 481	Nanotechnology	4
MSE 403	Synthesis of Materials	3
MSE 404	Laboratory Studies in Materials Science and Engineering	1.5
MSE 450	Polymer Science & Engineering	3
MSE 470	Design and Use of Biomaterials	3
MSE 473	Biomolecular Materials Science	3
MSE 474	Biomaterials and Nanomedicine	3
MSE 480	Surfaces and Colloids	3
TMGT 461	Tech, Eng, & Mgt Final Project	2
Computational and Systems Biology Track		
CS 101	Intro Computing: Engrg & Sci (CS 125 may be taken instead of CS 101. Student must complete curriculum modification form with department advisor)	3
ABE 440	Applied Statistical Methods I	4
BIOE 424	Modeling for Angiogenesis	3
BIOE 430	Intro Synthetic Biology	3
BIOE 498	Special Topics (Finite Element Methods in Biomedicine)	3
CS 225	Data Structures	4
CS 398	Special Topics (Deep Learning)	3
CS 411	Database Systems	3
CS 412	Introduction to Data Mining	3
CS 440	Artificial Intelligence	3
CS 465	User Interface Design	3
CS 466	Introduction to Bioinformatics	3
ECE 490	Introduction to Optimization	3
IE 310	Deterministic Models in Optimization	3
IE 370	Stochastic Processes and Applications	3
NPRE 498	Special Topics (Advanced Risk Analysis)	3
SE 423	Mechatronics	3
TMGT 461	Tech, Eng, & Mgt Final Project	2
Imaging and Sensing		
ECE 210	Analog Signal Processing	4
ECE 329	Fields and Waves I	3
and select remaining hours from:		
BIOE 477	Imaging and Therapeutic Probes	3
BIOE 498	Special Topics (Surgical Techniques)	3
BIOE 498	Special Topics (Preclinical Molecular Imaging)	3
ECE 310	Digital Signal Processing	3
ECE 311	Digital Signal Processing Lab	1
ECE 380	Biomedical Imaging	3
ECE 416	Biosensors	3

Code	Title	Hours
ECE 460	Optical Imaging	4
ECE 467	Biophotonics	3
ECE 473	Fund of Engrg Acoustics	3
ECE 480	Magnetic Resonance Imaging	3
ME 487	MEMS-NEMS Theory & Fabrication	4
NPRE 498	Special Topics (Advanced Risk Analysis)	3
SE 423	Mechatronics	3
TMGT 461	Tech, Eng, & Mgt Final Project	2
Recommended Free Elective		
CHEM 442	Physical Chemistry I	4

General Education Requirements

Course List

Code	Title	Hours
A minimum of six courses is required, as follows:		18
Social and Behavioral Sciences		6
Humanities & the Arts		6
The Grainger College of Engineering Liberal Education course list, or from the campus General Education lists for Social and Behavioral Sciences or Humanities and the Arts		6
Cultural Studies: Non-Western Cultures (1 course)		
Cultural Studies: U.S. Minorities Cultures (1 course)		
Cultural Studies: Western/Comparative Cultures (1 course)		

Non-Primary Language Requirement

Course List

Code	Title	Hours
Completion of the third semester or equivalent of a non-primary language is required. Completion of three years of a single language in high school satisfies this requirement.		0-9

University Composition

These courses teach fundamentals of expository writing.

Course List

Code	Title	Hours
Choose one:		4-6
RHET 105	Writing and Research	
CMN 111	Oral & Written Comm I	
& CMN 112	and Oral & Written Comm II	
ESL 111	Intro to Academic Writing I	
& ESL 112	and Intro to Academic Writing II	
ESL 115	Principles of Academic Writing	

Advanced Composition May be satisfied by completing a course in either the liberal education or free elective categories which has the Advanced Composition designation.

Free Electives

Course List

Code	Title	Hours
Free Electives		

Code	Title	Hours
	Free electives. Additional unrestricted course work, subject to certain exceptions as noted by the College, so that there are at least 128 credit hours earned toward the degree.	8
Total Hours of Curriculum to Graduate		128

1 MATH 220 *may be substituted, with four of the five credit hours applying toward the degree.* MATH 220 *is appropriate for students with no background in calculus.*

2 *May be taken for 3 or 4 credit hours; the extra hour may be used to help meet free elective requirements.*

EP Documentation

Attach
Rollback/Approval
Notices

DMI Documentation

Attach Final
Approval Notices

Attached
Document

Justification for
this request

Program Reviewer
Comments

Kathy Martensen (kmartens) (11/15/19 8:28 am): Admin approval: Does not change total # of hrs. req'd; does not restrict options for students.

Key: 112

Key

GREEN HIGHLIGHT = Course addition or updated hours

RED HIGHLIGHT = Course has been removed due to it no longer being offered to on-campus students.

Current Requirement	Current Hours	Revised Requirements	Revised Hours
Orientation and Professional Development	**1**	**Orientation and Professional Development**	**2**
ENG 100: Engineering Orientation	0	ENG 100: Engineering Orientation	0
		BIOE 100: Bioengineering Freshmen Seminar	1
BIOE 120: Introduction to Bioengineering	1	BIOE 120: Introduction to Bioengineering	1
Foundational Mathematics and Science	**30**	**Foundational Mathematics and Science**	**30**
CHEM 102: General Chemistry I	3	CHEM 102: General Chemistry I	3
CHEM 103: General Chemistry Lab I	1	CHEM 103: General Chemistry Lab I	1
CHEM 104: General Chemistry II	3	CHEM 104: General Chemistry II	3
CHEM 105: General Chemistry Lab II	1	CHEM 105: General Chemistry Lab II	1
MATH 221: Calculus I 1	4	MATH 221: Calculus I 1	4
MATH 231: Calculus II	3	MATH 231: Calculus II	3
MATH 241: Calculus III	4	MATH 241: Calculus III	4
MATH 285: Intro Differential Equations	3	MATH 285: Intro Differential Equations	3
PHYS 211: University Physics: Mechanics	4	PHYS 211: University Physics: Mechanics	4
PHYS 212: University Physics: Elec & Mag	4	PHYS 212: University Physics: Elec & Mag	4
Bioengineering Technical Core	**54**	**Bioengineering Technical Core**	**51**
BIOE 201: Conservation Principles Bioeng	3	BIOE 201: Conservation Principles Bioeng	3
BIOE 202: Cell & Tissue Engineering Lab	2	BIOE 202: Cell & Tissue Engineering Lab	2
BIOE 205: Signals & Systems in Bioengrg	3	BIOE 205: Signals & Systems in Bioengrg	3
BIOE 206: Cellular Bioengineering	3	BIOE 206: Cellular Bioengineering	3
		BIOE 210: Linear Algebra for Biomedical Data Science	3
BIOE 220: Bioenergetics	3	**BIOE 220: Bioenergetics**	3
BIOE 301: Introductory Biomechanics	3	**BIOE 301: Introductory Biomechanics**	3
BIOE 302: Modeling Human Physiology	3	BIOE 302: Modeling Human Physiology	3
BIOE 303: Quantitative Physiology Lab	2	BIOE 303: Quantitative Physiology Lab	2
BIOE 310: Comp Tools Bio Data	3	BIOE 310: Comp Tools Bio Data	3
BIOE 360: Transport & Flow in Bioengrg	3	BIOE 360: Transport & Flow in Bioengrg	3
BIOE 414: Biomedical Instrumentation	3	BIOE 414: Biomedical Instrumentation	3
BIOE 415: Biomedical Instrumentation Lab	2	BIOE 415: Biomedical Instrumentation Lab	2
BIOE 420: Intro Bio Control Systems	3	BIOE 420: Intro Bio Control Systems	3
BIOE 435: Senior Design I	2	BIOE 435: Senior Design I	2
BIOE 436: Senior Design II	2	BIOE 436: Senior Design II	2
BIOE 476: Tissue Engineering	3	BIOE 476: Tissue Engineering	3
CHEM 232: Elementary Organic Chemistry I 2	4	CHEM 232: Elementary Organic Chemistry I 2	4
CS 101: Intro Computing: Engrg & Sci	3	CS 101: Intro Computing: Engrg & Sci	3
MCB 150: Molec & Cellular Basis of Life	4	MCB 150: Molec & Cellular Basis of Life	4
Track Electives	**15**	**Track Electives**	**15**
Biomechanics Track		**Biomechanics Track**	
List of Pre-Approved Biomechanics Track Required Courses		**List of Pre-Approved Biomechanics Track Required Courses**	
TAM 211: Statics	3	TAM 211: Statics	3
TAM 212: Introductory Dynamics	3	TAM 212: Introductory Dynamics	3
TAM 251: Introductory Solid Mechanics	3	TAM 251: Introductory Solid Mechanics	3
List of Pre-Approved Biomechanics Electives to choose remaining hours from::		**List of Pre-Approved Biomechanics Electives to choose remaining hours from::**	
BIOE 461: Cellular Biomechanics	4	BIOE 461: Cellular Biomechanics	4
BIOE 498: Special Topics (Surgical Techniques)	3	BIOE 498: Special Topics (Surgical Techniques)	3
BIOE 498: Special Topics (Finite Element Methods in Biomedicine)	3	BIOE 498: Special Topics (Finite Element Methods in Biomedicine)	3
ME 330: Engineering Materials	4	ME 330: Engineering Materials	4
ME 481: Whole-Body Musculoskel Biomech	3	ME 481: Whole-Body Musculoskel Biomech	3
ME 482: Musculoskel Tissue Mechanics	3	ME 482: Musculoskel Tissue Mechanics	3
ME 483: Mechanobiology	4	ME 483: Mechanobiology	4
NPRE 498: Special Topics (Advanced Risk Analysis)	3	NPRE 498: Special Topics (Advanced Risk Analysis)	3
SE 402: Comp-Aided Product Realization	3	SE 402: Comp-Aided Product Realization	3
SE 423: Mechatronics	3	SE 423: Mechatronics	3
TAM 445: Continuum Mechanics	4	TAM 445: Continuum Mechanics	4
TMGT 461: Tech, Eng, & Mgt Final Project	2	TMGT 461: Tech, Eng, & Mgt Final Project	2
Pre-Approved Biomechanics Track recommended free elective:		**Pre-Approved Biomechanics Track recommended free elective:**	
SE 101: Engineering Graphics & Design	3	SE 101: Engineering Graphics & Design	3
Cell and Tissue Engineering Track		**Cell and Tissue Engineering Track**	
BIOE 306: Biofabrication Lab	3	BIOE 306: Biofabrication Lab	3
BIOE 416: Biosensors	3	BIOE 416: Biosensors	3
BIOE 424: Modeling for Angiogenesis	3	BIOE 424: Modeling for Angiogenesis	3
BIOE 430: Intro Synthetic Biology	3	BIOE 430: Intro Synthetic Biology	3
BIOE 460: Gene Editing Lab	3	BIOE 460: Gene Editing Lab	3
BIOE 461: Cellular Biomechanics	4	BIOE 461: Cellular Biomechanics	4
BIOE 487: Stem Cell Bioengineering	3	BIOE 487: Stem Cell Bioengineering	3
BIOE 498: Special Topics (Finite Element Methods in Biomedicine)	3	BIOE 498: Special Topics (Finite Element Methods in Biomedicine)	3
CHBE 471: Biochemical Engineering	3	CHBE 471: Biochemical Engineering	3
CHBE 472: Techniques in Biomolecular Eng	3	CHBE 472: Techniques in Biomolecular Eng	3
IE 330: Industrial Quality Control	3	IE 330: Industrial Quality Control	3
MSE 404: Laboratory Studies in Materials Science and Engineering	1.5	MSE 404: Laboratory Studies in Materials Science and Engineering	1.5
MSE 470: Design and Use of Biomaterials	3	MSE 470: Design and Use of Biomaterials	3
MSE 474: Biomaterials and Nanomedicine	3	MSE 474: Biomaterials and Nanomedicine	3
ME 483: Mechanobiology	4	ME 483: Mechanobiology	4
TMGT 461: Tech, Eng, & Mgt Final Project	2	TMGT 461: Tech, Eng, & Mgt Final Project	2
Recommended Free Elective:		**Recommended Free Elective:**	
MCB 450: Introductory Biochemistry	3	MCB 450: Introductory Biochemistry	3
Therapeutics Engineering Track		**Therapeutics Engineering Track**	
ABE 446: Biological Nanoengineering	3	ABE 446: Biological Nanoengineering	3
BIOE 306: Biofabrication Lab	3	BIOE 306: Biofabrication Lab	3
BIOE 424: Modeling for Angiogenesis	3	BIOE 424: Modeling for Angiogenesis	3
BIOE 430: Intro Synthetic Biology	3	BIOE 430: Intro Synthetic Biology	3
BIOE 460: Gene Editing Lab	3	BIOE 460: Gene Editing Lab	3
BIOE 477: Imaging and Therapeutic Probes	3	BIOE 477: Imaging and Therapeutic Probes	3
BIOE 479: Cancer Nanotechnology	3	BIOE 479: Cancer Nanotechnology	3
BIOE 498: Special Topics (Preclinical Molecular Imaging)	3	BIOE 498: Special Topics (Preclinical Molecular Imaging)	3
CHBE 472: Techniques in Biomolecular Eng	3	CHBE 472: Techniques in Biomolecular Eng	3
ECE 481: Nanotechnology	4	ECE 481: Nanotechnology	4
MSE 403: Synthesis of Materials	3	MSE 403: Synthesis of Materials	3
MSE 404: Laboratory Studies in Materials Science and Engineering	1.5	MSE 404: Laboratory Studies in Materials Science and Engineering	1.5
MSE 450: Polymer Science & Engineering	3	MSE 450: Polymer Science & Engineering	3
MSE 470: Design and Use of Biomaterials	3	MSE 470: Design and Use of Biomaterials	3
MSE 473: Biomolecular Materials Science	3	MSE 473: Biomolecular Materials Science	3
MSE 474: Biomaterials and Nanomedicine	3	MSE 474: Biomaterials and Nanomedicine	3
MSE 480: Surfaces and Colloids	3	MSE 480: Surfaces and Colloids	3
TMGT 461: Tech, Eng, & Mgt Final Project	2	TMGT 461: Tech, Eng, & Mgt Final Project	2
Computational and Systems Biology Track		**Computational and Systems Biology Track**	

