

Docket Item:

University Program Approval: University of Oregon, Bachelor of Science (B.S.) in Bioengineering.

Summary:

University of Oregon proposes a new degree program leading to a B.S. in Bioengineering. The statewide Provosts' Council has unanimously recommended approval. Higher Education Coordinating Commission (HECC) staff completed a review of the proposed program. After Analysis, HECC staff recommends approval of the program as proposed.

Staff Recommendation:

The HECC recommends the adoption of the following resolution:

RESOLVED, that the Higher Education Coordinating Commission approve the following program:

B.S. in Bioengineering at the University of Oregon.



Proposal for a New Academic Program

Institution: University of Oregon

College/School: College of Arts and Sciences

Department/Program Name: Bioengineering Program

Degree and Program Title: Bachelor of Science in Bioengineering

1. Program Description

- a. **Proposed Classification of Instructional Programs (CIP) number.** 14.0501
- b. **Brief overview (1-2 paragraphs) of the proposed program, including its disciplinary foundations and connections; program objectives; programmatic focus; degree, certificate, minor, and concentrations offered.**

We propose a new BS undergraduate degree in bioengineering to capitalize upon substantial new investments being made at the University of Oregon.

Establishment of the Phil and Penny Knight Campus for Accelerating Scientific Impact (Knight Campus) creates a unique moment in time for the University of Oregon. The initial \$500 million gift from the Knights, together with additional support from the state, allows the creation of new world class research and teaching facilities. Based in a new program within the College of Arts and Sciences, the bioengineering program curriculum is designed to exemplify the goal of the Knight Campus to engage students in discovery-driven learning. Students will be immersed in problem- and design- based learning while maintaining a focus on innovation and entrepreneurship throughout the core and elective requirements.

Specific courses that constitute the degree program were selected through a combination of ABET accreditation requirements and a comprehensive curriculum survey of top-ranked bioengineering programs in the Pacific Northwest and nationwide. The curriculum is multidisciplinary, featuring extensive coursework in mathematics, chemistry, biology, and physics during the lower division component of the education. This foundation in the natural sciences prepares students for a focused concentration of engineering work at the upper-division level.

- c. **Course of study – proposed curriculum, including course numbers, titles, and credit hours.**

Major Requirements

Key:

* Should be completed prior to Upper-Division BIOE Status (BIOE 300- or 400-level courses)

399: 300-level course that is yet to be regularized.

410: 400-level course that is yet to be regularized.

Mathematics – 20 Credits

Course #	Course Title	Credits	Prerequisites
*MATH 251	Calculus I	4	MATH 112 or test placement
*MATH 252	Calculus II	4	MATH 251
*MATH 253	Calculus III	4	MATH 252
*MATH 256	Intro to Differential Equations	4	MATH 253
MATH 343 or MATH / DSCI 345	Statistical Models and Methods	4	MATH 252
	Probability and Statistics for Data Science	4	MATH 342, CIS 211

Natural Sciences – 38 Credits

Course #	Course Title	Credits	Prerequisites
*CH 221+227 -or- CH 224+237	General Chemistry I + Lab Advanced General Chemistry I + Lab	6	MATH 111 Coreq: 112 High school chemistry, MATH 112, coreq: one from MATH 241, MATH 246, MATH 251, MATH 261
*CH 222+228 -or- CH 225+238	General Chemistry II + Lab Advanced General Chemistry II + Lab	6	CH 221, MATH 112 CH 221 or CH224H; one from MATH 241, MATH 246, MATH 251, MATH 261; coreq: one from MATH 242, MATH 247, MATH 252, MATH 262

