Date Submitted: 01/05/22 11:05 am

Viewing: 10KP0408BS : Bioengineering, BS

Last approved: 10/08/21 12:49 pm

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Changes proposed by: Maddie Darling

Catalog Pages Using this Program	Bioengineering, BS

Proposal Type:

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. HLC
13. DMI

Approval Path

1. 01/05/22 2:43 pm
   Deb Forgacs (dforgacs): Approved for U Program Review
2. 01/05/22 3:05 pm
   Mark Anastasio (maa): Approved for 1343 Head
3. 02/03/22 11:40 am
   Brooke Newell (bsnewell): Approved for KP Committee Chair
4. 02/03/22 11:47 am
   Candy Deaville (candyd): Approved for KP Dean
5. 02/03/22 11:56 am
   John Wilkin

(jpwilkin): Approved for University Librarian
6. 02/03/22 4:16 pm 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)
6. Jan 27, 2020 by Maddie Darling (darling4)
7. Apr 2, 2020 by Maddie Darling (darling4)
8. Apr 16, 2021 by Maddie Darling (darling4)
9. Oct 8, 2021 by Brooke Newell (bsnewell)

Major (ex. Special Education)

This proposal is for a:
Revision

Administration Details

Official Program	Bioengineering, BS

Name	
Sponsor College	Grainger College of Engineering
Sponsor Department	Bioengineering
Sponsor Name	Maddie Darling
Sponsor Email	darling4@illinois.edu
College Contact	Jonathan Makela
College Contact Email	jmakela@illinois.edu
College Budget Officer	Tessa Hile
College Budget Officer Email	tmhile@illinois.edu

List the role for rollbacks (which role will edit the proposal on questions from EPC, e.g., Dept Head or Initiator) and/or any additional stakeholders. *Purpose: List here who will do the editing work if proposal needs rolled back. And any other stakeholders.*

Brooke Newell (bsnewell@illinois.edu), GCOE; Maddie Darling (darling4@illinois.edu), BIOE

Does this program have inter-departmental administration?

No

Proposal Title

Effective Catalog Term	Fall 2022

Provide a brief, concise description (not justification) of your proposal.

Removed Liberal Education Electives, updated number of free elective hours, added ENG 300 as an option instead of ENG 100 for off-campus transfer students, and moved foot notes into the Program of Study Table (to improve accessibility). Clarified existing language regarding technical/track elective hours and the option to complete CS 101 or CS 124 in the program of study. Removed CS 101 from the computational track elective list, replaced with CS 128.

List here any related proposals/revisions and their keys. *Example: This BS proposal (key 567) is related to the Concentration A proposal (key 145) and the Concentration B proposal (key 203).*

Program Justification

Why are these changes necessary?

After careful analysis of programs of studies, various requirements, and course selection for students in The Grainger College of Engineering, we have decided to provide additional flexibility to all engineering undergraduate students by increasing the number of free elective hours in all engineering programs. While the actual number of credit hours for free electives varies by program, within the college - 8 programs currently provide only 6 credit hours for free electives while an additional 2 have less than 10 - only 4 programs have more than 10 free elective credits. This lack of free elective credit hours limits students' abilities to efficiently pursue minors, certificates, and other educational opportunities and potentially limits those opportunities only to students coming in with significant AP credit or similar.

The additional free elective credit hours added to the program of study are obtained through the removal of The Grainger College of Engineering's Liberal Education requirement, which required engineering students to take an additional 6 credit hours above-and-beyond the campus' General Education requirement from the Humanities & the Arts, Social & Behavioral Sciences, or a college-curated list of courses. Over time, the Liberal Education requirement has been revised within the college, successively relaxing restrictions and providing additional choice to students (i.e., removal of a sequencing requirement in 1999; addition of the college-curated course list in 2010). Simultaneously, the college-curated list of courses continued to expand to include courses from approximately 120 rubrics across campus (including within The Grainger College of Engineering), gradually removing constraints to allow greater flexibility of choice for students to take advantage of the many opportunities the campus has to offer. Still, in its current form, this additional college-level requirement constrains student choice and interferes with their ability to efficiently pursue minors, certificates, and other educational opportunities across campus unless those opportunities intersect with coursework in the Liberal Education requirement.

Simultaneously, the required engineering orientation course, ENG 100, will be granted 1-credit hour. Previously, this course was a 0-credit course. The allocation of 1-credit appropriately recognizes the time and commitment expected of all students who take this course. In the 1-credit version of ENG 100, content will be added to improve teamwork and interpersonal skills, including topics related to diversity, equity, and inclusion (DEI). The engineering accrediting agency, ABET, will soon be adding DEI requirements for accredited programs. This component of ENG 100 is therefore beneficial to all Grainger Engineering programs and students by providing a common framework on which additional DEI topics can build throughout a student's program of study.