CS 101: Intro Computing: Engrg & Sci (CS 125 may be taken instead of CS 101. Student must complete curriculum modification form with department advisor)	3		CS 101: Intro Computing: Engrg & Sci (CS 125 may be taken instead of CS 101. Student must complete curriculum modification form with department advisor)	3
ABE 440: Applied Statistical Methods I	4		ABE 440: Applied Statistical Methods I	4
BIOE 424: Modeling for Angiogenesis	3		BIOE 424: Modeling for Angiogenesis	3
BIOE 430: Intro Synthetic Biology	3		BIOE 430: Intro Synthetic Biology	3
BIOE 498: Special Topics (Finite Element Methods in Biomedicine)	3		BIOE 498: Special Topics (Finite Element Methods in Biomedicine)	3
CS 225: Data Structures	4		CS 225: Data Structures	4
CS 398: Special Topics (Deep Learning)	3		CS 398: Special Topics (Deep Learning)	3
CS 411: Database Systems	3		CS 411: Database Systems	3
CS 412: Introduction to Data Mining	3		CS 412: Introduction to Data Mining	3
CS 440: Artificial Intelligence	3		CS 440: Artificial Intelligence	3
CS 465: User Interface Design	3		CS 465: User Interface Design	3
CS 466: Introduction to Bioinformatics	3		CS 466: Introduction to Bioinformatics	3
ECE 490: Introduction to Optimization	3		ECE 490: Introduction to Optimization	3
IE 310: Deterministic Models in Optimization	3		IE 310: Deterministic Models in Optimization	3
IE 370: Stochastic Processes and Applications	3		IE 370: Stochastic Processes and Applications	3
NPRE 498: Special Topics (Advanced Risk Analysis)	3		NPRE 498: Special Topics (Advanced Risk Analysis)	3
SE 423: Mechatronics	3		SE 423: Mechatronics	3
TMGT 461: Tech, Eng, & Mgt Final Project	2		TMGT 461: Tech, Eng, & Mgt Final Project	2
Imaging and Sensing:			**Imaging and Sensing:**	
ECE 210: Analog Signal Processing	4		ECE 210: Analog Signal Processing	4
ECE 329: Fields and Waves I	3		ECE 329: Fields and Waves I	3
and select remaining hours from:			**and select remaining hours from:**	
BIOE 477: Imaging and Therapeutic Probes	3		BIOE 477: Imaging and Therapeutic Probes	3
BIOE 498: Special Topics (Surgical Techniques)	3		BIOE 498: Special Topics (Surgical Techniques)	3
BIOE 498: Special Topics (Preclinical Molecular Imaging)	3		BIOE 498: Special Topics (Preclinical Molecular Imaging)	3
ECE 310: Digital Signal Processing	3		ECE 310: Digital Signal Processing	3
ECE 311: Digital Signal Processing Lab	1		ECE 311: Digital Signal Processing Lab	1
ECE 380: Biomedical Imaging	3		ECE 380: Biomedical Imaging	3
ECE 416: Biosensors	3		ECE 416: Biosensors	3
ECE 460: Optical Imaging	4		ECE 460: Optical Imaging	4
ECE 467: Biophotonics	3		ECE 467: Biophotonics	3
ECE 473: Fund of Engrg Acoustics	3		ECE 473: Fund of Engrg Acoustics	3
ECE 480: Magnetic Resonance Imaging	3		ECE 480: Magnetic Resonance Imaging	3
ME 487: MEMS-NEMS Theory & Fabrication	4		ME 487: MEMS-NEMS Theory & Fabrication	4
NPRE 498: Special Topics (Advanced Risk Analysis)	3		NPRE 498: Special Topics (Advanced Risk Analysis)	3
SE 423: Mechatronics	3		SE 423: Mechatronics	3
TMGT 461: Tech, Eng, & Mgt Final Project	2		TMGT 461: Tech, Eng, & Mgt Final Project	2
Recommended Free Elective:			**Recommended Free Elective:**	
CHEM 442: Physical Chemistry I	4		CHEM 442: Physical Chemistry I	4
General Education Requirements			**General Education Requirements**	
A minimum of six courses is required, as follows:	**18**		**A minimum of six courses is required, as follows:**	**18**
Social and Behavioral Sciences	6		Social and Behavioral Sciences	6
Humanities & the Arts	6		Humanities & the Arts	6
The Grainger College of Engineering Liberal Education course list, or from the campus General Education lists for Social and Behavioral Sciences or Humanities and the Arts	6		The Grainger College of Engineering Liberal Education course list, or from the campus General Education lists for Social and Behavioral Sciences or Humanities and the Arts	6
Cultural Studies: Non-Western Cultures (1 course)			Cultural Studies: Non-Western Cultures (1 course)	
Cultural Studies: U.S. Minorities Cultures (1 course)			Cultural Studies: U.S. Minorities Cultures (1 course)	
Cultural Studies: Western/Comparative Cultures (1 course)			Cultural Studies: Western/Comparative Cultures (1 course)	
Non-Primary Language Requirement	**0-9**		**Non-Primary Language Requirement**	**0-9**
Completion of the third semester or equivalent of a non-primary language is required. Completion of three years of a single language in high school satisfies this requirement.			Completion of the third semester or equivalent of a non-primary language is required. Completion of three years of a single language in high school satisfies this requirement.	
University Composition	**4-6**		**University Composition**	**4-6**
RHET 105: Writing and Research	4		RHET 105: Writing and Research	4
CMN 111: Oral & Written Comm I	3		CMN 111: Oral & Written Comm I	3
& CMN 112: and Oral & Written Comm II	3		& CMN 112: and Oral & Written Comm II	3
ESL 111: Intro to Academic Writing I	3		ESL 111: Intro to Academic Writing I	3
& ESL 112: and Intro to Academic Writing II	3		& ESL 112: and Intro to Academic Writing II	3
ESL 115: Principles of Academic Writing	4		ESL 115: Principles of Academic Writing	4
Advanced Composition May be satisfied by completing a course in either the liberal education or free elective categories which has the Advanced Composition designation.			Advanced Composition May be satisfied by completing a course in either the liberal education or free elective categories which has the Advanced Composition designation.	
Free Electives	**6**		**Free Electives**	**8**
Free electives. Additional unrestricted course work, subject to certain exceptions as noted by the College, so that there are at least 128 credit hours earned toward the degree.			Free electives. Additional unrestricted course work, subject to certain exceptions as noted by the College, so that there are at least 128 credit hours earned toward the degree.	
Total Hours of Curriculum to Graduate	**128**		Total Hours of Curriculum to Graduate	**128**
Footnotes			**Footnotes**	
[1]MATH 220 *may be substituted, with four of the five credit hours applying toward the degree.* MATH 220 *is appropriate for students with no background in calculus.*			[1]MATH 220 *may be substituted, with four of the five credit hours applying toward the degree.* MATH 220 *is appropriate for students with no background in calculus.*	
[2]*May be taken for 3 or 4 credit hours; the extra hour may be used to help meet free elective requirements.*			[2]*May be taken for 3 or 4 credit hours; the extra hour may be used to help meet free elective requirements.*	

Date Submitted: 09/04/19 3:45 pm

Viewing: 10KP4048BS : Aerospace Engineering, BS

Last approved: 08/12/19 8:35 am

Last edit: 11/15/19 11:14 am

Changes proposed by: Tim Bretl

Catalog Pages Using this Program	Aerospace Engineering, BS

In Workflow

1. **U Program Review**
2. **1615 Head**
3. **KP Committee Chair**
4. **KP Dean**
5. **University Librarian**
6. **Provost**
7. **Senate EPC**
8. Senate
9. U Senate Conf
10. Board of Trustees
11. IBHE
12. DMI

Approval Path

1. 09/04/19 4:33 pm Deb Forgacs (dforgacs): Approved for U Program Review
2. 09/04/19 4:54 pm Tim Bretl (tbretl): Approved for 1615 Head
3. 11/13/19 7:54 am Brooke Newell (bsnewell): Approved for KP Committee Chair
4. 11/13/19 10:35 am Candy Deaville (candyd): Approved for KP Dean
5. 11/13/19 11:59 am John Wilkin (jpwilkin):

Approved for University Librarian
6. 11/14/19 8:57 am Kathy Martensen (kmartens): Approved for Provost

History

1. Jul 5, 2019 by Deb Forgacs (dforgacs)
2. Aug 9, 2019 by Deb Forgacs (dforgacs)
3. Aug 12, 2019 by Deb Forgacs (dforgacs)

Proposal Type

Proposal Type:
Major (ex. Special Education)

This proposal is for a:
Revision

Proposal Title:

if this proposal is one piece of a multi-element change please include the other impacted programs here. *example: A BS revision with multiple concentration revisions*

Administrative approval: Require aerospace computer-aided design in the AE curriculum ~~UG course lists approval.~~

Is this program available on campus and online?	**No**
Official Program Name	Aerospace Engineering, BS
Banner/Codebook Name	BS: Aerospace Engr -- UIUC

Corresponding Degree					
Program Code:	10KP4048BS				
Major Code	4048	Minor Code		Conc Code	Degree Code
					BS
EP Control Number	**EP.20.42**				
Senate Approval Date					
Senate Conference Approval Date					
BOT Approval Date					
IBHE Approval Date					
Effective Date:					
Effective Catalog Term	Spring 2020				
Sponsor College	Grainger College of Engineering				
Sponsor Department	Aerospace Engineering				
Sponsor Name	**Timothy Bretl**			Sponsor Email	**tbretl@illinois.edu**
College Contact	**Brooke Newell**			College Contact Email	**bsnewell@illinois.edu**

Is this program interdisciplinary?

No

Academic Level	Undergraduate
Will you admit to the concentration directly?	
Is a concentration required for	

graduation?

CIP Code 140201 - Aerospace, Aeronautical and Astronautical/Space Engineering.

Program Description and Justification

Justification for proposal change:

The proposed curriculum change does two things:

1) It removes PHYS 213 (Thermal Physics) as a required course.
2) It adds AE 140 (Aerospace Computer-Aided Design) as a required course.

The faculty of Aerospace Engineering voted to adopt this change in May, 2014. The vote was recorded in the meeting minutes.

There will be a net zero change in the total number of required hours (both are 2 credit hours).

The total number of basic math and science hours will decrease from 36 hours to 34 hours, which remains above the minimum of 32 hours that are required for ABET accreditation.

A course proposal for AE 140 is currently under review. It has been taught as AE 199 every fall and spring semester since Fall 2013 - a total of 13 offerings - with an average enrollment of 70 students.

Curriculum modification approvals have been provided by COE since 2016 for AE students who have taken AE 140 (as AE 199) and who have not taken PHYS 213 - nearly all students have done so.

THE REASONS FOR REMOVING PHYS 213

The key reason for removing PHYS 213 as a required course is the significant overlap between this course and ME 200 (Thermodynamics), which is also required for AE students. The AE Undergraduate Curriculum Committee determined that AE students benefitted most from ME 200, and that junior- and senior-level AE courses depended on the background provided in ME 200 but not on the background provided in PHYS 213.

Here is the course description for PHYS 213:

"First and second laws of thermodynamics including kinetic theory of gases, heat capacity, heat engines, introduction to entropy and statistical mechanics, and introduction to application of free energy and Boltzmann factor. A

calculus-based approach for majors in engineering, mathematics, physics and chemistry."

Here is the course description for ME 200:

"Classical thermodynamics through the second law; system and control-volume analyses of thermodynamic processes; irreversibility and availability; relations for ideal gas mixtures."