*CH 223+229 -or- CH 226+239	General Chemistry III + Lab Advanced General Chemistry III + Lab	6	CH 222, MATH 112 CH 222 or CH 225H; one from MATH 242, MATH 247, MATH 252, MATH 262 with grades of C- or better. coreq: one from MATH 243, MATH 247, MATH 253, MATH 263
CH 331	Organic Chemistry I	4	CH 223 or CH226H
*PHYS 251	Foundations of Physics I	4	MATH 112 or equiv. Coreq: MATH 251
*PHYS 252	Foundations of Physics II	4	PHYS 251 Coreq: MATH 252
*PHYS 253	Foundations of Physics III	4	PHYS 252 Coreq: MATH 253
*BI 211 Or BI 281H	General Biology I: Cells Honors Biology I: Cells, Biochemistry and Physiology	4	CH 111 or CH 113 or CH 114 or CH 221 or CH 224H Prereq: MATH 111 or equivalent with B- or better or minimum AP/IB mathematics score of 4/5, and CH 221, CH 222, CH 223 or CH 224H, CH 225H, CH 226H with B- or better in all courses.

Computer and Information Science – 4 Credits

Course #	Course Title	Credits	Prerequisites
CIS 122	Intro to Programming and Problem Solving	4	MATH 101

-or- CIS 210	Computer Science I	4	MATH 112. Prior programming experience strongly encouraged
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Bioengineering Core – 36 Credits

Course #	Course Title	Credits	Prerequisites
*BIOE 112	Interdisciplinary Approaches to Bioengineering	2	
*BIOE 113	Research Methods in Bioengineering	2	
*BIOE 251	Fundamentals of Bioengineering I	4	MATH 251, Coreq PHYS 251
*BIOE 252	Fundamentals of Bioengineering II	4	BIOE 251
*BIOE 253	Fundamentals of Bioengineering III	4	BIOE 252
<i>Upper-Division</i>			
BIOE 321	Bioengineering Lab I	4	Upper-Division BIOE Status
BIOE 322	Bioengineering Lab II	4	Upper-Division BIOE Status
BIOE 421	Bioengineering Design I	4	Upper-Division BIOE Status
BIOE 422	Bioengineering Capstone Design I	4	Upper-Division BIOE Status
BIOE 423	Bioengineering Capstone Design II	4	Upper-Division BIOE Status

Bioengineering Electives – Select 32 Credits

Course #	Course Title	Credits	Prerequisites
BIOE 331	Biomaterials	4	Upper-Division BIOE Status
BIOE 332	Biomedical Signals	4	Upper-Division BIOE Status
BIOE 333	Systems in Bioengineering	4	Upper-Division BIOE Status

BIOE 341	Quantitative Physiology	4	Upper-Division BIOE Status
BIOE 342	Quantitative Cell & Molecular Biology	4	Upper-Division BIOE Status
BIOE 399	Biomechanics	4	Upper-Division BIOE Status
BIOE 432	Biomedical Imaging	4	Upper-Division BIOE Status
BIOE 442	Cell and Tissue Engineering	4	Upper-Division BIOE Status
BIOE 454	Biotransport	4	Upper-Division BIOE Status
BIOE 410	Advanced Tissue Engineering	4	Upper-Division BIOE Status
BIOE 410	Bioinstrumentation	4	Upper-Division BIOE Status
BIOE 410	Computational Modeling	4	Upper-Division BIOE Status

d. Manner in which the program will be delivered, including program location (if offered outside of the main campus), course scheduling, and the use of technology (for both on-campus and off-campus delivery).

The BS in Bioengineering will be offered at the University of Oregon home campus in Eugene. We are not currently planning to offer the degree online but some of the courses may be offered online.

e. Adequacy and quality of faculty delivering the program.

The new executive director of the Knight Campus, Robert Guldberg, was previously the director of one of the top bioengineering research institutes in the country at Georgia Tech. Georgia Tech also has the top-rated bioengineering program at a public US university. The Knight Campus has already hired a number of new bioengineers into its faculty and will continue to do so over the next several years.