CS 101 was removed from the computational track and CS 128 was included in its place. CS 101 was listed erroneously in the comptuational track previously, CS 125 was the requirement. Due to prerequsite revisions, CS 125 is no longer an option for students, and instead bioengineering will award track elective credit for CS 128. CS 124 is not awarded technical credit, as it is considered the basic computational requirement for the BIOE-BS program computational track students.

ENG 300 is currently offered as an alternative to ENG 100 for off-campus transfer students. Bioengineering will welcome its first group of off-campus transfer students

effective Fall 2022, which requires the addition of ENG 300 as an or option to ENG 100 in our program.

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

Yes

Required courses

CS 128 - Intro to Computer Science II
CS 124 - Intro to Computer Science I
CS 225 - Data Structures

Explain how the inclusion or removal of the courses/subjects listed above impacts the offering departments.

The current Liberal Education requirement is satisfied by a student completing 6 credit hours beyond those required by campus' General Education requirement from Humanities & the Arts, Social & Behavioral Sciences, or a college-curated list of courses (containing courses from over 120 rubrics across campus). An analysis of student course selection in the Liberal Education category indicates 25% of courses are taken in the College of Liberal Arts & Sciences, 20% from the College of Applied Health Sciences, 18% from Gies College of Business, 11% from the College of Agricultural, Consumer and Environmental Sciences, 11% from the College of Fine and Applied Arts, and 9% from The Grainger College of Engineering. Less than 2% of credits are taken in each of the remaining colleges and units across campus.

Although it might stand to reason that removal of the Liberal Education requirement would reduce the amount of credits Grainger Engineering students take outside of their home college, the data do not support that assertion. Specifically, despite the current Liberal Education requirement being set at 6 credit hours, the average number of credit hours completed from the Liberal Education course list upon graduation is 11.9. Through discussions with departmental and college advisors as well as students, students are making course selections not because the course satisfies the Liberal Education requirement, but because they are interested in the coursework offered outside of their home college, are pursing minors and other educational opportunities, and are looking to balance course loads between technical and non-technical courses. Taken together, the data and evidence from advisors and students suggest that students will continue to take the types of courses represented on the Liberal Education

course list, even if not specifically required to do so.

Due to prerequisite changes in computer science, bioengineering computational track students will now need to take CS 128, which previously did not exist. We anticipate around 20 students per academic year will need to take this course, as outlined in the letter of support. Students will also have the option to take CS 124 instead of CS 101. Students will also take CS 225 as part of the computational track.

Attach letters of support or acknowledgement from other departments.	CS Letter of Support_Bioengineering.pdf Letters of Acknowledgement - Liberal Education Electives.pdf

Program Regulation and Assessment

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

Below in Table 4.1, we show the process by which we continuously improve our program and student learning. Data is collected and evaluated every 3 years, allowing for the program to make and assess changes in program curriculum, advising processes, and the assessment process itself.

Table 4.1 Outcomes Review Cycle

Collect data for analysis on all outcomes Every 3 years
(2012-2013, 2015-2016, 2018-2019) Assessment Lead Directs Faculty to Collect

Assess data and recommend action items for all outcomes Every 3 years
(2012-2013, 2015-2016, 2018-2019) Assessment Lead and Curriculum committee

Monitoring of changes and action items Reviewed annually at retreats All faculty

Monitoring of changes and action items Discussed at committee meetings (ongoing) Curriculum committee

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Program outcomes and learning objectives:
The Bioengineering Program prepares graduates to achieve the following student outcomes by the time of graduation:

1. an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
2. an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.
3. an ability to communicate effectively with a range of audiences.
4. an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.
5. an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.
6. an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
7. an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

Table 4.1 above addresses the process to ensure assessment results are used to improve student learning, in accordance with our accrediting board, ABET.

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 Bioengineering, BS Side by Side.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 - Overview Tab

Text for Overview tab on the Catalog Page. This is not official content, it is used to help build the new catalog page for the program. Can be edited in the catalog by the college or department.

Statement for Programs of Study Catalog

Graduation Requirements

Minimum Overall GPA: 2.0

Minimum hours required for graduation: 128 hours

General education: Students must complete the Campus General Education requirements including the campus general education language requirement.

Orientation and Professional Development

Course List

Code	Title	Hours
ENG 100	Grainger Engineering Orientation Seminar (External transfer students take ENG 300.)	1
BIOE 100	Bioengineering Freshman Seminar	1
BIOE 120	Introduction to Bioengineering	1
Total Hours		3

Foundational Mathematics and Science

Course List

Code	Title	Hours
CHEM 102	General Chemistry I	3
CHEM 103	General Chemistry Lab I	1

Code	Title	Hours
CHEM 104	General Chemistry II	3
CHEM 105	General Chemistry Lab II	1
MATH 221	Calculus I (MATH 220 may be substituted. MATH 220 is appropriate for students with no background in calculus. 4 of 5 credit hours count towards degree.)	4
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
Total Hours		30