THE REASONS FOR ADDING AE 140

There are two key reasons for adding AE 140 as a required course.

First, it will support student success throughout the AE curriculum. Students in AE senior design (AE 442/443), in particular, are required to use CAD software to model engineering components as part of their design projects. Without a required CAD course, many AE students would be learning to use CAD software for the first time in senior design. This reduced the quality and scope of their work, limited their ability to express their ideas, and reduced the time they could spend on other aspects of their design project.

Second, it will improve job placement and better prepare AE students both for internship and co-op positions and for permanent positions within the aerospace industry. CAD software is widely used throughout this industry.

Here is the course description for AE 140:

"Computer-aided design (CAD) software modeling of engineered components. Sketching and three-dimensional solid modeling. Complex surface modeling. Production of assembly drawings and exploded views. Creation of dimensioned drawings using best practices for manufacturing. Sketching of parts in isometric views and multi-view drawings along with spatial visualization. Aerospace engineering-themed final project."

Please note that the existing BS/MS in Aerospace is unchanged as part of the proposed revision.
Course Requirements

B.S. Component (121 hours)1

Same required courses as the traditional B.S. degree with minimum hours required reduced from 128 to 121.
The reduction of 7 credit hours includes:
4 hours in Free Electives in both AE curricula
3 hours in other non-AE Technical Electives
Overall GPA of 3.40 must be maintained through completion of B.S.

Overall GPA of 3.40 must be maintained through completion of B.S. component of the program.
Students can apply after they complete their junior-level courses, but before they start their senior year.
Illinois undergraduate student minimum residence requirement must be satisfied.

At the graduate level, requirements are identical for both the M.S. Non-Thesis Track (32 additional hours of coursework) and the M.S. Thesis Track (32 additional hours of coursework).
1 If the student withdraws from the MS component they must revert to the traditional BS degree program and satisfy all degree requirements of the BS curriculum.

Is This a Teacher Certification Program?

No

Will specialized accreditation be sought for this program?

No

Admission Requirements

Desired Admissions Term **Fall 2020**

Provide a brief narrative description of the admission requirements for this program. Where relevant, include information about licensure requirements, student background checks, GRE and TOEFL scores, and admission requirements for transfer students.

Unchanged.

Describe how critical academic functions such as admissions and student advising are managed.

Unchanged.

Enrollment

Describe how this revision will impact enrollment and degrees awarded.

No impact.

Estimated Annual Number of Degrees Awarded

Year One Estimate	5th Year Estimate (or when fully implemented)
What is the matriculation	

term for this program?
Fall

Delivery Method

This program is available:
Face-to-Face

Budget

Are there budgetary implications for this revision? No

Will the program or revision require staffing (faculty, advisors, etc.) beyond what is currently available?
No

Additional Budget Information

Attach File(s)

Resource Implications

Facilities

Will the program require new or additional facilities or significant improvements to already existing facilities?
No

Technology

Will the program need additional technology beyond what is currently available for the unit?
No

Non-Technical Resources

Will the program require additional supplies, services or equipment (non-technical)?

No

Resources

Faculty Resources

Please address the impact on faculty resources including any changes in numbers of faculty, class size, teaching loads, student-faculty ratios, etc. Describe how the unit will support student advising, including job placement and/or admission to advanced studies.

A member of the AE faculty and instructional staff will have to teach one additional 2-hour course each semester (AE 140). This has been done every semester since Fall 2013, with no significant impact on faculty resources.

Library Resources

Describe your proposal's impact on the University Library's resources, collections, and services. If necessary please consult with the appropriate disciplinary specialist within the University Library.

None.

Instructional Resources

Will there be any reduction in other course offerings, programs or concentrations by your department as a result of this new program/proposed change?

No

Does this new program/proposed change result in the replacement of another program?

No

Does the program include other courses/subjects impacted by the creation/revision of this program?

No

Financial Resources

How does the unit intend to financially support this proposal?

None needed beyond what is normally available to support instructors, either through faculty teaching assignments or through hiring lecturers and other teaching specialists.

Will the unit need to seek campus or other external resources?

No

Attach letters of support

Will an existing tuition rate be used or continue to be used for this program?

Yes

Program Regulation

Describe how the program is aligned with or meets licensure, certification, and/or entitlement requirements, if applicable.

Briefly describe the plan to assess and improve student learning, including the program's learning objectives; when, how, and where these learning objectives will be assessed; what metrics will be used to signify student's achievement of the stated learning objectives; and the process to ensure assessment results are used to improve student learning.

Unchanged.

The total number of basic math and science hours will decrease from 36 hours to 34 hours, which remains above the minimum of 32 hours that are required for ABET accreditation.

Is the career/profession for graduates of this program regulated by the State of Illinois?

No

Program of Study

"Baccalaureate degree requires at least 120 semester credit hours or 180 quarter credit hours and at least 40 semester credit hours (60 quarter credit hours) in upper division courses" (source: https://www.ibhe.org/assets/files/PrivateAdminRules2017.pdf). For proposals for new bachelor's degrees, if this minimum is not explicitly met by specifically-required 300- and/or 400-level courses, please provide information on how the upper-division hours requirement will be satisfied.

All proposals must attach the new or revised version of the Academic Catalog program of study entry. Contact your college office if you have questions.

Revised programs **AE Program of Study Change.xlsx**

Attach a side-by-side comparison with the existing program AND, if the revision references or adds "chose-from" lists of courses students can select from to fulfill requirements, a listing of these courses, including the course rubric, number, title, and number of credit hours.

Catalog Page Text

Catalog Page Text: Description of program for the catalog page. This is not official content, it is used to help build the catalog pages for the program. Can be edited in the catalog by the college or department.

Statement for Programs of Study Catalog

Overview of Curricular Requirements

The curriculum requires 128 hours for graduation and is organized as follows.

Orientation and Professional Development

These courses introduce the opportunities and resources your college, department, and curriculum can offer you as you work to achieve your career goals. They also provide the skills to work effectively and successfully in the engineering profession.

Course List

Code	Title	Hours
AE 100	Intro to Aerospace Engineering 1	2
ENG 100	Engineering Orientation 2	0
Total Hours		2

Foundational Mathematics and Science

These courses stress the basic mathematical and scientific principles upon which the engineering discipline is based.

Course List

Code	Title	Hours
CHEM 102	General Chemistry I	3
CHEM 103	General Chemistry Lab I	1
MATH 221	Calculus I 3	4
MATH 225	Introductory Matrix Theory	2
MATH 231	Calculus II	3
MATH 241	Calculus III	4
MATH 285	Intro Differential Equations	3
PHYS 211	University Physics: Mechanics	4
PHYS 212	University Physics: Elec & Mag	4
~~PHYS 213~~	~~Univ Physics: Thermal Physics~~	~~2~~
Total Hours		28

Aerospace Engineering Technical Core

These courses stress fundamental concepts and basic laboratory techniques that comprise the common intellectual understanding of aerospace engineering.

Course List

Code	Title	Hours
AE 140	**Course AE 140 Not Found (Aerospace Computer-Aided Design)**	**2**
AE 202	Aerospace Flight Mechanics	3
AE 311	Incompressible Flow	3
AE 312	Compressible Flow	3
AE 321	Mechs of Aerospace Structures	3
AE 323	Applied Aerospace Structures	3
AE 352	Aerospace Dynamical Systems	3
AE 353	Aerospace Control Systems	3
AE 370	Aerospace Numerical Methods	3
AE 433	Aerospace Propulsion	3
AE 442	Aerospace Systems Design I	3
AE 443	Aerospace Systems Design II	3
AE 460	Aerodynamics & Propulsion Lab	2
AE 461	Structures & Control Lab	2
AE 483	Unmanned Aerial Vehicle (UAV) Navigation and Control	3
ECE 205	Electrical and Electronic Circuits	3

Code	Title	Hours
ECE 206	Electrical and Electronic Circuits Lab	1
IE 300	Analysis of Data 4	3
ME 200	Thermodynamics	3
MSE 280	Engineering Materials	3
TAM 210	Introduction to Statics	2
TAM 212	Introductory Dynamics	3
Total Hours		60

Technical Electives

These courses stress the rigorous analysis and design principles practiced in the major subdisciplines of aerospace engineering.

Course List

Code	Title	Hours
Selected from the departmentally approved list of Technical Electives, satisfying these distribution requirements:		
Chosen from AE Technical Electives listed below		6
AE 199	Undergraduate Open Seminar	0 to 5
AE 402	Orbital Mechanics	3 or 4
AE 403	Spacecraft Attitude Control	3 or 4
AE 410	Computational Aerodynamics	3 or 4
AE 412	Viscous Flow & Heat Transfer	4
AE 416	Applied Aerodynamics	3 or 4
AE 419	Aircraft Flight Mechanics	3 or 4
AE 420	Finite Element Analysis	3 or 4
AE 427	Mechanics of Polymers	3
AE 428	Mechanics of Composites	3
AE 434	Rocket Propulsion	3 or 4
AE 435	Electric Propulsion	3 or 4
AE 451	Aeroelasticity	3 or 4
AE 454	Systems Dynamics & Control	3 or 4
AE 456	Global Nav Satellite Systems	4
AE 468	Optical Remote Sensing	3
AE 482	Introduction to Robotics	4
AE 497	Independent Study	1 to 4
AE 498	Special Topics	1 to 4
ENG 491	Interdisciplinary Design Proj (CU1 & CU2)	1 to 4

Code	Title	Hours
Chosen from AE Technical Electives or Non-AE Technical Electives		6
ASTR 404	Stellar Astrophysics	3
ASTR 405	Planetary Systems	3
ASTR 406	Galaxies and the Universe	3
ASTR 414	Astronomical Techniques	4
ATMS 301	Atmospheric Thermodynamics	3
ATMS 302	Atmospheric Dynamics I	3
ATMS 303	Synoptic-Dynamic Wea Analysis	4
ATMS 304	Radiative Transfer-Remote Sens	3
ATMS 305	Computing and Data Analysis	3
ATMS 306	Cloud Physics	3
ATMS 313	Synoptic Weather Forecasting	4
ATMS 406	Tropical Meteorology	4
ATMS 410	Radar Remote Sensing	4
CEE 310	Transportation Engineering	3
CEE 330	Environmental Engineering	3
CEE 360	Structural Engineering	3
CEE 380	Geotechnical Engineering	3
CEE 407	Airport Design	3 or 4
CEE 412	High-Speed Rail Engineering	3 or 4
CEE 451	Environmental Fluid Mechanics	3
CEE 471	Structural Mechanics	3 or 4
CHEM 232	Elementary Organic Chemistry I	3 or 4
CHEM 233	Elementary Organic Chem Lab I	2
CHEM 236	Fundamental Organic Chem I	4
CS 101	Intro Computing: Engrg & Sci	3
CS 125	Intro to Computer Science	4
CS 225	Data Structures	4
CS 420	Parallel Progrmg: Sci & Engrg	3 or 4
CS 461	Computer Security I	4
CS 465	User Interface Design	3 or 4
CSE 412	Numerical Thermo-Fluid Mechs	2 to 4
ECE 210	Analog Signal Processing	4
ECE 220	Computer Systems & Programming	4
ECE 310	Digital Signal Processing	3
ECE 311	Digital Signal Processing Lab	1
ECE 329	Fields and Waves I	3
ECE 330	Power Ckts & Electromechanics	3
ECE 342	Electronic Circuits	3

Code	Title	Hours
ECE 343	Electronic Circuits Laboratory	1
ECE 385	Digital Systems Laboratory	3
ECE 473	Fund of Engrg Acoustics	3 or 4
ECE 486	Control Systems	4
ENG 491	Interdisciplinary Design Proj (SEctions SAE and HYP)	1 to 4
MSE 401	Thermodynamics of Materials	3
MSE 440	Mechanical Behavior of Metals	3
MSE 443	Design of Engineering Alloys	3
MSE 498	Special Topics (Section CM3)	1 to 4
SE 310	Design of Structures and Mechanisms	3
SE 420	Digital Control Systems	4
SE 423	Mechatronics	3
IE 310	Deterministic Models in Optimization	3
MATH 347	Fundamental Mathematics	3
MATH 402	Non Euclidean Geometry	3 or 4
MATH 413	Intro to Combinatorics	3 or 4
MATH 416	Abstract Linear Algebra	3 or 4
MATH 442	Intro Partial Diff Equations	3 or 4
MATH 446	Applied Complex Variables	3 or 4
MATH 461	Probability Theory	3 or 4
MATH 482	Linear Programming	3 or 4
MATH 484	Nonlinear Programming	3 or 4
MATH 489	Dynamics & Differential Eqns	3 or 4
ME 320	Heat Transfer	4
ME 360	Signal Processing	3.5
ME 370	Mechanical Design I	3
ME 400	Energy Conversion Systems	3 or 4
ME 401	Refrigeration and Cryogenics	3 or 4
ME 498	Special Topics	0 to 4
MSE 450	Polymer Science & Engineering	3 or 4
MSE 453	Plastics Engineering	3