Initial Knight Campus faculty searches have been highly successful, resulting in three tenure track hires that will add to the scholarship and instructional capabilities of the bioengineering program. Dr. Tim Gardner (associate professor), was previously a biology and biomedical engineering faculty member at Boston University. Dr. Keat Ghee Ong (full professor), was previously the Portage Health Foundation Endowed Professor and Associate Chair of the Department of Biomedical Engineering at Michigan Technological University. Dr. Marian Hettiaratchi (assistant professor) just completed a post-doctoral fellowship at the University of Toronto. In addition to tenure track faculty, Dr. Nathan Jacobs has been hired as a Lecturer / Curriculum Director. Dr. Jacobs recently completed his PhD at the University of Pennsylvania with a thesis in biomechanics.

Additional hiring is expected to continue at a rate of one to three tenure track faculty per year until approximately thirteen faculty are in place. As this process develops, Dr. Jacobs

and future NTTF lecturers can fill any programmatic gaps that might exist during the hiring process.

f. Adequacy of faculty resources – full-time, part-time, adjunct.

See e. above.

g. Other staff.

Initial staff needs are expected to be minimal, as the program will start with small cohorts of students (15-25) and maintain controlled, stable growth until steady-state is reached. The table below outlines the current best projection of the year-by-year anticipated enrollment, program size, courses taught, and faculty and staffing needs from program launch (2021) until steady-state is reached (2025-2026). These figures are estimates and may change as the program evolves over time.

	Bioengineering Program Startup Projections				
	Year 1 2021-2022	Year 2 2022-2023	Year 3 2023-2024	Year 4 2024-2025	Year 5 2025-2026
Expected enrollment	15-25	40-50	50-75	75-100	100-125
Total students in the program	15-25	50-70	85-125	140-200	200-265
Which Program courses will be offered (BIOE)	112,113	112,113 251, 252,253	112, 113 251, 252, 253 321, 322 5 electives	112,113 251, 252,253 321,322 421,422,423 8 electives	112,113 251, 252,253 321,322 421,422,423 10 electives
Total # BIOE courses offered	2	5	12	18	20
Permanent faculty affiliated with program on campus	3	4	7	10	13
# Courses taught via bioengineering affiliated TTF	3	4	7	10	13
# Courses taught via NTTF Instruction	0	1	5	8	7
Student Program Manager/Advisor (FTE)	0.25	1	1	1	1
Program administration (FTE)*	2	3	4	5	5

* We have grouped the following roles under the label “Program administration (FTE)”: student recruiter, business manager, administrative assistant, lab manager, and teaching lab preparator.

h. Adequacy of facilities, library, and other resources.

The main facilities that will be needed to support the program are active learning classrooms and scientific teaching laboratories. Initially, the program will utilize spaces designated for the Knight Campus Internship Program (KCIP). These spaces are heavily utilized during the summer but are able to accommodate BIOE usage during fall, winter, and spring terms. As the program grows, facility usage may overflow into non-KCIP designated space at the

Knight Campus, as needed. Details of Knight Campus facilities that will be available to the bioengineering program are outlined below.

Knight Campus facilities that will be available from summer 2020:

- Seminar room – 2900 NSF
- Three KCIP designated classrooms: 965NSF each
- Three additional classrooms (not designated to KCIP): 965 NSF each
- Three instructional laboratories = 4,000 NSF
- Three instructional lab support spaces = 1200 NSF

i. Anticipated start date.

Fall 2021

2. Relationship to Mission and Goals

a. Manner in which the proposed program supports the institution’s mission, signature areas of focus, and strategic priorities.

A new bioengineering program will leverage the recent investments in research and intellectual capital gained from new faculty to engender an educational impact for the UO and the state of Oregon. This objective is highly aligned with the UO’s mission to be “a comprehensive public research university committed to exceptional teaching, discovery, and service”. The program will prepare students for success and professional advancement in a critical and fast-growing segment of Oregon’s economy. The broad, interdisciplinary education will equip graduating students to participate across a wide range of specialties in the life sciences – e.g. medical devices, pharmaceuticals, imaging, clinical and academic research. The synergy of Knight Campus research and talent with the educational efforts of the proposed program will continue to elevate the UO, its students, and the state of Oregon.

b. Manner in which the proposed program contributes to institutional and statewide goals for student access and diversity, quality learning, research, knowledge creation and innovation, and economic and cultural support of Oregon and its communities.