Bioengineering Technical Core

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 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	4
CS 101	Intro Computing: Engrg & Sci (CS 124 may be taken instead of CS 101.)	3
MCB 150	Molec & Cellular Basis of Life	4
Total Hours		51

Track Electives

Course List

Code	Title	Hours
Students are required to complete 15 hours of credit from one track area listed below.		15
Biomechanics Track		
Required courses:		
TAM 211	Statics	3
TAM 212	Introductory Dynamics	3
TAM 251	Introductory Solid Mechanics	3
Select the remaining 6 hours from the below list:		
BIOE 461	Cellular Biomechanics	4
BIOE 498	Special Topics (Experimental Design in Automation)	3
BIOE 498	Special Topics (Finite Element Methods in Biomedicine)	3
BIOE 498	Special Topics (Quantitative Pharmacology)	3
BIOE 498	Special Topics (Regulatory Safety Issues in Bioengineering)	3

Code	Title	Hours
BIOE 498	Special Topics (Surgical Techniques)	3
ME 330	Engineering Materials	4
ME 481	Whole-Body Musculoskel Biomech	3
ME 482	Musculoskel Tissue Mechanics	3
ME 483	Mechanobiology	4
SE 402	Comp-Aided Product Realization	3
NPRE 461	Probabilistic Risk Assessment	3
SE 423	Mechatronics	3
TAM 445	Continuum Mechanics	4
TMGT 461	Tech, Eng, & Mgt Final Project	2
Recommended free elective:		
SE 101	Engineering Graphics & Design	3
Cell and Tissue Engineering Track		
Select 15 hours from the list below:		
BIOE 306	Biofabrication Lab	3
BIOE 416	Biosensors	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 (Experimental Design in Automation)	3
BIOE 498	Special Topics (Finite Element Methods in Biomedicine)	3
BIOE 498	Special Topics (Immunoengineering)	3
BIOE 498	Special Topics (Preclinical Molecular Imaging)	3
BIOE 498	Special Topics (Quantitative Pharmacology)	3
BIOE 498	Special Topics (Regulatory Safety Issues in Bioengineering)	3
BIOE 498	Special Topics (Systems Biology)	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		
Select 15 hours from the list below:		
ABE 446	Biological Nanoengineering	3
BIOE 306	Biofabrication Lab	3
BIOE 430	Intro Synthetic Biology	3
BIOE 460	Gene Editing Lab	3
BIOE 479	Cancer Nanotechnology	3
BIOE 498	Special Topics (Experimental Design in Automation)	3
BIOE 498	Special Topics (Immunoengineering)	3
BIOE 498	Special Topics (Preclinical Molecular Imaging)	3

Code	Title	Hours
BIOE 498	Special Topics (Quantitative Pharmacology)	3
BIOE 498	Special Topics (Regulatory Safety Issues in Bioengineering)	3
BIOE 498	Special Topics (Surgical Technologies)	3
BIOE 498	Special Topics (Systems Biology)	3
BIOE 498	Special Topics (Technologies for Cancer Diagnosis and Therapy)	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 457	Polymer Chemistry	3 or 4
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~~
Required courses:		
CS 128	Introduction to Computer Science II	3
CS 225	Data Structures	4
Select the remaining 8 hours from the list below:		
ABE 440	Applied Statistical Methods I	4
BIOE 483	Biomedical Computed Imaging Systems	3
BIOE 484	Statistical Analysis of Biomedical Images	3
BIOE 485	Computational Mathematics for Machine Learning and Imaging	4
BIOE 486	Applied Deep Learning for Biomedical Imaging	3
BIOE 430	Intro Synthetic Biology	3
BIOE 498	Special Topics (Experimental Design in Automation)	3
BIOE 498	Special Topics (Finite Element Methods in Biomedicine)	3
BIOE 498	Special Topics (Regulatory Safety Issues in Bioengineering)	3
BIOE 498	Special Topics (Systems Biology)	3
CS 411	Database Systems	3
CS 412	Introduction to Data Mining	3
CS 440	Artificial Intelligence	3
CS 446	Machine Learning	3 or 4
CS 465	User Interface Design	4
CS 466	Introduction to Bioinformatics	3
CS 498	Special Topics (Intro to Deep Learning)	3
ECE 490	Introduction to Optimization	3
ECE 498	Special Topics in ECE (Deep Learning in Hardware)	3
IE 310	Deterministic Models in Optimization	3
IE 370	Stochastic Processes and Applications	3