Code	Title	Hours
MSE 457	Polymer Chemistry	3 or 4
NPRE 201	Energy Systems	2 or 3
NPRE 402	Nuclear Power Engineering	3 or 4
NPRE 470	Fuel Cells & Hydrogen Sources	3
NPRE 475	Wind Power Systems	3 or 4
NPRE 498	Special Topics (Energy Storage and Conveyance)	1 to 4
PHYS 325	Classical Mechanics I	3
PHYS 326	Classical Mechanics II	3
PHYS 435	Electromagnetic Fields I	3
PHYS 485	Atomic Phys & Quantum Theory	3
PHYS 486	Quantum Physics I	4
STAT 428	Statistical Computing	3 or 4
STAT 448	Advanced Data Analysis	4
TAM 324	Behavior of Materials	4
TAM 451	Intermediate Solid Mechanics	4
TAM 456	Experimental Stress Analysis	3
TAM 470	Computational Mechanics	3 or 4
TE 401	Developing Breakthrough Projects	1 to 4
TMGT 461	Tech, Eng, & Mgt Final Project	2

General Education Requirements

Course List

Code	Title	Hours
A minimum of six courses is required, as follows:		18
Social and Behavioral Sciences		6
Humanities & the Arts		6
The Grainger College of Engineering Liberal Education course list, or from the campus General Education lists for Social and Behavioral Sciences or Humanities and the Arts		6
Cultural Studies: Non-Western Cultures (1 course)		
Cultural Studies: U.S. Minorities Cultures (1 course)		
Cultural Studies: Western/Comparative Cultures (1 course)		

Non-Primary Language Requirement

Course List

Code	Title	Hours
Completion of the third semester or equivalent of a non-primary language is required. Completion of three years of a single language in high school satisfies this requirement.		0-9

University Composition

These courses teach fundamentals of expository writing.

Course List

Code	Title	Hours
Choose one:		
RHET 105	Writing and Research	
CMN 111	Oral & Written Comm I	
& CMN 112	and Oral & Written Comm II	
ESL 111	Intro to Academic Writing I	
& ESL 112	and Intro to Academic Writing II	
ESL 115	Principles of Academic Writing	
Advanced Composition (satisfied by completing the sequence AE 442 + AE 443 in the Aerospace Engineering Technical Core)		

Free Electives

Course List

Code	Title	Hours
Free Electives		
Free electives. Additional unrestricted course work, subject to certain exceptions as noted by the College, so that there are at least 128 credit hours earned toward the degree.		6
Total Hours of Curriculum to Graduate		128

1
2
3 MATH 220 *may be substituted, with four of the five credit hours applying toward the degree.* MATH 220 *is appropriate for students with no background in calculus.*
4 STAT 400 *may be substituted.*

EP Documentation

Attach
Rollback/Approval
Notices

DMI Documentation

Attach Final
Approval Notices

Attached
Document

Justification for
this request

Program Reviewer
Comments

Brooke Newell (bsnewell) (09/04/19 2:08 pm): Rollback: Side by side comparison of existing and new program of study needed for submission.

Kathy Martensen (kmartens) (11/15/19 8:29 am): Admin approval: Does not change req'd hours for program; does not restrict options for students.

Key: 111

Current Requirements	*Current Hours*	*Revised Requirements*	*Revised Hours*
Orientation and Professional Development	**0-2**	**Orientation and Professional Development**	**0-2**
AE 100 Introduction to Aerospace Engineering*	2	AE 100 Introduction to Aerospace Engineering*	2
ENG 100 Engineering Orientation	0	ENG 100 Engineering Orientation	0
Foundational Mathematics and Science	**35**	**Foundational Mathematics and Science**	**33**
CHEM 102 General Chemistry 1	3	CHEM 102 General Chemistry 1	3
CHEM 103 General Chemistry Lab 1	1	CHEM 103 General Chemistry Lab 1	1
MATH 221 Calculus I	4	MATH 221 Calculus I	4
MATh 225 Introductory Matrix Theory	2	MATh 225 Introductory Matrix Theory	2
MATH 231 Calculus II	3	MATH 231 Calculus II	3
MATH 241 Calculus III	4	MATH 241 Calculus III	4
MATH 285 Intro Differential Equations	8	MATH 285 Intro Differential Equations	8
PHYS 211 University Physics: Mechanics	4	PHYS 211 University Physics: Mechanics	4
PHYS 212 University Physics: Elec & Mag	4	PHYS 212 University Physics: Elec & Mag	4
PHYS 213 University Physics: Thermal Physics	2		
		Aerospace Engineering Technical Core	**59**
Aerospace Engineering Technical Core	**57**	AE 140 Aerospace Computer Aided Design**	2
AE 202 Aerospace Flight Mechanics	3	AE 202 Aerospace Flight Mechanics	3
AE 311 Incompressible Flow	3	AE 311 Incompressible Flow	3
AE 312 Compressible Flow	3	AE 312 Compressible Flow	3
AE 321 Mechs of Aerospace Structures	3	AE 321 Mechs of Aerospace Structures	3
AE 323 Applied Aerospace Structures	3	AE 323 Applied Aerospace Structures	3
AE 352 Aerospace Dynamical Systems	3	AE 352 Aerospace Dynamical Systems	3
AE 353 Aerospace Control Systems	3	AE 353 Aerospace Control Systems	3
AE 370 Aerospace Numerical Methods	3	AE 370 Aerospace Numerical Methods	3
AE 433 Aerospace Propulsion	3	AE 433 Aerospace Propulsion	3
AE 442 Aerospace Systems Design I	3	AE 442 Aerospace Systems Design I	3
AE 443 Aerospace Systems Design II	3	AE 443 Aerospace Systems Design II	3
AE 460 Aerodynamics & Propulsion Lab	2	AE 460 Aerodynamics & Propulsion Lab	2
AE 461 Structures and Control Lab	2	AE 461 Structures and Control Lab	2
AE 483 Unmanned Aerial Vehicle (UAV) Navigation and Control	3	AE 483 Unmanned Aerial Vehicle (UAV) Navigation and Control	3
ECE 205 Electrical and Electronics Circuits	3	ECE 205 Electrical and Electronics Circuits	3
ECE 206 Electrical and Electronics Circuits Lab	1	ECE 206 Electrical and Electronics Circuits Lab	1
IE 300 Analysis of Data	3	IE 300 Analysis of Data	3
ME 200 Thermodynamics	2	ME 200 Thermodynamics	2
MSE 280 Engineering Materials	3	MSE 280 Engineering Materials	3
TAM 210 Introduction to Statics	2	TAM 210 Introduction to Statics	2
TAM 212 Introductory Dynamics	3	TAM 212 Introductory Dynamics	3
Aerospace Technical Electives	**6**	**Aerospace Technical Electives**	**6**
Select from department-approved list.		Select from department-approved list.	
Other Technical Electives	**6**	**Other Technical Electives**	**6**
Select from department-approved list.		Select from department-approved list.	
Language Other Than English	**0-15**	**Language Other Than English**	**0-15**
Coursework at or above the third level is required for graduation.		Coursework at or above the third level is required for graduation.	
Humanities and the Arts	**6**	**Humanities and the Arts**	**6**
Select from campus-approved list.		Select from campus-approved list.	
Social and Behavioral Sciences	**6**	**Social and Behavioral Sciences**	**6**
Select from campus-approved list.		Select from campus-approved list.	
Liberal Electives	**6**	**Liberal Electives**	**6**
Select from college-approved list.		Select from college-approved list.	
Cultural Studies		**Cultural Studies**	
Select one course from Western culture, one from non-Western culture, and one from U.S. minority culture from campus approved lists.		Select one course from Western culture, one from non-Western culture, and one from U.S. minority culture from campus approved lists.	
Free Electives	6	**Free Electives**	6
Select from college-approved list.		Select from college-approved list.	

*AE 100 is not required but is taken by the majority of incoming students to explore their major.
**AE 140 is a pending course number for FA20. It is currently offered as AE 199 CAD.

RED = Course is being removed from requirements
GREEN = Course addition

Date Submitted: 10/18/19 8:47 am

Viewing: 4092 : Materials Science & Engineering Minor

Last approved: 09/12/19 3:52 pm

Last edit: 11/15/19 11:41 am

Changes proposed by: Laura Nagel

Catalog Pages Using this Program	Materials Science & Engineering Minor

In Workflow

1. **U Program Review**
2. **1919 Head**
3. **KP Committee Chair**
4. **KP Dean**
5. **University Librarian**
6. **Provost**
7. **Senate EPC**
8. Senate
9. U Senate Conf
10. Board of Trustees
11. IBHE
12. DMI

Approval Path

1. 10/18/19 9:23 am Deb Forgacs (dforgacs): Approved for U Program Review
2. 10/18/19 9:31 am Pascal Bellon (bellon): Approved for 1919 Head
3. 11/13/19 7:54 am Brooke Newell (bsnewell): Approved for KP Committee Chair
4. 11/13/19 10:35 am Candy Deaville (candyd): Approved for KP Dean
5. 11/13/19 11:59 am John Wilkin (jpwilkin):

Approved for University Librarian
6. 11/14/19 8:57 am Kathy Martensen (kmartens): Approved for Provost

History

1. Apr 23, 2019 by Deb Forgacs (dforgacs)
2. Sep 12, 2019 by Brooke Newell (bsnewell)

Proposal Type

Proposal Type:
Minor (ex. European Union Studies)

This proposal is for a:
Revision

Proposal Title:

if this proposal is one piece of a multi-element change please include the other impacted programs here. *example: A BS revision with multiple concentration revisions*

Administrative approval: Revision to minor ~~migration update~~

Is this program available on campus and online?	**No**
Official Program Name	Materials Science & Engineering Minor
Banner/Codebook Name	Materials Science and Engineering
Program Code:	4092

Major Code		Minor Code	4092	Conc Code	

Degree Code

EP Control Number **EP.20.42**

Senate Approval Date

Senate Conference Approval Date

BOT Approval Date

IBHE Approval Date

Effective Date:

Effective Catalog Term Fall 2020

Sponsor College Grainger College of Engineering

Sponsor Department Materials Science & Engineering

Sponsor Name

Sponsor Email

College Contact

College Contact Email

Is this program interdisciplinary?

No

Is this minor?

A Comprehensive study in a single discipline

Academic Level Undergraduate

CIP Code

Program Description and Justification

Justification for proposal change:

Updating Materials Science and Engineering Minor to reflect changes in the MatSE undergraduate curriculum.

Is This a Teacher Certification Program?

No

Will specialized accreditation be sought for this program?

No

Enrollment

Will the department limit enrollment to the minor?

No

Describe how the department will monitor the admission to/enrollment in the minor.

Student must meet with Chief Advisor prior to admission to minor.

Are there any prerequisites for the proposed minor?

No

Describe how this revision will impact enrollment and degrees awarded.

We expect the enrollment in the minor to stay about the same.

Delivery Method

This program is available:

Face-to-Face

Other than certification via the students' degree audits, is there any additional planned mechanism to award/honor successful completion of the minor?

No

Budget

Are there budgetary implications for this revision? No

Will the program or revision require staffing (faculty, advisors, etc.) beyond what is currently available?

No

Additional Budget Information

Attach File(s)

Resource Implications

Facilities

Will the program require new or additional facilities or significant improvements to already existing facilities?

No

Technology

Will the program need additional technology beyond what is currently available for the unit?

No

Non-Technical Resources

Will the program require additional supplies, services or equipment (non-technical)?

No

Resources

Library Resources

Describe your proposal's impact on the University Library's resources, collections, and services. If necessary please consult with the appropriate disciplinary specialist within the University Library.

The proposal should have minimal impact on University Library resources.

Instructional Resources

Will there be any reduction in other course offerings, programs or concentrations by your department as a result of this new program/proposed change?

No

Does this new program/proposed change result in the replacement of another program?

No

Does the program include other courses/subjects impacted by the creation/revision of this program?

No

Financial Resources

How does the unit intend to financially support this proposal?

Will the unit need to seek campus or other external resources?

No

Attach letters of support

Program Regulation

Describe how the program is aligned with or meets licensure, certification, and/or entitlement requirements, if applicable.

Briefly describe the plan to assess and improve student learning, including the program's learning objectives; when, how, and where these learning objectives will be assessed; what metrics will be used to signify student's achievement of the stated learning objectives; and the process to ensure assessment results are used to improve student learning.

Is the career/profession for graduates of this program regulated by the State of Illinois?

No

Program of Study

"Baccalaureate degree requires at least 120 semester credit hours or 180 quarter credit hours and at least 40 semester credit hours (60 quarter credit hours) in upper division courses" (source: https://www.ibhe.org/assets/files/PrivateAdminRules2017.pdf). For proposals for new bachelor's degrees, if this minimum is not explicitly met by specifically-required 300- and/or 400-level courses, please provide information on how the upper-division hours requirement will be satisfied.