Bioengineering faculty leaders will partner with UO’s Division of Equity and Inclusion to implement best practices for advancing access and diversity. Recruitment efforts will focus on building a diverse student body and increasing enrollment of underrepresented and nontraditional students.

The bioengineering program has been developed within the framework of the Knight Campus goal to transform student education through discovery-driven learning. This focus is woven throughout the core curriculum, in which students will engage in real-world design and research problems in the life sciences and explore ethical implications of bioengineering practices and decisions.

Motivated students will have the opportunity to partner with world-class research faculty in the Knight Campus through the Undergraduate Research Opportunity Program and independent research projects.

c. Manner in which the program meets regional or statewide needs and enhances the state’s capacity to:

- i. **improve educational attainment in the region and state;**
- ii. **respond effectively to social, economic, and environmental challenges and opportunities; and**
- iii. **address civic and cultural demands of citizenship.**

Innovation in life sciences has become an important high-growth driver to Oregon's economy. The most recent report commissioned by the Oregon Bioscience Association¹ found that in 2014 the bioscience industry contributed 14,000 jobs to Oregon, an increase of 68% from 2002. Furthermore, these jobs were high paying and diverse. The average annual wage of \$67,081 was well over Oregon's average of \$52,000² and women and minorities accounted for 47% and 22% of employment, respectively.

In addition to job creation, the industry was responsible for bringing nearly \$289 million in NIH funding to Oregon institutions in 2015 alone. Thus, while some in the state might raise concerns about potential redundancy across institutions, the state as a whole is best served by capitalizing upon the unique resources and pool of students available at each university to provide a well-educated workforce that will allow Oregon to operate at the forefront of this rapidly developing area of economic activity.

The Knight Campus is well positioned to harness this growth in life sciences. A strategic component of the Knight Campus vision is to catalyze entrepreneurship and foster the creation and development of new companies arising from university research. The Knight Campus aims to create a synergy of collaborations across multiple institutions throughout the state, establishing Oregon as a life sciences hub that bridges existing centers in the Seattle and Bay areas.

3. Accreditation

- a. **Accrediting body or professional society that has established standards in the area in which the program lies, if applicable.**

ABET

- b. **Ability of the program to meet professional accreditation standards. If the program does not or cannot meet those standards, the proposal should identify the area(s) in which it is deficient and indicate steps needed to qualify the program for accreditation and date by which it would be expected to be fully accredited.**

The bioengineering program's curriculum has been designed to satisfy the most recent set of ABET requirements (ABET 2020). Eligibility for ABET review and accreditation will occur once the first class of students has graduated. Currently, the bioengineering program is preparing for accreditation review by ensuring that the program's educational objectives, learning outcomes, and degree requirements are congruent with ABET requirements.

- c. **If the proposed program is a graduate program in which the institution offers an undergraduate program, proposal should identify whether or not the undergraduate program is accredited and, if not, what would be required to qualify it for accreditation.**

N/A

¹ See <https://www.oregonbio.org/wp-content/uploads/2017/04/2016-Annual-Report.pdf>

² as reported by the US Bureau of Labor Statistics - May 2018

- d. **If accreditation is a goal, the proposal should identify the steps being taken to achieve accreditation. If the program is not seeking accreditation, the proposal should indicate why it is not.**

The bioengineering program’s curriculum has been designed to satisfy the most recent set of ABET requirements (ABET 2020). Eligibility for ABET review and accreditation will occur once the first class of students has graduated. Currently, the bioengineering program is preparing for accreditation review by ensuring that the program’s educational objectives, learning outcomes, and degree requirements are congruent with ABET requirements. Additionally, protocols for self-assessment and review and for evaluating the success of students in attaining the student outcomes are under development.