Code	Title	Hours
NPRE 461	Probabilistic Risk Assessment	3 or 4
SE 423	Mechatronics	3
TMGT 461	Tech, Eng, & Mgt Final Project	2
Imaging and Sensing Track		
Required courses:		
ECE 210	Analog Signal Processing	4
ECE 329	Fields and Waves I	3
Select the remaining 8 hours from the list below:		
BIOE 498	Special Topics (Experimental Design in Automation)	3
BIOE 484	Statistical Analysis of Biomedical Images	3
BIOE 486	Applied Deep Learning for Biomedical Imaging	3
BIOE 498	Special Topics (Immunoengineering)	3
BIOE 498	Special Topics (Preclinical Molecular Imaging)	3
BIOE 498	Special Topics (Quantitative Pharmacology)	3
BIOE 498	Special Topics (Regulatory Safety Issues in Bioengineering)	3
BIOE 498	Special Topics (Surgical Techniques)	3
BIOE 498	Special Topics (Systems Biology)	3
BIOE 498	Special Topics (Technologies for Cancer Diagnosis and Therapy)	3
ECE 310	Digital Signal Processing	3
ECE 311	Digital Signal Processing Lab	1
ECE 365	Data Science and Engineering	3
ECE 380	Biomedical Imaging	3
ECE 416	Biosensors	3
ECE 417	Multimedia Signal Processing	4
ECE 418	Image & Video Processing	4
ECE 437	Sensors and Instrumentation	3
ECE 365	Data Science and Engineering	3
ECE 460	Optical Imaging	4
ECE 467	Biophotonics	3
ECE 472	Biomedical Ultrasound Imaging	3
ECE 473	Fund of Engrg Acoustics	3
ECE 480	Magnetic Resonance Imaging	3
ME 487	MEMS-NEMS Theory & Fabrication	4
NPRE 461	Probabilistic Risk Assessment	3
SE 423	Mechatronics	3
TMGT 461	Tech, Eng, & Mgt Final Project	2
Recommended Free Elective		
CHEM 442	Physical Chemistry I	4

Free Electives

Course List		
Code	Title	Hours
~~The Grainger College of Engineering Liberal Education course list, or additional courses from the campus General Education lists for Social and Behavioral Sciences or Humanities and the Arts. 3~~		~~6~~
~~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. 4~~		~~8~~

Code	Title	Hours
Additional coursework, subject to the Grainger College of Engineering restrictions to Free Electives, so that there are at least 128 credit hours earned toward the degree.		13
Total Hours of Curriculum to Graduate		128

~~**1**~~

~~MATH 220%7C *may be substituted, with four of the five credit hours applying toward the degree.* MATH 220%7C *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.*~~

~~**3**~~

~~*The Grainger College of Engineering approved liberal education course list can be found here. Note that these credit hours could carry the required cultural studies designation required for campus general education requirements.*~~

~~**4***The Grainger College of Engineering restrictions to free electives can be found here.***5***~~

~~Students select one track option to complete; this course can only be applied in the specific track area where the course is listed.~~

Corresponding Degree	BS Bachelor of Science

Program Features

Academic Level	Undergraduate
Does this major have transcripted concentrations?	No

What is the typical time to completion of this program?

4 years

What are the minimum Total Credit Hours required for this program?

128

CIP Code	140501 - Bioengineering and Biomedical Engineering.

Is This a Teacher Certification Program?

No

Will specialized accreditation be sought for this program?

No

Delivery Method

This program is available:

On Campus - Students are required to be on campus, they may take some online courses.

Admission Requirements

Desired Effective 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.

No changes

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

No changes

Enrollment

Describe how this revision will impact enrollment and degrees awarded.

These changes will not impact enrollment

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

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)

Financial Resources

How does the unit intend to financially support this proposal?

No changes

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

No

Attach letters of support

What tuition rate do you expect to charge for this program? e.g, Undergraduate Base Tuition, or Engineering Differential, or Social Work Online (no dollar amounts necessary)

Are you seeking a change in the tuition rate or differential for this program?

No

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

For each of these items, be sure to include in the response if the proposed new program or change will result in replacement of another program(s). If so, which program(s), what is the anticipated impact on faculty, students, and instructional resources? Please attach any letters of support/acknowledgement from faculty, students, and/or other impacted units as appropriate.

Attach File(s)

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.

These changes will not impact our 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.

There is no impact to the use of the Library collections, resources, and services.

EP Documentation

EP Control Number	EP.22.095
Attach Rollback/Approval Notices	ep22095_response from sponsor_20220214.pdf
This proposal requires HLC inquiry	No

DMI Documentation

Attach Final Approval Notices	
Banner/Codebook Name	BS:Bioengineering - UIUC
Program Code:	10KP0408BS

Minor Code	Conc Code	Degree Code	Major Code
0408		BS	

Senate Approval Date	
Senate Conference Approval Date	
BOT Approval Date	
IBHE Approval Date	
HLC Approval Date	
Effective Date:	
Attached Document Justification for this request	
Program Reviewer	**Deb Forgacs (dforgacs) (01/05/22 11:02 am):** Rollback: requested.