An undergraduate minor should consist of at least 16 - and no more than 21 hours - of course work, with at least 6 hours of 300- or 400- level courses. Except clearly remedial offerings, prerequisite courses within the sponsoring unit count towards the total; prerequisite courses outside the sponoring unit do not count toward this total. The unit sponsoring the minor and that unit's college may set educationally necessary prerequisites for eligibility for the minor within these constraints. Does this proposal meet these criteria?

Yes

All proposals must attach the new or revised version of the Academic Catalog program of study entry. Contact your college office if you have questions.

Revised programs **Proposed changes to minor.docx**

Attach a side-by-side comparison with the existing program AND, if the revision references or adds "chose-from" lists of courses students can select from to fulfill requirements, a listing of these courses, including the course rubric, number, title, and number of credit hours.

Catalog Page Text

Catalog Page Text: Description of program for the catalog page. This is not official content, it is used to help build the catalog pages for the program. Can be edited in the catalog by the college or department.

Materials are the basis for all engineering and also are the basis for much of the research in various areas of science. The Minor in Materials Science and Engineering is designed to give students in other areas of engineering and science both a broad view of all materials as well as several courses in a particular area of materials, knowledge that will be of value whether the student pursues a career in industry, government, or academia.

The courses, listed below, have been selected to give an undergraduate student both a strong background in all types of materials as well as more detailed knowledge of particular areas of materials science and engineering (e.g., ceramics, metals, polymers, electronic materials or biomaterials).

The following 18 credits are required:

Statement for Programs of Study Catalog

Course List

Code	Title	Hours
Core Course Work		
MSE 280	Engineering Materials	3
MSE 401	Thermodynamics of Materials (Other thermodynamics courses may be substituted upon petition.)	3
One additional course chosen from an approved list below:		3
MSE 304	Electronic Properties of Matls	
MSE 402	Kinetic Processes in Materials	
MSE 403	Synthesis of Materials	
MSE 405	Microstructure Determination	
MSE 406	Thermal-Mech Behavior of Matls	
~~Introductory Area course chosen from an approved list below:~~		~~3~~
Nine additional hours in advanced courses selected from:		**9**
MSE 404	**Laboratory Studies in Materials Science and Engineering**	**1.5**
MSE 420	Ceramic Materials & Properties	3
MSE 421	Ceramic Processing	3 or 4
MSE 422	Electrical Ceramics	3
~~Metals~~		
MSE 440	Mechanical Behavior of Metals	3
MSE 441	Metals Processing	3
MSE 443	Design of Engineering Alloys	3
MSE 445	Corrosion of Metals	3 or 4
~~Polymers~~		

Code	Title	Hours
MSE 450	Polymer Science & Engineering	3 or 4
MSE 453	Plastics Engineering	3
MSE 454	**Mechanics of Polymers**	**3**
MSE 455	Macromolecular Solids	3
MSE 456	**Mechanics of Composites**	**3**
MSE 457	Polymer Chemistry	3 or 4
MSE 458	Polymer Physics	3 or 4
~~Electronic Materials~~		
MSE 460	Electronic Materials I	3
MSE 461	Electronic Materials II	3
MSE 466	**Materials in Electrochem Syst**	**3**
MSE 470	Design and Use of Biomaterials	3
~~Senior lab source chosen from an approved list below:~~		~~3~~
~~MSE 423Ceramic Processing Laboratory~~		
~~MSE 442Metals Laboratory~~		
~~MSE 452Polymer Laboratory~~		
~~MSE 462Electronic Materials Lab~~		
~~MSE 472Biomaterials Laboratory~~		
~~Advanced Area course chosen from one of several approved lists below:~~		~~3~~
~~Ceramics~~		
MSE 473	Biomolecular Materials Science	3
~~General MatSE~~		
MSE 474	**Biomaterials and Nanomedicine**	**3**
MSE 480	Surfaces and Colloids	3 or 4
MSE 481	Electron Microscopy	3 or 4
MSE 484	Composite Materials	3 or 4
MSE 485	Atomic Scale Simulations	3 or 4
~~MSE 498Special Topics~~		
MSE 487	**Materials for Nanotechnology**	**3 or 4**
MSE 488	**Optical Materials**	**3 or 4**
MSE 489	**Matl Select for Sustainability**	**3 or 4**
ECE 444	IC Device Theory & Fabrication	4
~~Biomaterials~~		

EP Documentation

Attach
Rollback/Approval
Notices

DMI Documentation

Attach Final
Approval Notices

Attached
Document

Justification for
this request

Program Reviewer
Comments

Kathy Martensen (kmartens) (11/15/19 8:30 am): Admin approval: Does not change total hrs. req'd; does not restrict options for students.

Key: 126

EP.20.42_original
Admin Approval #A4

Date Submitted: 09/11/19 4:08 pm

Viewing: 10KR0261BA : Dance, BA

Last approved: 02/05/19 5:28 pm

Last edit: 11/15/19 11:49 am

Changes proposed by: Nicole Turner

Catalog Pages Using this Program	Dance, BA

In Workflow

1. **U Program Review**
2. **1801 Head**
3. **KR Dean**
4. **University Librarian**
5. **Provost**
6. **Senate EPC**
7. Senate
8. U Senate Conf
9. Board of Trustees
10. IBHE
11. DMI

Approval Path

1. 09/11/19 4:46 pm
   Deb Forgacs (dforgacs): Approved for U Program Review
2. 11/12/19 2:19 pm
   Jan Erkert (erkert): Approved for 1801 Head
3. 11/14/19 1:42 pm
   Nicole Turner (nicturn): Approved for KR Dean
4. 11/14/19 2:48 pm
   John Wilkin (jpwilkin): Approved for University Librarian
5. 11/15/19 10:05 am
   Kathy Martensen (kmartens): Approved for Provost

History

1. Feb 5, 2019 by Deb Forgacs (dforgacs)

Proposal Type

Proposal Type:
Major (ex. Special Education)

This proposal is for a:
Revision

Proposal Title:

if this proposal is one piece of a multi-element change please include the other impacted programs here. *example: A BS revision with multiple concentration revisions*

Administrative approval: ~~Transistion admin Approval:~~Add DANC **125, Black Dances of Resistance** ~~200, Explore Music through Dance (3 hours)~~ to the list **of elective options for** ~~of~~ Theory/Pedagogy/History **courses.** ~~courses from which students are to select 12 hours.~~ **Update and clarify DANC 497 as senior capstone project.** ~~The addition of this course expands the range of choices for students and does not change the number of hours required for the degree.~~

Is this program available on campus and online?	No
Official Program Name	Dance, BA
Banner/Codebook Name	BA:Dance -UIUC
Corresponding Degree	BA Bachelor of Arts
Program Code:	10KR0261BA

Major Code	Minor Code	Conc Code	Degree Code
0261			BA

EP Control Number	**EP.20.42** ~~ep.19.31~~
Senate Approval Date	~~12/10/18~~
Senate Conference Approval Date	~~1/24/19~~
BOT Approval Date	~~n/a~~
IBHE Approval Date	~~n/a~~
Effective Date:	~~1/28/19~~
Effective Catalog Term	Spring 2020
Sponsor College	Fine & Applied Arts
Sponsor Department	Dance
Sponsor Name	**John Toenjes**
Sponsor Email	**jtoenjes@illinois.edu**
College Contact	**Nicole Turner**
College Contact Email	**nicturn@illinois.edu**

Is this program interdisciplinary?

No

Academic Level	Undergraduate
Will you admit to the concentration directly?	
Is a concentration required for graduation?	
CIP Code	500301 - Dance, General.

Program Description and Justification

Justification for proposal change:

Add DANC 125, Black Dances of Resistance (3 hours) to the list of Theory/Pedagogy/History courses from which students are to select 12 hours. The addition of this course expands the range of choices for students and does not change the number of hours required for the degree.

DANC 497 course changes were recently approved regarding credit hours and repeatability, which has been clarified on the catalog page as the senior capstone project. ~~Transistion admin Approval:~~

Is This a Teacher Certification Program?

No

Will specialized accreditation be sought for this program?

No

Admission Requirements

Desired
Admissions Term

Provide a brief narrative description of the admission requirements for this program. Where relevant, include information about licensure requirements, student background checks, GRE and TOEFL scores, and admission requirements for transfer students.

Describe how critical academic functions such as admissions and student advising are managed.

Enrollment

Describe how this revision will impact enrollment and degrees awarded.

~~Transistion admin Approval:~~

Estimated Annual Number of Degrees Awarded

Year One Estimate	5th Year Estimate (or when fully implemented)

What is the matriculation term for this program?

Fall

Delivery Method

This program is available:
Face-to-Face

Budget

Are there budgetary implications for this revision? No

Will the program or revision require staffing (faculty, advisors, etc.) beyond what is currently available?
No

Additional Budget Information

Attach File(s)

Resource Implications

Facilities

Will the program require new or additional facilities or significant improvements to already existing facilities?
No

Technology

Will the program need additional technology beyond what is currently available for the unit?
No

Non-Technical Resources

Will the program require additional supplies, services or equipment (non-technical)?

No

Resources

Faculty Resources

Please address the impact on faculty resources including any changes in numbers of faculty, class size, teaching loads, student-faculty ratios, etc. Describe how the unit will support student advising, including job placement and/or admission to advanced studies.

~~Transistion admin Approval:~~

Library Resources

Describe your proposal's impact on the University Library's resources, collections, and services. If necessary please consult with the appropriate disciplinary specialist within the University Library.

~~Transistion admin Approval:~~

Instructional Resources

Will there be any reduction in other course offerings, programs or concentrations by your department as a result of this new program/proposed change?

No

Does this new program/proposed change result in the replacement of another program?

No

Does the program include other courses/subjects impacted by the creation/revision of this program?

No

Financial Resources

How does the unit intend to financially support this proposal?

Will the unit need to seek campus or other external resources?

No

Attach letters of support

Will an existing tuition rate be used or continue to be used for this program?

Yes

Program Regulation

Describe how the program is aligned with or meets licensure, certification, and/or entitlement requirements, if applicable.

Briefly describe the plan to assess and improve student learning, including the program's learning objectives; when, how, and where these learning objectives will be assessed; what metrics will be used to signify student's achievement of the stated learning objectives; and the process to ensure assessment results are used to improve student learning.

Is the career/profession for graduates of this program regulated by the State of Illinois?

No

Program of Study

"Baccalaureate degree requires at least 120 semester credit hours or 180 quarter credit hours and at least 40 semester credit hours (60 quarter credit hours) in upper division courses" (source: https://www.ibhe.org/assets/files/PrivateAdminRules2017.pdf). For proposals for new bachelor's degrees, if this minimum is not explicitly met by specifically-required 300- and/or 400-level courses, please provide information on how the upper-division hours requirement will be satisfied.

All proposals must attach the new or revised version of the Academic Catalog program of study entry. Contact your college office if you have questions.

Revised programs ~~ep1931.pdf~~
SIDE BY SIDE TO ADD DANC 125, edit DANC 497.docx

Attach a side-by-side comparison with the existing program AND, if the revision references or adds "chose-from" lists of courses students can select from to fulfill requirements, a listing of these courses, including the course rubric, number, title, and number of credit hours.

Catalog Page Text

Catalog Page Text: Description of program for the catalog page. This is not official content, it is used to help build the catalog pages for the program. Can be edited in the catalog by the college or department.

Statement for Programs of Study Catalog

Minimum hours required for graduation: 120 hours

Course List

Code	Title	Hours
General Education Requirements		
Composition I		4-6
Advanced Composition		3-4
Humanities & the Arts		6-8
Social & Behavioral Sciences		6-8
Cultural Studies: Non-Western Cultures		3-4

Code	Title	Hours
Cultural Studies: U.S. Minority Cultures		3-4
Cultural Studies: Western/Comparative Culture(s)		3-4
Natural Sciences & Technology		6-10
Quantitative Reasoning		6-9

The Language Requirement may be satisfied by:

-Successfully completing a third-semester college-level course in a language other than English;

-Successful completion, in high school, of the third year of a language other than English; or

-Demonstrating proficiency at the third-semester level in a language proficiency examination approved by the College of Liberal Arts and Sciences and the appropriate department.