4. Need

- a. **Anticipated fall term headcount and FTE enrollment over each of the next five years.**

	Year 1	Year 2	Year 3	Year 4	Year 5
Fall Term Headcount	75	226	429	682	935
FTE Enrollment	15-25	50-70	85-125	140-200	200-265

- b. **Expected degrees/certificates produced over the next five years.**

Year 1	Year 2	Year 3	Year 4	Year 5
0	0	0	10	20

- c. **Characteristics of students to be served (resident/nonresident/international; traditional/ nontraditional; full-time/part-time, etc.).**

Students pursuing the BS in Bioengineering will be resident, nonresident, and international full-time traditional students.

- d. **Evidence of market demand.**

Student demand for placement in undergraduate bioengineering programs currently exceeds available instructional capacity. Due to high levels of student interest, enrollment caps have been implemented at the majority of top-tier universities along the west coast and nationwide. Examples of west coast universities that have implemented capacity constraints include: Oregon State University, the University of Washington, the majority of the University of California system, and the University of Utah. Evidence suggests that new bioengineering programs fill their available capacity limits quickly. The University of Delaware started a new undergraduate degree in bioengineering in 2010 and reached their enrollment cap in just three years.

As highlighted above (section 2.c), the life/bioscience industries are undergrowing rapid job growth in Oregon. These jobs are high paying and are becoming an increasingly valuable component of the state's economy. Providing additional educational capacity will help prepare sufficient new talent to satisfy employment demand in Oregon and continue the cycle of growth in the life/bioscience industries.

- e. If the program’s location is shared with another similar Oregon public university program, the proposal should provide externally validated evidence of need (e.g., surveys, focus groups, documented requests, occupational/employment statistics and forecasts).

N/A

- f. Estimate the prospects for success of program graduates (employment or graduate school) and consideration of licensure, if appropriate. What are the expected career paths for students in this program?

The undergraduate degree in bioengineering will prepare students for success and professional advancement across a wide range of specialties in the life sciences – e.g. medical devices, imaging, pharmaceuticals, and clinical and academic research. Students will also be prepared to pursue graduate education in engineering, the natural sciences, law (especially patent law), and medicine.

5. Outcomes and Quality Assessment

a. Expected learning outcomes of the program.

Principle Learning Outcome (Concept or Skill)	Part of curriculum where this is introduced	Part of curriculum where this is developed	How students demonstrate mastery
Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.	BIOE 113 Research Methods in Bioengineering BIOE 251, 252 Fundamentals of Bioengineering I, II	BIOE 253 Fundamentals of Bioengineering III BIOE 331 Biomaterials BIOE 332 Biomedical Signals BIOE 399 Biomechanics BIOE 442 Cell and Tissue Engineering BIOE 432 Biomedical Imaging BIOE 454 Biotransport	BIOE 410 Computational Modeling BIOE 422 Capstone Design I
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.	BIOE 252 Fundamentals of Bioengineering II BIOE 253 Fundamentals of Bioengineering III	BIOE 442 Cell and Tissue Engineering BIOE 432 Biomedical Imaging BIOE 421 Bioengineering Design I	BIOE 422 Bioengineering Capstone Design I BIOE 423 Bioengineering Capstone Design II
Communicate effectively with a range	BIOE 112 Interdisciplinary Approaches to	BIOE 341 Quantitative Physiology BIOE 421	BIOE 422 Bioengineering Capstone Design I