Comments

Key: 112

Key			
GREEN HIGHLIGHT = Course addition or requirement replacement			
RED HIGHLIGHT = Course to be removed from listed requirements.			
Yellow Highlight - Revision to requirement			

Current Requirement	Current Hours		Revised Requirements	Revised Hours
Graduation Requirements			**Graduation Requirements**	
Minimum Overall GPA: 2.0			Minimum Overall GPA: 2.00	
Minimum hours required for graduation: 128 hours			Minimum hours required for graduation: 128 hours	
General education: Students must complete the Campus General Education requirements including the campus general education language requirement.			General education: Students must complete the Campus General Education requirements including the campus general education language requirement.	
Orientation and Professional Development			**Orientation and Professional Development**	
ENG 100: Engineering Orientation	1		ENG 100: Engineering Orientation (External transfer students take ENG 300)	1
BIOE 100: Bioengineering Freshman Seminar	1		BIOE 100: Bioengineering Freshmen Seminar	1
BIOE 120: Introduction to Bioengineering	**1**		BIOE 120: Introduction to Bioengineering	1
Total Hours	2		**Total Hours**	**3**
Foundational Mathematics and Science			**Foundational Mathematics and Science**	
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 (MATH 220 may be substituted. MATH 220 is appropriate for students with no background in calculus. 4 of 5 credit hours count towards degree.)	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
Total Hours	**30**		**Total Hours**	**30**
Bioengineering Technical Core			**Bioengineering Technical Core**	
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 210: Linear Algebra for Biomedical Data Science	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	4
CS 101: Intro Computing: Engrg & Sci	3		CS 101: Intro Computing: Engrg & Sci (CS 124 may be taken instead of CS 101.)	3
MCB 150: Molec & Cellular Basis of Life	4		MCB 150: Molec & Cellular Basis of Life	4
Total Hours	**51**		**Total Hours**	**51**
Track Electives	15		**Track Electives**	
Track electives selected from a departmentally approved list of track elective courses below. Alternately a student may devise a special track and set of courses which must be approved by the Bioengineering Department. Students are required to complete one track.			Students are required to complete 15 hours of credit from one track area listed below.	15
Biomechanics Track			**Biomechanics Track**	
List of Pre-Approved Biomechanics Track Required Courses			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::			Select the remaining 6 hours from the list below:	
BIOE 461: Cellular Biomechanics	4		BIOE 461: Cellular Biomechanics	4
BIOE 498: Special Topics (Experimental Design in Automation)	3		BIOE 498: Special Topics (Experimental Design in Automation)	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		BIOE 498: Special Topics (Surgical Techniques)	3
BIOE 498: Special Topics (Quantitative Pharmacology)	3		BIOE 498: Special Topics (Regulatory Safety Issues in Bioengineering)	3
BIOE 498: Special Topics (Regulatory Safety Issues in Bioengineering)	3		BIOE 498: Special Topics (Surgical Techniques)	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 461: Probabilistic Risk Assessment	3		NPRE 461: Probabilistic Risk Assessment	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:			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**	
			Select 15 hours from the list below:	
BIOE 306: Biofabrication Lab	3		BIOE 306: Biofabrication Lab	3
BIOE 416: Biosensors	3		BIOE 416: Biosensors	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 (Experimental Design in Automation)	3		BIOE 498: Special Topics (Experimental Design in Automation)	3
BIOE 498: Special Topics (Finite Element Methods in Biomedicine)	3		BIOE 498: Special Topics (Finite Element Methods in Biomedicine)	3
BIOE 498: Special Topics (Immunoengineering)	3		BIOE 498: Special Topics (Immunoengineering)	3
BIOE 498: Special Topics (Preclinical Molecular Imaging)	3		BIOE 498: Special Topics (Preclinical Molecular Imaging)	3
BIOE 498: Special Topics (Quantitative Pharmacology)	3		BIOE 498: Special Topics (Quantitative Pharmacology)	3
BIOE 498: Special Topics (Regulatory Safety Issues in Bioengineering)	3		BIOE 498: Special Topics (Regulatory Safety Issues in Bioengineering)	3
BIOE 498: Special Topics (Systems Biology)	3		BIOE 498: Special Topics (Systems Biology)	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**	
			Select 15 hours from the list below:	
ABE 446: Biological Nanoengineering	3		ABE 446: Biological Nanoengineering	3
BIOE 306: Biofabrication Lab	3		BIOE 306: Biofabrication Lab	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 479: Cancer Nanotechnology	3		BIOE 479: Cancer Nanotechnology	3
BIOE 498: Special Topics (Experimental Design in Automation)	3		BIOE 498: Special Topics (Experimental Design in Automation)	3
BIOE 498: Special Topics (Immunoengineering)	3		BIOE 498: Special Topics (Immunoengineering)	3