Foundation Courses

FAA 101	Arts at Illinois	1
DANC 150	Orientation to Dance	2

Course List

Code	Title	Hours
Technique/Physical Practice		18
DANC 160	Beg Contemp Modern Tech Core (1-3 hours per enrollment, repeatable) 1	4
DANC 260	Int Contemp Modern Tech Core (1-3 hours per enrollment, repeatable) 1	4
Choose from the following:		10
DANC 160	Beg Contemp Modern Tech Core 1	
DANC 166	Beginning Ballet Tech Core	
DANC 167	Beginning Ballet Tech Elect	
DANC 260	Int Contemp Modern Tech Core 1	
DANC 210	Int Jazz Technique	
DANC 211	Int Hip Hop Technique	
DANC 215	Int Tap Dance Technique	
DANC 261	Int Contemp Modern Tech Elect	
DANC 266	Intermediate Ballet Tech Core	
DANC 267	Intermediate Ballet Tech Elect	
DANC 301	Yoga Fundamentals	
DANC 310	World Dance Forms	
DANC 360	Int/Adv Contemp Mod Tech Core	
DANC 361	Int/Adv Contemp Mod Tech Elect	
DANC 366	Int/Adv Ballet Tech Core	
DANC 367	Int/Adv Ballet Tech Elect	
DANC 401	Alexander Tech for Dancers	
DANC 402	Alexander Technique Practicum	
DANC 410	Advanced Jazz Technique	
DANC 411	Adv Hip Hop Technique	
DANC 460	Adv Contemp Modern Tech Core	
DANC 461	Adv Contemp Modern Tech Elect (Modern--variable credit)	
DANC 466	Advanced Ballet Tech Core	
DANC 467	Advanced Ballet Tech Elect (variable credit)	
Creative Process/Performance and Production		11
DANC 262	Choreographic Process I	2

Code	Title	Hours
DANC 362	Choreographic Process II	2
Choose 2 from the following Improvisation courses:		
DANC 259	Contact Improv for Act/Mus/Dan	
DANC 363	Advanced Improvisation	
DANC 459	Contact Improv Act/Mus/Dan II	
Choose 2 from the following Performance courses:		2
DANC 232	Repertory Company	
DANC 220	Perf Pract Student Works I	
DANC 221	Performance in Grad Thesis I	
DANC 222	Perf Pract November I	
DANC 223	Perf Pract February I	
DANC 420	Perf Pract Student Works II	
DANC 421	Performance in Grad Thesis II	
DANC 422	Perf Pract November II	
DANC 423	Perf Pract February II (Variable)	
DANC 424	Collaborative Performance	
Choose 3 from the following Production courses:		3
DANC 131	Production Practicum I	
DANC 231	Production Practicum II	
DANC 330	Dance Documentation (variable credits)	
DANC 331	Production Practicum III	
DANC 431	Production Practicum IV	
Dance Academics		18
Choose 6 hours from the following History courses:		6
DANC 100	Intro to Contemporary Dance	
DANC 240	Dance History	
DANC 441	Dance History Seminar	
Choose 12 hours from the following Theory/Pedagogy/History courses:		12
DANC 125	**Black Dances of Resistance**	
DANC 200	Explore Music through Dance	
DANC 441	Dance History Seminar (if not selected above)	
DANC 340	Dancing Black Popular Culture	
DANC 400	Viewing Dance	
DANC 268	Music Theory for Dancers	
DANC 245	Introduction to Somatics	
DANC 345	Dance Anatomy and Kinesiology	
DANC 450	Teaching Workshop	
DANC 350	Creative Dance for Children	
DANC 375	Production in Dance	
DANC 199	Undergraduate Open Seminar	
DANC 451	Ind Study and Special Topics	
~~Senior Capstone Project 2~~		~~3~~
DANC 497	**BA Capstone Project 2**	**3**
Hours in non-Dance classes, chosen in consultation with an advisor		15
Open electives as needed to total 120 hours minimum		120

1 DANC 160 and 260 must be taken for at least 4 hours each but are repeatable beyond 4 hours.
2Students will enroll in one credit hour of DANC 497, BA Capstone Project in fall of their senior year and two credit hours of DANC 497 in spring of their senior year for a total of three credit hours.

EP Documentation

Attach Rollback/Approval Notices

DMI Documentation

Attach Final Approval Notices ~~Implementation - Add course to requirements for BA degree.pdf~~

Attached Document

Justification for this request

Program Reviewer Comments

Deb Forgacs (dforgacs) (09/11/19 3:45 pm): Rollback: side-by-side comparison
Kathy Martensen (kmartens) (11/15/19 10:05 am): Admin approval: Does not change total hrs. req'd for the program, does not restrict options for students.

Key: 132

10KR0261BA : Dance, BA

Side-by-side to show:
addition of DANC 125 (PG 4)
DANC 497 clarification (PG 4)

PREVIOUS

Minimum hours required for graduation: 120 hours

Code	Title	Hours
General Education Requirements		
Composition I		4-6
Advanced Composition		3-4
Humanities & the Arts		6-8
Social & Behavioral Sciences		6-8
Cultural Studies: Non-Western Cultures		3-4
Cultural Studies: U.S. Minority Cultures		3-4
Cultural Studies: Western/Comparative Culture(s)		3-4
Natural Sciences & Technology		6-10
Quantitative Reasoning		6-9
The Language Requirement may be satisfied by:		
-Successfully completing a third-semester college-level course in a language other than English;		
-Successful completion, in high school, of the third year of a language other than English; or		
-Demonstrating proficiency at the third-semester level in a language proficiency examination approved by the College of Liberal Arts and Sciences and the appropriate department.		

NEW

Minimum hours required for graduation: 120 hours

Code	Title	Hours
General Education Requirements		
Composition I		4-6
Advanced Composition		3-4
Humanities & the Arts		6-8
Social & Behavioral Sciences		6-8
Cultural Studies: Non-Western Cultures		3-4
Cultural Studies: U.S. Minority Cultures		3-4
Cultural Studies: Western/Comparative Culture(s)		3-4
Natural Sciences & Technology		6-10
Quantitative Reasoning		6-9
The Language Requirement may be satisfied by:		
-Successfully completing a third-semester college-level course in a language other than English;		
-Successful completion, in high school, of the third year of a language other than English; or		
-Demonstrating proficiency at the third-semester level in a language proficiency examination approved by the College of Liberal Arts and Sciences and the appropriate department.		

PREVIOUS

Foundation Courses		
FAA 101	Arts at Illinois	
DANC 150	Orientation to Dance	
Technique/Physical Practice		**18**
DANC 160	Beg Contemp Modern Tech Core (1-3 hours per enrollment, repeatable) [1]	
DANC 260	Int Contemp Modern Tech Core (1-3 hours per enrollment, repeatable) [1]	
Choose from the following:		10
DANC 160	Beg Contemp Modern Tech Core [1]	
DANC 166	Beginning Ballet Tech Core	
DANC 167	Beginning Ballet Tech Elect	
DANC 260	Int Contemp Modern Tech Core [1]	
DANC 210	Int Jazz Technique	
DANC 211	Int Hip Hop Technique	
DANC 215	Int Tap Dance Technique	
DANC 261	Int Contemp Modern Tech Elect	
DANC 266	Intermediate Ballet Tech Core	
DANC 267	Intermediate Ballet Tech Elect	
DANC 301	Yoga Fundamentals	
DANC 310	World Dance Forms	
DANC 360	Int/Adv Contemp Mod Tech Core	
DANC 361	Int/Adv Contemp Mod Tech Elect	
DANC 366	Int/Adv Ballet Tech Core	
DANC 367	Int/Adv Ballet Tech Elect	
DANC 401	Alexander Tech for Dancers	
DANC 402	Alexander Technique Practicum	
DANC 410	Advanced Jazz Technique	
DANC 411	Adv Hip Hop Technique	
DANC 460	Adv Contemp Modern Tech Core	
DANC 461	Adv Contemp Modern Tech Elect (Modern--variable credit)	
DANC 466	Advanced Ballet Tech Core	
DANC 467	Advanced Ballet Tech Elect (variable credit)	

NEW

Foundation Courses		
FAA 101	Arts at Illinois	
DANC 150	Orientation to Dance	
Technique/Physical Practice		**18**
DANC 160	Beg Contemp Modern Tech Core (1-3 hours per enrollment, repeatable) [1]	
DANC 260	Int Contemp Modern Tech Core (1-3 hours per enrollment, repeatable) [1]	
Choose from the following:		10
DANC 160	Beg Contemp Modern Tech Core [1]	
DANC 166	Beginning Ballet Tech Core	
DANC 167	Beginning Ballet Tech Elect	
DANC 260	Int Contemp Modern Tech Core [1]	
DANC 210	Int Jazz Technique	
DANC 211	Int Hip Hop Technique	
DANC 215	Int Tap Dance Technique	
DANC 261	Int Contemp Modern Tech Elect	
DANC 266	Intermediate Ballet Tech Core	
DANC 267	Intermediate Ballet Tech Elect	
DANC 301	Yoga Fundamentals	
DANC 310	World Dance Forms	
DANC 360	Int/Adv Contemp Mod Tech Core	
DANC 361	Int/Adv Contemp Mod Tech Elect	
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DANC 367	Int/Adv Ballet Tech Elect	
DANC 401	Alexander Tech for Dancers	
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DANC 410	Advanced Jazz Technique	
DANC 411	Adv Hip Hop Technique	
DANC 460	Adv Contemp Modern Tech Core	
DANC 461	Adv Contemp Modern Tech Elect (Modern--variable credit)	
DANC 466	Advanced Ballet Tech Core	
DANC 467	Advanced Ballet Tech Elect (variable credit)	

PREVIOUS

Creative Process/Performance and Production		**11**
DANC 262	Choreographic Process I	
DANC 362	Choreographic Process II	
Choose 2 from the following Improvisation courses:		
DANC 259	Contact Improv for Act/Mus/Dan	
DANC 363	Advanced Improvisation	
DANC 459	Contact Improv Act/Mus/Dan II	
Choose 2 from the following Performance courses:		
DANC 232	Repertory Company	
DANC 220	Perf Pract Student Works I	
DANC 221	Performance in Grad Thesis I	
DANC 222	Perf Pract November I	
DANC 223	Perf Pract February I	
DANC 420	Perf Pract Student Works II	
DANC 421	Performance in Grad Thesis II	
DANC 422	Perf Pract November II	
DANC 423	Perf Pract February II (Variable)	
DANC 424	Collaborative Performance	
Choose 3 from the following Production courses:		3
DANC 131	Production Practicum I	
DANC 231	Production Practicum II	
DANC 330	Dance Documentation (variable credits)	
DANC 331	Production Practicum III	
DANC 431	Production Practicum IV	

NEW

Creative Process/Performance and Production		**11**
DANC 262	Choreographic Process I	
DANC 362	Choreographic Process II	
Choose 2 from the following Improvisation courses:		
DANC 259	Contact Improv for Act/Mus/Dan	
DANC 363	Advanced Improvisation	
DANC 459	Contact Improv Act/Mus/Dan II	
Choose 2 from the following Performance courses:		
DANC 232	Repertory Company	
DANC 220	Perf Pract Student Works I	
DANC 221	Performance in Grad Thesis I	
DANC 222	Perf Pract November I	
DANC 223	Perf Pract February I	
DANC 420	Perf Pract Student Works II	
DANC 421	Performance in Grad Thesis II	
DANC 422	Perf Pract November II	
DANC 423	Perf Pract February II (Variable)	
DANC 424	Collaborative Performance	
Choose 3 from the following Production courses:		3
DANC 131	Production Practicum I	
DANC 231	Production Practicum II	
DANC 330	Dance Documentation (variable credits)	
DANC 331	Production Practicum III	
DANC 431	Production Practicum IV	

PREVIOUS

Dance Academics		**18**
Choose 6 hours from the following History courses:		6
DANC 100	Intro to Contemporary Dance	
DANC 240	Dance History	
DANC 441	Dance History Seminar	
Choose 12 hours from the following Theory/Pedagogy/History courses:		12
DANC 200	Explore Music through Dance	
DANC 441	Dance History Seminar (if not selected above)	
DANC 340	Dancing Black Popular Culture	
DANC 400	Viewing Dance	
DANC 268	Music Theory for Dancers	
DANC 245	Introduction to Somatics	
DANC 345	Dance Anatomy and Kinesiology	
DANC 450	Teaching Workshop	
DANC 350	Creative Dance for Children	
DANC 375	Production in Dance	
DANC 199	Undergraduate Open Seminar	
DANC 451	Ind Study and Special Topics	
Senior Capstone Project [2]		**3**
Hours in non-Dance classes, chosen in consultation with an advisor		**15**
Open electives as needed to total 120 hours minimum		**120**

Course List

[1] DANC 160 and 260 must be taken for at least 4 hours each but are repeatable beyond 4 hours.

[2] DANC 497, Senior Capstone Project, is a new course expected to be available by the start of the Fall, 2015 semester.