Principle Learning Outcome (Concept or Skill)	Part of curriculum where this is introduced	Part of curriculum where this is developed	How students demonstrate mastery
of audiences.	Bioengineering BIOE 113 Research Methods in Bioengineering	Bioengineering Design I	BIOE 423 Bioengineering Capstone Design II
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.	BIOE 112 Interdisciplinary Approaches to Bioengineering BIOE 113 Research Methods in Bioengineering	BIOE 253 Fundamentals of Bioengineering III BIOE 341 Quantitative Physiology BIOE 442 Cell and Tissue Engineering BIOE 421 Bioengineering Design I	BIOE 422 Bioengineering Capstone Design I BIOE 423 Bioengineering Capstone Design II
Function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.	BIOE 112 Interdisciplinary Approaches to Bioengineering BIOE 113 Research Methods in Bioengineering BIOE 252 Fundamentals of Bioengineering II	BIOE 253 Fundamentals of Bioengineering III BIOE 321 Bioengineering Lab I	BIOE 322 Bioengineering Lab 2 BIOE 421 Bioengineering Design I BIOE 422 Bioengineering Capstone Design I BIOE 423 Bioengineering Capstone Design II
Develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.	BIOE 113 Research Methods in Bioengineering BIOE 252 Fundamentals of Bioengineering II	BIOE 253 Fundamentals of Bioengineering III BIOE 331 Biomaterials BIOE 341 Quantitative Physiology BIOE 342 Quantitative Cell & Molecular Biology BIOE 332 Biomedical Signals BIOE 399 Biomechanics BIOE 321 Bioengineering Lab I BIOE 410 Bioinstrumentation	BIOE 322 Bioengineering Lab II

Principle Learning Outcome (Concept or Skill)	Part of curriculum where this is introduced	Part of curriculum where this is developed	How students demonstrate mastery
Acquire and apply new knowledge as needed, using appropriate learning strategies.	BIOE 113 Research Methods in Bioengineering	BIOE 253 Fundamentals of Bioengineering III BIOE 331 Biomaterials BIOE 341 Quantitative Physiology BIOE 399 Biomechanics BIOE 321 Bioengineering Lab I BIOE 432 Biomedical Imaging	BIOE 322 Bioengineering Lab II BIOE 421 Bioengineering Design I BIOE 422 Bioengineering Capstone Design I BIOE 423 Bioengineering Capstone Design II
Apply principles of engineering, biology, human physiology, chemistry, calculus-based physics, mathematics (through differential equations) and statistics.	BIOE 251 Fundamentals of Bioengineering I	BIOE 331 Biomaterials BIOE 341 Quantitative Physiology BIOE 342 Quantitative Cell & Molecular Biology BIOE 332 Biomedical Signals BIOE 399 Biomechanics BIOE 333 Systems in Bioengineering BIOE 321 Bioengineering Lab I BIOE 442 Cell and Tissue Engineering BIOE 432 Biomedical Imaging BIOE 454 Biotransport	BIOE 410 Computational Modeling BIOE 322 Bioengineering Lab II BIOE 421 Bioengineering Design I BIOE 423 Bioengineering Capstone Design II
Solve bio/biomedical engineering problems, including those associated with the interaction between living and non-living systems.	BIOE 251 Fundamentals of Bioengineering I	BIOE 253 Fundamentals of Bioengineering III BIOE 342 Quantitative Cell & Molecular Bio BIOE 332 Signals BIOE 333 Systems in Bioengineering BIOE 321 Bioengineering Lab I BIOE 442 Cell and Tissue Engineering BIOE 432 Biomedical Imaging BIOE 410	BIOE 454 Biotransport BIOE 410 Computational Modeling BIOE 322 Bioengineering Lab II

Principle Learning Outcome (Concept or Skill)	Part of curriculum where this is introduced	Part of curriculum where this is developed	How students demonstrate mastery
		Bioinstrumentation	
Analyze, model, design, and realize bio/biomedical engineering devices, systems, components, or processes.	BIOE 251 Fundamentals of Bioengineering I	BIOE 252 Fundamentals of Bioengineering II BIOE 331 Biomaterials BIOE 342 Quantitative Cell & Molecular Biology BIOE 332 Biomedical Signals BIOE 432 Biomedical Imaging BIOE 410 Bioinstrumentation	BIOE 421 Bioengineering Design I
Make measurements on and interpret data from living systems.	BIOE 252 Fundamentals of Bioengineering II	BIOE 253 Fundamentals of Bioengineering III BIOE 342 Quantitative Cell & Molecular Biology BIOE 332 Biomedical Signals BIOE 399 Biomechanics BIOE 321 Bioengineering Lab I	BIOE 410 Bioinstrumentation BIOE 410 Computational Modeling BIOE 322 Bioengineering Lab II

b. Methods by which the learning outcomes will be assessed and used to improve curriculum and instruction.