BIOE 498: Special Topics (Preclinical Molecular Imaging)	3		BIOE 498: Special Topics (Preclinical Molecular Imaging)	3
BIOE 498: Special Topics (Quantitative Pharmacology)	3		BIOE 498: Special Topics (Quantitative Pharmacology)	3
BIOE 498: Special Topics (Regulatory Safety Issues in Bioengineering)	3		BIOE 498: Special Topics (Regulatory Safety Issues in Bioengineering)	3
BIOE 498: Special Topics (Surgical Technologies)	3		BIOE 498: Special Topics (Surgical Technologies)	3
BIOE 498: Special Topics (Systems Biology)	3		BIOE 498: Special Topics (Systems Biology)	3
BIOE 498: Special Topics (Technologies for Cancer Diagnosis and Therapy)	3		BIOE 498: Special Topics (Technologies for Cancer Diagnosis and Therapy)	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 457: Polymer Chemistry	3		MSE 457: Polymer Chemistry	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			
			Required courses:	
			CS 128: Introduction to Computer Science II	3
			CS 225: Data Structures	4
			Select the remaining 8 hours from the list below:	
ABE 440: Applied Statistical Methods I	4		ABE 440: Applied Statistical Methods I	4
			BIOE 483: Biomedical Computed Imaging/Systems	3
			BIOE 484: Stat Analysis of Biomedical Imagining/Systems	3
			BIOE 485: Computational Mathematics for Machine Learning & Imaging	4
			BIOE 486: Applied Deep Learning for Biomedical imaging	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 (Experimental Design in Automation)	3
BIOE 498: Special Topics (Experimental Design in Automation)	3		BIOE 498: Special Topics (Finite Element Methods in Biomedicine)	3
BIOE 498: Special Topics (Systems Biology)	3		BIOE 498: Special Topics (Regulatory Safety Issues in Bioengineering)	3
BIOE 498: Special Topics (Regulatory Safety Issues in Bioengineering)	3		BIOE 498: Special Topics (Systems Biology)	3
CS 225: Data Structures	4			
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 446: Machine Learning	3		CS 446: Machine Learning	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
CS 498: Special Topics (Intro to Deep Learning)	3		CS 498: Special Topics (Intro to Deep Learning)	3
ECE 490: Introduction to Optimization	3		ECE 490: Introduction to Optimization	3
ECE 498: Special Topics (Deep Learning in Hardware)	3		ECE 498: Special Topics (Deep Learning in Hardware)	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 461: Probabilistic Risk Assessment	3		NPRE 461: Probabilistic Risk Assessment	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:**	
			Required courses:	
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:			Select 8 hours from the list below:	
			BIOE 484: Stat Analysis of Biomedical Imaging/Systems	3
			BIOE 486: Applied Deep Learning for Biomedical Imaging	3
BIOE 498: Special Topics (Experimental Design in Automation)	3		BIOE 498: Special Topics (Experimental Design in Automation)	3
BIOE 498: Special Topics (Immunoengineering)	3		BIOE 498: Special Topics (Immunoengineering)	3
BIOE 498: Special Topics (Preclinical Molecular Imaging)	3		BIOE 498: Special Topics (Preclinical Molecular Imaging)	3
BIOE 498: Special Topics (Quantitative Pharmacology)	3		BIOE 498: Special Topics (Quantitative Pharmacology)	3
BIOE 498: Special Topics (Regulatory Safety Issues in Bioengineering)	3		BIOE 498: Special Topics (Regulatory Safety Issues in Bioengineering)	3
BIOE 498: Special Topics (Surgical Techniques)	3		BIOE 498: Special Topics (Surgical Techniques)	3
BIOE 498: Special Topics (Systems Biology)	3		BIOE 498: Special Topics (Systems Biology)	3
BIOE 498: Special Topics (Technologies for Cancer Diagnosis and Therapy)	3		BIOE 498: Special Topics (Technologies for Cancer Diagnosis and Therapy)	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 417: Multimedia Signal Processing	4		ECE 417: Multimedia Signal Processing	4
ECE 418: Image and Video Processing	4		ECE 418: Image and Video Processing	4
ECE 437: Sensors and Instrumentation	3		ECE 437: Sensors and Instrumentation	3
ECE 365: Data Science and Instrumentation	3		ECE 365: Data Science and Instrumentation	3
ECE 460: Optical Imaging	4		ECE 460: Optical Imaging	4
ECE 467: Biophotonics	3		ECE 467: Biophotonics	3
ECE 472: Biomedical Ultrasound Imaging	3		ECE 472: Biomedical Ultrasound Imaging	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 461: Probabilistic Risk Assessment	3		NPRE 461: Probabilistic Risk Assessment	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
Electives			Free Electives	
The Grainger College of Engineering Liberal Education course list, or additional courses from the campus General Education lists for Social and Behavioral Sciences or Humanities and the Arts. 3	6			
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. 4	8		Additional course work subject to the Grainger College of Engineering restrictions to Free Electives so that there are at least 128 credit hours earned toward the degree. (https://go.grainger.illinois.edu/FreeElectives)	13
Total Curriculum Hours to Graduate	**128**		**Total Curriculum Hours to Graduate**	**128**
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.*				
[2]*May be taken for 3 or 4 credit hours; the extra hour may be used to help meet free elective requirements.*				
[3]*The Grainger College of Engineering approved liberal education course list can be found here. Note that these credit hours could carry the required cultural studies designation required for campus general education requirements.*				
[4]*The Grainger College of Engineering restrictions to free electives can be found here.*				
[5]*Students select one track option to complete; this course can only be applied in the specific track area where the course is listed.*				