NEW

Dance Academics		**18**
Choose 6 hours from the following History courses:		6
DANC 100	Intro to Contemporary Dance	
DANC 240	Dance History	
DANC 441	Dance History Seminar	
Choose 12 hours from the following Theory/Pedagogy/History courses:		12
DANC 125	Black Dances of Resistance	
DANC 200	Explore Music through Dance	
DANC 441	Dance History Seminar (if not selected above)	
DANC 340	Dancing Black Popular Culture	
DANC 400	Viewing Dance	
DANC 268	Music Theory for Dancers	
DANC 245	Introduction to Somatics	
DANC 345	Dance Anatomy and Kinesiology	
DANC 450	Teaching Workshop	
DANC 350	Creative Dance for Children	
DANC 375	Production in Dance	
DANC 199	Undergraduate Open Seminar	
DANC 451	Ind Study and Special Topics	
DANC 497	BA Capstone Project[2]	**3**
Hours in non-Dance classes, chosen in consultation with an advisor		**15**
Open electives as needed to total 120 hours minimum		**120**

Course List

[1] DANC 160 and 260 must be taken for at least 4 hours each but are repeatable beyond 4 hours.

[2] Students will enroll in one credit hour of DANC 497, BA Capstone Project in fall of their senior year and two credit hours of DANC 497 in spring of their senior year for a total of three credit hours.

Date Submitted: 11/13/19 10:11 am

Viewing: **10KL5560BS : Crop Sciences: Horticultural Food Systems, BS**

Last approved: 11/12/19 4:54 pm

Last edit: 11/15/19 2:06 pm

Changes proposed by: Scott Bartlett

Catalog Pages Using this Program	Crop Sciences: Horticultural Food Systems, BS

In Workflow

1. **U Program Review**
2. **1802 Committee Chair**
3. **1802 Head**
4. **KL Committee Chair**
5. **KL Dean**
6. **University Librarian**
7. **Provost**
8. **Senate EPC**
9. Senate
10. U Senate Conf
11. Board of Trustees
12. IBHE
13. DMI

Approval Path

1. 11/13/19 11:18 am
   Deb Forgacs (dforgacs):
   Approved for U Program Review
2. 11/13/19 11:36 am
   Lane Rayburn (arayburn):
   Approved for 1802 Committee Chair
3. 11/13/19 5:13 pm
   Adam Davis (asdavis1):
   Approved for 1802 Head
4. 11/14/19 11:27 am
   Anthony Yannarell (acyann):

Approved for KL Committee Chair
5. 11/14/19 12:20 pm
Anna Ball (aball): Approved for KL Dean
6. 11/14/19 2:48 pm
John Wilkin (jpwilkin): Approved for University Librarian
7. 11/15/19 10:05 am
Kathy Martensen (kmartens): Approved for Provost

History

1. Jan 18, 2019 by Deb Forgacs (dforgacs)
2. Nov 12, 2019 by Deb Forgacs (dforgacs)

Proposal Type

Proposal Type:
Concentration (ex. Dietetics)

This proposal is for a:
Revision

Proposal Title:

if this proposal is one piece of a multi-element change please include the other impacted programs here. *example: A BS revision with multiple concentration revisions*

Administrative approval: Update Crop Sciences concentration to remove deactivated course. ~~Admin save correct title.~~

Is this program available on No

campus and online?

Official Program Name	Crop Sciences: Horticultural Food Systems, BS
Banner/Codebook Name	BS:Crop Sciences - HFS -UIUC
Program Code:	10KL5560BS

Major Code	0030	Minor Code		Conc Code	5560 Degree Code

EP Control Number	**EP.20.42** ~~EP.19.11~~
Senate Approval Date	
Senate Conference Approval Date	
BOT Approval Date	
IBHE Approval Date	
Effective Date:	
Effective Catalog Term	Fall 2019
Sponsor College	Agr, Consumer, & Env Sciences
Sponsor Department	Crop Sciences

Sponsor Name	Sponsor Email
College Contact	College Contact Email

Is this program interdisciplinary?

No

Corresponding Program(s):

Corresponding Program(s)
Crop Sciences, BS

Academic Level Undergraduate

Additional concentration notes (e.g., estimated enrollment, advising plans, etc.)

CIP Code

Program Description and Justification

Justification for proposal change:

Crop Sciences has deactivated HORT 298. We are removing this course from the list of options within the concentration.

Is This a Teacher Certification Program?
No

Will specialized accreditation be sought for this program?

No

Enrollment

Describe how this revision will impact enrollment and degrees awarded.

Delivery Method

This program is available:
Face-to-Face

Budget

Are there budgetary implications for this revision? No

Will the program or revision require staffing (faculty, advisors, etc.) beyond what is currently available?

No

Additional Budget Information

Attach File(s)

Resource Implications

Facilities

Will the program require new or additional facilities or significant improvements to already existing facilities?

No

Technology

Will the program need additional technology beyond what is currently available for the unit?

No

Non-Technical Resources

Will the program require additional supplies, services or equipment (non-technical)?

No

Resources

Faculty Resources

Please address the impact on faculty resources including any changes in numbers of faculty, class size, teaching loads, student-faculty ratios, etc. Describe how the unit will support student advising, including job placement and/or admission to advanced studies.

Library Resources

Describe your proposal's impact on the University Library's resources, collections, and services. If necessary please consult with the appropriate disciplinary specialist within the University Library.

Instructional Resources

Will there be any reduction in other course offerings, programs or concentrations by your department as a result of this new program/proposed change?

No

Does this new program/proposed change result in the replacement of another program?

No

Does the program include other courses/subjects impacted by the creation/revision of this program?

No

Financial Resources

How does the unit intend to financially support this proposal?

See attached.

Will the unit need to seek campus or other external resources?

No

Attach letters of support

Program Regulation

Describe how the program is aligned with or meets licensure, certification, and/or entitlement requirements, if applicable.

Briefly describe the plan to assess and improve student learning, including the program's learning objectives; when, how, and where these learning objectives will be assessed; what metrics will be used to signify student's achievement of the stated learning objectives; and the process to ensure assessment results are used to improve student learning.

See attached.

Is the career/profession for graduates of this program regulated by the State of Illinois?

No

Program of Study

"Baccalaureate degree requires at least 120 semester credit hours or 180 quarter credit hours and at least 40 semester credit hours (60 quarter credit hours) in upper division courses" (source: https://www.ibhe.org/assets/files/PrivateAdminRules2017.pdf). For proposals for new bachelor's degrees, if this minimum is not explicitly met by specifically-required 300- and/or 400-level courses, please provide information on how the upper-division hours requirement will be satisfied.

All proposals must attach the new or revised version of the Academic Catalog program of study entry. Contact your college office if you have questions.

Revised programs — Attach a side-by-side comparison with the existing program AND, if the revision references or adds "chose-from" lists of courses students can select from to fulfill requirements, a listing

of these courses, including the course rubric, number, title, and number of credit hours.

Catalog Page Text

Catalog Page Text: Description of program for the catalog page. This is not official content, it is used to help build the catalog pages for the program. Can be edited in the catalog by the college or department.

Statement for Programs of Study Catalog

Concentration Requirements

Course List		
Code	Title	Hours
Natural Science and Technology Required		15-16
CHEM 102	General Chemistry I	
& CHEM 103	and General Chemistry Lab I	
CHEM 104	General Chemistry II	
& CHEM 105	and General Chemistry Lab II	
CHEM 232	Elementary Organic Chemistry I	
or CPSC 382	Organic Chem of Biol Processes	
IB 103	Introduction to Plant Biology	
Concentration Required Core Courses:		28
CPSC 102	Research in Crop Sciences	
CPSC 226	Introduction to Weed Science	
CPSC 270	Applied Entomology	
CPSC 498	Crop Sci Professional Develpmt	
HORT 100	Introduction to Horticulture	
HORT 240	Plant Propagation	
HORT 360	Vegetable Crop Production	
HORT 361	Small Fruit Production	
HORT 362	Tree Fruit Production	
NRES 201	Introductory Soils	
PLPA 204	Introductory Plant Pathology	
Select 7 or 8 hours from the following specialized courses:		7-8
CPSC 352	Plant Genetics	
HORT 341	Greenhouse Mgmt and Production	
HORT 442	Plant Nutrition	
CPSC 484	Plant Physiology	
or IB 420	Plant Physiology	
NRES 438	Soil Nutrient Cycling	
or NRES 488	Soil Fertility and Fertilizers	
Select 15 hours from the following focus area electives:		15
ACE 231	Food and Agribusiness Mgt	
CPSC 261	Biotechnology in Agriculture	

Code	Title	Hours
CPSC 431	Plants and Global Change	
CPSC 437	Principles of Agroecology	
HORT 180	Medicinal Plants and Herbology	
HORT 205	Local Food Networks	
~~HORT 298~~	~~Course HORT 298 Not Found~~	
HORT 301	Woody Landscape Plants	
HORT 341	Greenhouse Mgmt and Production 1	
HORT 344	Planting for Biodiversity and Aesthetics	
HORT 363	Postharvest Handling Hort Crop	
HORT 421	Horticultural Physiology 1	
HORT 434	Designing Urban Agriculture	
HORT 435	Urban Food Production	
HORT 442	Plant Nutrition 1	
HORT 447	Horticultural Plant Breeding	
HORT 475	Permaculture & Agroforestry	
TSM 311	Humanity in the Food Web	
Total ACES prescribed and elective hours must total 35 hours, of which 20 must be completed in residence.		
Total Required Concentration Hours:		50-51

1 *May only be applied here if not used as a Specialized Course.*

EP Documentation

Attach Rollback/Approval Notices

DMI Documentation

Attach Final Approval Notices

Attached Document

Justification for this request

Program Reviewer Comments

Kathy Martensen (kmartens) (11/15/19 10:05 am): Admin approval, does not change total hrs. req'd, does not restrict options for students.

Key: 536

UNIVERSITY OF ILLINOIS
AT URBANA-CHAMPAIGN

EP.19.11

Office of the Provost and Vice Chancellor
for Academic Affairs

Swanlund Administration Building
601 East John Street
Champaign, IL 61820

September 21, 2018

Gay Miller, Chair
Senate Committee on Educational Policy
Office of the Senate
228 English Building, MC-461

Dear Professor Miller:

Enclosed is a copy of a proposal from the College of Agricultural, Consumer and Environmental Sciences to revise the Horticultural Food Systems concentration in the Bachelor of Science in Crop Sciences.

Sincerely,

Kathryn A. Martensen
Assistant Provost

Enclosures

c: D. Rosch
S. Bartlett
A. Davis
S. Lovell
M. Lowry
R. Chappell

telephone (217) 333-6677 • *fax* (217) 244-5639

UNIVERSITY OF ILLINOIS
AT URBANA-CHAMPAIGN

College of Agricultural, Consumer
and Environmental Sciences

Academic Programs
128 Mumford Hall, MC-710
1301 West Gregory Drive
Urbana, IL 61801

September 21, 2018

Kathy Martensen, Assistant Provost
Office of the Provost
207 Swanlund Administration Building
Campus MC-304

Dear Kathy:

I am writing to request campus-level approval for a proposal to revise the curriculum of the Horticultural Food Systems concentration within the undergraduate major in Crop Sciences. The enclosed proposal (in Senate format) has been reviewed and approved by the College of ACES Courses and Curricula Committee.

Thank you for your consideration. I look forward to receiving your reply.

Sincerely,

David M. Rosch
Interim Associate Dean
ACES Academic Programs

DMR/rhc

cc: S. E. Bartlett
A. Davis
S. T. Lovell
M. K. Lowry
CPSC C&C Binder

ILLINOIS

Proposal to the Senate Educational Policy Committee

PROPOSAL TITLE: Revise the Horticultural Food Systems Concentration within the Crop Sciences Major for the Bachelor of Science Degree, in the Department of Crop Sciences, College of ACES

SPONSOR: Dr. Sarah Lovell, Associate Professor in Crop Sciences and Undergraduate Program Coordinator, Phone: 217-244-3433, Email: stlovell@illinois.edu

COLLEGE CONTACT: Mary Lowry, Assistant Dean, Office of Academic Programs, College of ACES, Phone: 217-333-9391, Email: lowry@illinois.edu

BRIEF DESCRIPTION: The Department of Crop Sciences proposes revisions to the curriculum of the Horticultural Food Systems concentration of the Crop Sciences Major. The changes include: adding a new required course; creating new categories of "Specialized Courses" and "Focus Area Electives" to better describe the options; moving several courses from the "Required" section to a "Specialized courses" section to allow greater flexibility in scheduling and in allowing students to specialize in certain areas; and removing courses that have been deactivated or considered less applicable. There are no changes to the major being proposed, and the number of hours required for graduation is also not changing.

