Bioengineering Science
Bachelor of Science
2023-2024

General Areas of Service:
Bioengineering or Biomedical Engineering is a broad discipline that advances knowledge in engineering, biology, and medicine. It seeks to improve human health through cross-disciplinary activities that integrate the engineering sciences with the biomedical sciences and clinical practice. Bioengineers are also at the fore of mapping and modeling natural systems, subsequently applying natural biochemical concepts to new systems for energy conversion, food production, material production, medical treatments, computer computation, and data storage. More traditional bioengineers focus on specialized instruments, biochemical processes, biomechanical devices, clinical engineering, ecosystems, specialized computer applications, or public health. A large number of bioengineers are employed by major companies as members of interdisciplinary research teams. Other bioengineers find employment in consulting firms, government agencies, and health care facilities. Approximately half of Walla Walla University bioengineering graduates enter medical or dental school.

Professional Training:
A master's degree in bioengineering, biomedical engineering, or biology is often a minimum requirement for employment. A doctorate is required for some jobs.

Job Outlook:
According to the Bureau of Labor Statistics, "Employment of bioengineers and biomedical engineers is projected to grow 10 percent from 2021 to 2031, faster than the average for all occupations." As technology advances, job opportunities for biomedical engineers develop in collaboration with other fields. (See www.bls.gov)

Earnings:
Expected salaries will vary depending on a particular career focus and advanced education. According to the Bureau of Labor Statistics, in May 2021 the median annual salary for biomedical engineers was $97,410. The median annual income for research and development was $98,610 and manufacturing averaged $97,090. (See www.bls.gov)

Note:
Bioengineering is an interdisciplinary curriculum with flexibility intended to facilitate individual career goals. For this reason, it is very important to consult with a bioengineering adviser in planning a student's class schedule.

Electives must be approved by the Bioengineering Committee after consideration of the total student program. A total of 32 credits must be chosen between Core Electives, Bioengineering Electives, and Electives.

Before graduation, all students must take an exit exam.

BIOLOGY DEPARTMENT

Rigby Hall
(509) 527-2602

SCHOOL OF ENGINEERING

Chan Shun Pavilion
(509) 527-2765

Websites
Walla Walla University
University Bulletin

Bioengineering Major
Biology Department
School of Engineering

Faculty
Advisor
Delvin Peterson
Janice Mckenzie

Professional Organizations
Sloan Career Cornerstone Center - Bioengineering

Biomedical Engineering Society

IEEE Engineering in Medicine & Biology Society

U.S. Bureau of Labor Statistics: Biomedical Engineers

Suggested Degree Path

TOTAL CREDITS REQUIRED: 192 cr. GENERAL STUDIES REQUIREMENTS: 64-69cr. See the Undergraduate Bulletin for Details
The chart below details one suggested path a student may take to complete a bachelor's degree in Bioengineering Science.
Cognates are listed in *italics*.

Freshman Year

Fall Courses	Hours
General Biology (BIOL 141 & 141L)	4
Calculus I (MATH 171)	4
College Writing I (ENGL 121)	3
Intro to Bioengineering (ENGR 120)	2
General Studies	3
Total	16

Winter Courses	Hours
General Biology (BIOL 142)& Lab	4
Calculus II (MATH 172)	4
College Writing II (ENGL 122)	3
General Studies	5
Total	16

Spring Courses	Hours
General Biology (BIOL 143)& Lab	4
Calculus III (MATH 273)	4
Fundamentals of Programming I (CPTR 141)	4
General Studies	4
Total	16

Sophomore Year

Fall Courses	Hours
Engineering Mechanics (ENGR 221)	3
Principles of Physics & Lab (PHYS 251 & 254)	4
General Chemistry & Lab (CHEM 141 & 144)	4
Calculus IV (MATH 274)	4
General Studies	1
Total	16

Winter Courses	Hours
Engineering Mechanics (ENGR 222)	3
Principles of Physics & Lab (PHYS 252 & 255)	4
General Chemistry & Lab (CHEM 142 & 145)	4
Research Writing (ENGL 223)	3
General Studies	2
Total	16

Spring Courses	Hours
Engineering Mechanics (ENGR 223)	3
Principles of Physics & Lab (PHYS 253 & 256)	4
General Chemistry & Lab (CHEM 143 & 146)	4
Ordinary Differential Equations (MATH 286)	4
General Studies	1
Total	16

Junior Year

Fall Courses	Hours
Organic Chemistry & Lab (CHEM 321 & 324)	5
Cell Biology I (BIOL 381)& Lab	4
Biological Research I (BIOL 214)	1-2
Circuit Analysis (ENGR 228)	4
*Colloquium (ENGR/BIOL 495)	0
Total	16

Winter Courses	Hours
Organic Chemistry & Lab (CHEM 322 & 325)	5
*Colloquium (ENGR/BIOL 495)	0
Technical Electives	4
General Studies	7
Total	16

Spring Courses	Hours
Biological Research II (BIOL 314)	1-2
*Colloquium (ENGR/BIOL 495)	0
Probability & Statistics (MATH 315)	4
Technical Electives	6
General Studies	4-5
Total	16

Senior Year

Fall Courses	Hours
Research in Biology (BIOL 414)	1-4
*Colloquium (ENGR/BIOL 495)	0
Technical Electives	7-9
General Studies	7-9
Total	16

Winter Courses	Hours
Research in Biology (BIOL 414)	1-4
*Colloquium (ENGR/BIOL 495)	0
Technical Electives	6-8
General Studies	6-8
Total	16

Spring Courses	Hours
Research in Biology (BIOL 414)	1-4
*Colloquium (ENGR/BIOL 495)	0
Technical Electives	6-8
General Studies	6-8
Total	16

*A total of 6 quarters of colloquium is required: 2-4 of BIOL 495 and 2-4 of ENGR 495.

Office of Academic Advisement
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