ILLINOIS

COLLEGE OF AGRICULTURAL, CONSUMER
& ENVIRONMENTAL SCIENCES

Office of the Dean
227 Mumford Hall, MC-710
1301 W. Gregory Drive
Urbana, IL 61801

January 13, 2022

Dear Dean Bashir,

Thank you for informing us of the proposed removal of the Liberal Education requirements in all undergraduate programs in The Grainger College of Engineering. I understand that this requirement included an extensive list of courses Grainger Engineering students could choose from, including some from our college. Grainger Engineering students will continue to be welcome to enroll in the courses formerly on your Liberal Education list as Free Electives after the removal of this requirement.

Sincerely,

Germán Bollero, Interim Dean

ILLINOIS

COLLEGE OF APPLIED HEALTH SCIENCES

Office of the Dean
110 Huff Hall, MC-586
1206 S. Fourth St.
Champaign, IL 61820

January 25, 2022

Dear Dean Bashir,

Thank you for informing us of the proposed removal of the Liberal Education requirements in all undergraduate programs in The Grainger College of Engineering. I understand that this requirement included an extensive list of courses Grainger Engineering students could choose from, including some from our college. Grainger Engineering students will continue to be welcome to enroll in the courses formerly on your Liberal Education list as Free Electives after the removal of this requirement.

While I support the move the give your students more freedom in course selection, it is important to express my concern that discontinuing your Liberal Education requirement may negatively impact my college's finances by reducing the IUs generated from lower enrollments in AHS courses. As you know, the current budget model rewards colleges financially based on the number of registrants in courses. I am hopeful that your students and advisors will continue to view AHS courses as relevant and valuable when they are selecting electives.

Sincerely,

Cheryl Hanley-Maxwell

Dean

UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN

College of Education
Undergraduate Student Academic Affairs Office
110 Education Building, MC-708
1310 S. Sixth St.
Champaign, IL 61820

Dear Dean Bashir,

Thank you for informing us of the proposed removal of the Liberal Education requirements in all undergraduate programs in The Grainger College of Engineering. I understand that this requirement included an extensive list of courses Grainger Engineering students could choose from, including some from our college. Grainger Engineering students will continue to be welcome to enroll in the courses formerly on your Liberal Education list as Free Electives after the removal of this requirement.

Sincerely,

Assistant Dean for Academic Affairs
College of Education | University of Illinois at Urbana-Champaign

UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN

College of Fine & Applied Arts

Office of the Dean
100 Architecture Building, MC-622
608 E. Lorado Taft Dr.
Champaign, IL 61820

21 December 2021

Rashid Bashir, Dean
306 Engineering Hall
1308 W. Green St.
M/C 266
Urbana, IL 61801

Dear Dean Bashir,

Thank you for informing us of the proposed removal of the Liberal Education requirements in all undergraduate programs in The Grainger College of Engineering. I understand that this requirement included an extensive list of courses Grainger Engineering students could choose from, including some from the College of Fine & Applied Arts. Grainger Engineering students will continue to be welcome to enroll in the courses formerly on your Liberal Education list as Free Electives after the removal of this requirement.

Sincerely,

Kevin Hamilton
Dean and Professor

UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN

College of Liberal Arts & Sciences
2090 Lincoln Hall, MC-448
702 S. Wright St.
Urbana, IL 61801

December 20, 2021

Dear Dean Bashir,

Thank you for informing the College of LAS of the proposed removal of the Liberal Education requirement in all undergraduate programs in the Grainger College of Engineering. I understand that this requirement includes an extensive list of courses from which your students could choose some, many of which are from our college. Grainger Engineering students will continue to be welcome to take our courses formerly on your Liberal Education list as free electives after the removal of this requirement from their programs of study.

Sincerely,

Venetria K. Patton
Harry E. Preble Dean

UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN

College of Media
Office of the Dean
119 Gregory Hall, MC-462
810 S. Wright St.
Urbana, IL 61801

January 13, 2022

Rashid Bashir, Dean
The Grainger College of Engineering
306 Engineering Hall
1308 W. Green Street
Urbana, IL 61801

Dear Dean Bashir,

Thank you for informing us of the proposed removal of the Liberal Education requirements in all undergraduate programs in The Grainger College of Engineering. I understand that this requirement included an extensive list of courses Grainger Engineering students could choose from, including some from our college. Grainger Engineering students will continue to be welcome to enroll in the courses formerly on your Liberal Education list as Free Electives after the removal of this requirement.