Attainment of learning outcomes will be assessed through a variety of feedback mechanisms including course examinations, course projects, senior design and capstone projects, and student surveys and interviews. Instructor evaluations and student success will be used to ensure instruction is delivered in a high quality, engaging manner and to identify any areas of instruction needing improvement. Graduating students will also be followed in order to measure success in admission to graduate or professional education or gainful employment.

c. Nature and level of research and/or scholarly work expected of program faculty; indicators of success in those areas.

Appointments for tenure-track faculty will primarily be within the Knight Campus. As such, TTF will be expected to conduct innovative and impactful research demonstrated through a history of successfully awarded grants, journal publications, and conference presentations. TTF and NTTF instructors will be expected to deliver high quality, engaging courses, as measured by student course evaluations, success of students, and peer evaluations when appropriate.

6. Program Integration and Collaboration

a. Closely related programs in this or other Oregon colleges and universities.

Oregon State University offers BA, BS, HBA, and HBS degrees in bioengineering through their Chemical, Biological, and Environmental Engineering department.

Portland State University offers a BSME (Bachelor of Science in Mechanical Engineering) degree. The Mechanical Engineering Department has a research focus in biomaterials.

OHSU offers a PhD in biomedical engineering through their School of Medicine.

b. Ways in which the program complements other similar programs in other Oregon institutions and other related programs at this institution. Proposal should identify the potential for collaboration.

Plans for the new UO degree have been developed in direct communication with deans and provosts at OSU, PSU, and OHSU. All agree that now is an opportune moment to grow strength in the area across the state, as each university has its own unique emphasis area within the broad field of bioengineering. Developing this degree at the University of Oregon is the first step of what is hoped to be a broader collaborative effort of multiple institutions across the state.

c. If applicable, proposal should state why this program may not be collaborating with existing similar programs.

N/A

d. Potential impacts on other programs.

The bioengineering program at the University of Oregon is expected to contribute to statewide efforts to increase Oregon's capabilities in applied life sciences. The program has been developed with a focus on areas of bioengineering that are complimentary to existing programs, rather than competitive and is therefore not expected to negatively impact other institution's programs.

7. External Review

If the proposed program is a graduate level program, follow the guidelines provided in *External Review of New Graduate Level Academic Programs* in addition to completing all of the above information.

N/A

Revised May 2016

Institution: University of Oregon

Program: Bachelor of Science in Bioengineering

Action: At the **February 13, 2020** meeting, the Statewide Provosts Council approved a new program for **University of Oregon, Bachelor of Science in Bioengineering** to move forward to the Oregon Higher Education Coordinating Commission for its review and approval. The **University of Oregon** Board of Trustees approved the **Bachelor of Science in Bioengineering** program at its **January 27, 2020** meeting.

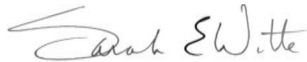
Eastern Oregon University

Sarah Witte, provost

Approved

Opposed

Abstained



University of Oregon

Patrick Phillips, provost

Approved

Opposed

Abstained



Oregon State University

Ed Feser, provost

Approved

Opposed

Abstained



Oregon Health & Science University

Elena Andresen, interim provost

Approved

Opposed

Abstained



Portland State University

Susan Jeffords, provost

Approved

Opposed

Abstained



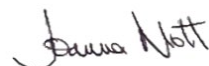
Oregon Tech

Joanna Mott, provost

Approved

Opposed

Abstained



Southern Oregon University

Susan Walsh, provost

Approved

Opposed

Abstained



Western Oregon University

Rob Winningham, provost

Approved

Opposed

Abstained