Specifically, the purpose of each change is as follows (line numbers matching the table found in Appendix A):

- Line 10: Updated number of hours to reflect changes, and new totals are more consistent with other concentrations
- Line 12: A new course was developed to be required by all majors
- Lines 13, 15, 17, 21, 25, 27, 29: Moved to "specialized courses" section to allow more flexibility in scheduling and in specializing
- Line 28: Course is less applicable to our students than other soils classes
- Line 32: New section added to allow flexibility, including most courses removed from the concentration required section
- Lines 33, 34, 38, 3: Course added (moved from above section "Concentration Required"
- Lines 35, 36: Courses appropriate to specialization
- Line 41: Changed to specify "Focus Area Electives" as more specific grouping
- Line 42, 43: Moved from above section "Concentration Required"

- Lines 50, 54, 57: Optional courses also available in "Specialized Course" section, but must include note "May only be applied here if not used as 'Specialized Course'" to avoid a single course to meet two different requirements.
- Line 51, 59, 61: Courses removed because they have been deactivated
- Line 62: Course added because it is appropriate to the concentration

JUSTIFICATION: The revisions to this concentration will allow students greater flexibility in scheduling coursework and in specializing on certain topic areas. The previous version of the concentration was highly specific, with many specifically required courses. That situation caused course conflicts and sometimes resulted in a student being delayed a semester in completing the program.

BUDGETARY AND STAFF IMPLICATIONS:

1) Resources
   a. How does the unit intend to financially support this proposal?

      This proposal requires no additional resources, because it is primarily a re-grouping of courses already required in the concentration, and includes only existing courses.

   b. How will the unit create capacity or surplus to appropriately resource this program? If applicable, what functions or programs will the unit no longer support to create capacity?

      For this proposal, no additional capacity or surplus is expected.

   c. Will the unit need to seek campus or other external resources? If so, please provide a summary of the sources and an indication of the approved support.

      The unit will not need campus or external resources for these revisions.

   d. Please provide a letter of acknowledgment from the college that outlines the financial arrangements for the proposed program.

      A letter is attached as Appendix B.

2) Resource Implications
   a. Please address the impact on faculty resources including the changes in numbers of faculty, class size, teaching loads, student-faculty ratios, etc.

      These revisions are not expected to impact faculty resources, because they draw from the same courses for students that we currently have.

   b. Please address the impact on course enrollment in other units and provide an explanation of discussions with representatives of those units.

Enrollment in certain courses (those previously "Specifically required") may drop by 2-4 students, but those are primarily within our own unit and would likely be redistributed within the unit. A letter from the ABE department allowing the addition of TSM 311 and a letter from IB allowing the addition of IB 420 are attached as Appendix C. All other courses in the concentration are within the Department of Crop Sciences.

c. Please address the impact on the University Library

We expect the impact on the University Library to remain at the same level, and a letter of support from them is included as Appendix D.

d. Please address the impact on technology and space (e.g. computer use, laboratory use, equipment, etc.)

We do not expect an impact on technology and space, since the number of students in each of the course would remain within the typical range.

DESIRED EFFECTIVE DATE:

Spring 2019

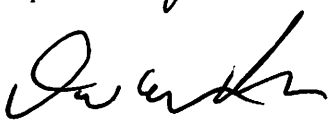
STATEMENT FOR PROGRAMS OF STUDY CATALOG: Because the nature of the concentration is not changing, there will not be any change to the catalog text.

CLEARANCES: *(Clearances should include signatures and dates of approval.* ***These signatures must appear on a separate sheet.*** *If multiple departments or colleges are sponsoring the proposal, please add the appropriate signature lines below.)*

Signatures:

Unit Representative

Date: 9/20/18



College Representative:

Date: 9/20/18

Graduate College Representative:

Date:

Council on Teacher Education Representative:

Date:

Appendix A: Comparison of Current and Proposed Horticultural Food Systems Concentration

	Current Requirements:	Current Hours	Revised Requirements:	Revised Hours
1	Natural Science and Technology Required	15-16	Natural Science and Technology Required	15-16
2	CHEM 102: General Chemistry I		CHEM 102: General Chemistry I	
3	& CHEM 103: and General Chemistry Lab I		& CHEM 103: and General Chemistry Lab I	
4	CHEM 104: General Chemistry II		CHEM 104: General Chemistry II	
5	& CHEM 105: and General Chemistry Lab II		& CHEM 105: and General Chemistry Lab II	
6	CHEM 232: Elementary Organic Chemistry I		CHEM 232: Elementary Organic Chemistry I	
7	or CPSC 382: Organic Chem of Biol Processes		or CPSC 382: Organic Chem of Biol Processes	
8	IB 103: Introduction to Plant Biology		IB 103: Introduction to Plant Biology	
9				
10	Horticultural Food Systems Concentration Required	63	Horticultural Food Systems Concentration Required	50-51
11			Horticultural Food Systems Concentration Required Core:	28
12			(Add) CPSC 102: Research in Crop Sciences (1 hr.)	
13	ACE 231: Food and Agribusiness Mgt			
14	CPSC 226: Introduction to Weed Science		CPSC 226: Introduction to Weed Science (3 hrs.)	
15	CPSC 261: Biotechnology in Agriculture			
16	CPSC 270: Applied Entomology		CPSC 270: Applied Entomology (3 hrs.)	
17	CPSC 352: Plant Genetics			
18	CPSC 498: Crop Sci Professional Develpmt		CPSC 498: Crop Sci Professional Develpmt (1 hr.)	
19	HORT 100: Introduction to Horticulture		HORT 100: Introduction to Horticulture (3 hrs.)	
20	HORT 240: Plant Propagation		HORT 240: Plant Propagation (3 hrs.)	
21	HORT 341: Greenhouse Mgmt and Production			
22	HORT 360: Vegetable Crop Production		HORT 360: Vegetable Crop Production (3 hrs.)	
23	HORT 361: Small Fruit Production		HORT 361: Small Fruit Production (2 hrs.)	
24	HORT 362: Tree Fruit Production		HORT 362: Tree Fruit Production (2 hrs.)	
25	HORT 421: Horticultural Physiology			
26	NRES 201: Introductory Soils		NRES 201: Introductory Soils (3 hrs.)	
27	NRES 438: Soil Nutrient Cycling			
28	or NRES 474: Soil and Water Conservation			
29	or NRES 488: Soil Fertility and Fertilizers			
30	PLPA 204: Introductory Plant Pathology		PLPA 204: Introductory Plant Pathology (3 hrs.)	
31				

32			**(Add) Select 7 or 8 hours from the following specialized courses:**	7-8
33			(Add) CPSC 352: Plant Genetics (4 hrs.)	
34			(Add) HORT 341: Greenhouse Mgmt and Production (4 hrs.)	
35			(Add) HORT 442: Plant Nutrition (4 hrs.)	
36			(Add) IB 420 or CPSC 484: Plant Physiology	
37			or HORT 421 Horticultural Physiology (3 or 4 hrs.)	
38			(Add) NRES 438: Soil Nutrient Cycling (3 hrs.)	
39			(Add) or NRES 488: Soil Fertility and Fertilizers (3 hrs.)	
40				
41	Select 15 hours from the following:		**(Add) Select 15 hours from the following focus area electives:**	15
42			(Add) ACE 231: Food and Agribusiness Mgt (3 hrs.)	
43			(Add) CPSC 261: Biotechnology in Agriculture (3 hrs.)	
44	CPSC 431: Plants and Global Change		CPSC 431: Plants and Global Change (4 hrs.)	
45	CPSC 437: Principles of Agroecology		CPSC 437: Principles of Agroecology (3 hrs.)	
46	HORT 180: Medicinal Plants and Herbology		HORT 180: Medicinal Plants and Herbology (3 hrs.)	
47	HORT 205: Local Food Networks		HORT 205: Local Food Networks (3 hrs.)	
48	HORT 298: Undergraduate Seminar		HORT 298: Undergraduate Seminar (1 to 3 hrs.)	
49	HORT 301: Woody Landscape Plants I		HORT 301: Woody Landscape Plants I (4 hrs.)	
50			(Add) HORT 341: Greenhouse Mgmt and Production* (4 hrs.)	
51	**HORT 343: Deactivated Course**			
52	HORT 344: Planting for Biodiversity and Aesthetics		HORT 344: Planting for Biodiversity and Aesthetics (3 hrs.)	
53	HORT 363: Postharvest Handling Hort Crop		HORT 363: Postharvest Handling Hort Crop (2 hrs.)	
54			(Add) HORT 421: Horticultural Physiology* (4 hrs.)	
55	HORT 434: Designing Urban Agriculture		HORT 434: Designing Urban Agriculture (2 hrs.)	
56	HORT 435: Urban Food Production		HORT 435: Urban Food Production (3 hrs.)	
57	HORT 442: Plant Nutrition		HORT 442: Plant Nutrition * (4 hrs.)	
58	HORT 447: Horticultural Plant Breeding		HORT 447: Horticultural Plant Breeding (3 hrs.)	
59	**HORT 464: Deactivated Course**			
60	HORT 475: Permaculture & Agroforestry		HORT 475: Permaculture & Agroforestry (3 hrs.)	
61	**HORT 482: Deactivated Course**			
			(Add) TSM 311: Humanity in the Food Web (3 hrs.)	
	Total ACES prescribed and elective hours must total 35 hours, of which 20 must be completed in residence.		Total ACES prescribed and elective hours must total 35 hours, of which 20 must be completed in residence.	

*** May only be applied here if not used as a Specialized Course.**

Appendix B:

ILLINOIS

COLLEGE OF AGRICULTURAL, CONSUMER AND ENVIRONMENTAL SCIENCES

Academic Programs
128 Mumford Hall, MC-710
1301 W. Gregory Drive
Urbana, IL 61801

August 6, 2018

To Whom It May Concern:

I am writing in support of the proposal to make revisions to the concentration in Horticultural Food Systems offered under the major in Crop Sciences, in the Department of Crop Sciences, proposed by Dr. Sarah Lovell. The program has not requested funding from the college to support these revisions, and none has been made available. The courses already exist and we don't expect to need to increase capacity due to the proposed changes. If you have any questions, please contact me.

Sincerely,

Prasanta Kalita

Professor and Associate Dean

Appendix C:

ILLINOIS

COLLEGE OF AGRICULTURAL, CONSUMER AND ENVIRONMENTAL SCIENCES

Department of Agricultural & Biological Engineering
338 Agriculture Engineering Sciences Building, MC-644
1304 W. Pennsylvania Ave.
Urbana, IL 61801

August 14, 2018

Dr. Sarah Lovell
Associate Professor of Landscape Agroecology
Undergraduate Program Coordinator
Department of Crop Sciences
University of Illinois
stlovell@illinois.edu

Dear Sarah,

I approve your request to include TSM 311 Humanity in the Food Web, in your proposal to the Senate Educational Policy Committee for the revision of the Horticultural Food Systems Concentration within the Crop Sciences Major as an additional, optional course.

As a consequence, it is estimated that enrollment in the course would increase by 2-4 students each term it is offered. These numbers, and more, can readily be accommodated.

I wish you success with your proposal!

Sincerely,

Alan Hansen

Alan C. Hansen
Professor and Interim Head
Department of Agricultural and Biological Engineering
achansen@illinois.edu

UNIVERSITY OF ILLINOIS
AT URBANA-CHAMPAIGN

School of Integrative Biology
286 Morrill Hall
505 South Goodwin Avenue
Urbana, IL 61801

August 10, 2018

Dr. Sarah Lovell
Associate Professor of Landscape Agroecology
Undergraduate Program Coordinator
Department of Crop Sciences
University of Illinois
stlovell@illinois.edu

Dear Sarah,

I approve your request to include IB 420 (CPSC 484), Plant Physiology, in your proposal to the Senate Educational Policy Committee for the revision of the Horticultural Food Systems Concentration within the Crop Sciences Major as an additional, optional course.

As a consequence, it is estimated that enrollment in the course would increase by 2-4 students each term it is offered. These numbers, and more, can readily be accommodated.

I wish you success with your proposal!

Sincerely yours,

S. Downie

Stephen R. Downie
Associate Director of Academic Affairs
School of Integrative Biology
sdownie@illinois.edu

Appendix D:

UNIVERSITY OF ILLINOIS
AT URBANA-CHAMPAIGN

University Library
Office of University Librarian and Dean of Libraries
230 Main Library, MC-522
1408 West Gregory Drive
Urbana, IL 61801

August 21, 2018

Dr. Sarah Lovell
Associate Professor and Undergraduate Program Coordinator
Crop Sciences
1009 Plant Science Lab
M/C 634

Dear Prof. Lovell:

The University Library recently received a proposal from you outlining the Crop Sciences department's plans to revise the Horticultural Food Systems Concentration within the Crop Sciences Major for the Bachelor of Science Degree, in the Department of Crop Sciences, College of ACES.

Based upon the documents received and reviewed by Sarah Williams in the Funk ACES Library, it is our belief that there will be no impact on the University Library. We are already supporting this program and see no meaningful changes in our operations as a result of this move.

If additional services or materials are required as the programs further develop, we will be happy to discuss those needs as they emerge.

Sincerely,

John Wilkin
Juanita J. and Robert E. Simpson
Dean of Libraries and University Librarian

e-c: Mary Lowry, Assistant Dean for Student Success, College of ACES
Thomas Teper
Sarah Williams