Sincerely,

Tracy Sulkin
Dean, College of Media

Gies College of Business
UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN

Office of the Dean
260 Wohlers Hall, 1206 S. 6th Street
Champaign, IL 61820
217.333.2747

December 13th, 2021

Dean Bashir,

Thank you for informing us of the proposed removal of the Liberal Education requirements in all undergraduate programs in The Grainger College of Engineering. I understand that this requirement included an extensive list of courses Grainger Engineering students could choose from, including some from Gies College of Business. Students from Grainger will continue to be welcome to enroll in the courses formerly on your Liberal Education list as Free Electives after the removal of this requirement.

Sincerely,

Jeffrey R. Brown
Dean, Gies College of Business

UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN

School of Information Sciences
501 E. Daniel St., MC-493
Champaign, IL 61820-6211

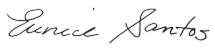
February 3, 2022

Dean Rashid Bashir
306 Engineering Hall
1308 West Green Street
Urbana, IL 61801

Dear Rashid,

Thank you for informing us of the proposed removal of the Liberal Education requirements in all undergraduate programs in the Grainger College of Engineering. I understand that this requirement included an extensive list of courses that Grainger Engineering students could choose from, including some from the iSchool. This letter acknowledges that Grainger Engineering students will continue to be able to enroll in courses as articulated and constrained in Course Explorer and formerly on your Liberal Education list as Free Electives, after the removal of this requirement.

Sincerely,



Eunice Santos
Professor and Dean

ILLINOIS

DEPARTMENT OF COMPUTER SCIENCE
Thomas M. Siebel Center for Computer Science
201 N. Goodwin Ave.
Urbana, IL 61801-2302 USA

NANCY M. AMATO
Abel Bliss Professor and Head
2248 Siebel Center
namato@illinois.edu

December 21, 2021

Dear Professor Mark A. Anastasio,

The Department of Computer Science is fully supportive of the Department of Bioengineering using CS 124 as an option in addition to CS 101 for the introductory programming requirement in their undergraduate degree program 10KP0408BS: Bioengineering, BS. Additionally, the Department of Computer Science is fully supportive of CS 128, CS 173, and CS 225 being used by students in the Bioengineering BS program who are following the Computational and Systems Biology Track.

Sincerely,

Nancy M. Amato
Abel Bliss Professor and Head
Department of Computer Science

From: Hanley-Maxwell, Cheryl D <cherylhm@illinois.edu>
Sent: Monday, February 14, 2022 3:57 PM
To: Miller, Nolan H <nmiller@illinois.edu>
Subject: RE: Senate Ed Pol - Re: change to Grainger Liberal Education requirement

That's fine. Thanks for asking

CHERYL D HANLEY-MAXWELL
Dean

University of Illinois at Urbana-Champaign
College of Applied Health Sciences
108 Huff Hall
1206 S Fourth | M/C 586
Champaign, IL 61820
217.333.2131 | cherylhm@illinois.edu
www.ahs.illinois.edu
(217) 333-0404 (FAX)

Human kindness has never weakened the stamina or softened the fiber of a free people. A nation does not have to be cruel to be tough. -- President Franklin D. Roosevelt

From: Miller, Nolan H <nmiller@illinois.edu>
Sent: Monday, February 14, 2022 1:49 PM
To: Hanley-Maxwell, Cheryl D <cherylhm@illinois.edu>
Subject: RE: Senate Ed Pol - Re: change to Grainger Liberal Education requirement

Dear Cheryl,

Thanks again for talking with me about the changes to the Grainger BS programs. I read the statement you sent to the committee today. The Chair would like to include it in the record that is forwarded to the Senate. Is it ok to include the email you sent below?

Thanks,

Nolan

_____

NOLAN H MILLER
Daniel and Cynthia Mah Helle Professor in Finance | Department of Finance
Director, Center for Business and Public Policy
Gies College of Business | University of Illinois at Urbana-Champaign
217.244.2847 | nmiller@illinois.edu | http://www.business.illinois.edu/nmiller

From: Hanley-Maxwell, Cheryl D <cherylhm@illinois.edu>
Sent: Thursday, February 10, 2022 1:49 PM
To: Miller, Nolan H <nmiller@illinois.edu>
Subject: RE: Senate Ed Pol - Re: change to Grainger Liberal Education requirement

Hi Nolan –

I appreciate what Ed Pol does in juggling the interests and concerns of the various programs across the campus, while keeping the students in mind. I served on a committee like this at my previous institution and know that it all boils down to what is best for the students' learning. Thanks for reminding me of that.

Here is a statement: While the Grainger proposal has the potential to financially affect AHS, we want to affirm another college's right to control their program requirements and student experiences, ensuring the best possible outcomes for their students. As a result, AHS supports this proposal and hopes that Grainger advisors will recognize the valuable contribution AHS classes make to the education of their students and continue to encourage them to consider relevant and/or high interest classes in AHS.

Hope this works!

Cheryl

CHERYL D HANLEY-MAXWELL, PHD
Dean

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Human kindness has never weakened the stamina or softened the fiber of a free people. A nation does not have to be cruel to be tough. -- President Franklin D. Roosevelt