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| BioE | **Bioengineering****Degree Requirements**<https://bioe.washington.edu>bioeng@uw.edu | **ENGRUD Requirement Key:**⯁ = **Placement Requirements****★** = *Pick* ***one*** *to satisfy placement requirement***Placement:** July 1 at the end of the first year |

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| **Engineering First-year Interest Group (E-FIG)**⯁ **ENGR 101 (1cr)**GEN ST 199 (1cr)**Mathematics (24-28cr)**⯁ **MATH 124, 125, 126 - Calc. w/ Analytic Geom. I-III (15cr)**MATH 207 - Intro to Differential Equations (4cr)[pr: MATH 125] OR AMATH 351 (3cr) [pr: MATH 125]MATH 208 - Matrix Algebra with Applications (4cr)OR AMATH 352 (3cr) [pr: MATH 126]One course from the following:IND E 315 (3cr), STAT 311 (5cr), STAT 390 (4cr), Q SCI 381 (5cr)**Sciences (44cr)**⯁ **CHEM 142 - General Chemistry (5cr)****★ *CHEM 152 - General Chemistry (5cr)*** [pr: CHEM 142]**★ *CHEM 162 - General Chemistry (5cr)*** [pr. CHEM 152]CHEM 223 - Org. Chem. Short Prog. (4cr) [pr: CHEM 152]OR CHEM 237 - Organic Chemistry (4cr) [pr: CHEM 162]⯁ **PHYS 121 - Mechanics (5cr)** [pr: MATH 124]**★ *PHYS 122 - Electromagnetism (5cr)***[pr: MATH 125; PHYS 121]BIOL 180 - Introductory Biology (5cr)BIOL 200 - Introductory Biology (5cr) [pr: BIOL 180; CHEM 152 (concurrent)]BIOL 220 - Introductory Biology (5cr) [pr: BIOL 200]**General Education Requirements (29-41cr)*****Written and Oral Communication:***⯁ **English Composition (5cr)** Writing (7cr) - can be met by coursework in the major***Areas of Inquiry:***Arts & Humanities - A&H (10cr)Social Sciences - SSc (10cr)Additional A&H or SSc (4cr)***Diversity*** - DIV (5cr) (may overlap with Areas of Inquiry or W)**Engineering Fundamentals (4-5cr)****★ *AMATH 301 - Beg. Scientific Comp. (4cr)*** [pr: MATH 125]OR**★ *CSE 121 - Comp. Prog. I (4cr)*** + BIOEN 217 - MATLAB (1cr)OR**★ *CSE 122 - Comp. Prog. II (4cr)*** + BIOEN 217 - MATLAB (1cr)OR**★ *CSE 123 - Comp. Prog. III (4cr)*** + BIOEN 217 - MATLAB (1cr)OR**★ *CSE 160 - Data Prog. I (4cr)*** *+*BIOEN 217 - MATLAB (1cr)\*CSE course should be completed before taking BIOEN 217 | [**Major Core Requirements**](https://myplan.uw.edu/course/#/courses?states=N4Igwg9grgTgzgUwMoIIYwMYAsQC4TAA6IAZhDALYAiqALqsbkSBqhQA5RyPGJ20AbBMQA0xAJZwUGWuIgA7FOmyMSqAYjEhJASXlxaMKDPJLMWVes3EAjlAQwAnkkPj5Acx4gA5ACEdAPIAogBy3qLEACaojtx4zACMlhoIWgBMydYgAMyZqcQALHlaAKzFxABseQC%2BWgbotEHykQAq4hQIcbgA2gAMIgCcFb0AulpuGAJQkQghCgHsCIoIMnL6jIb24-KT0wgASp2uMgiR0rIKXZv52jtTMwAKMA4INnCHduLPkRtGNxP3BAtABGqHOayufzqWAgAHcAvIBI4HhhkCsLus8GoUtC4QikXoHg44ApwZcarjYb4YHDEOUQFhUFI0OZTr8tlFJJMIIgAIKRABuqB2pzMKixVgQ1RAIhAsPYcDwBGIsLckThAAkEOJ3FhaIwAOwJNIlLSq5pwh488QYxgJbLS6pAA) **(37cr)****★ *BIOEN 215 - Bioengineering Problem Solving (3cr)*** OR **★ *ENGR 115 - Engineering Transformation of Health (3cr)***BIOEN 315 - Biochemical Molecular Engineering (3cr)BIOEN 316 - Biomedical Signals and Sensors (4cr)BIOEN 317 - Biomedical Signals and Sensors Lab (2cr)BIOEN 325 - Biotransport I (4cr)BIOEN 326 - Solid and Gel Mechanics (4cr)BIOEN 327 - Fluids and Materials Laboratory (2cr)BIOEN 335 - Biotransport II (3cr)BIOEN 336 - BioE Systems and Control (3cr)BIOEN 337 - Mass Transport and Systems Laboratory (2cr)BIOEN 345 - Failure Analysis and Human Physiology (4cr)BIOEN 400 - Fundamentals of Bioengineering Design (3cr)**Senior Electives (15cr)**Courses taken from approved list of 400-level and above BIOEN-prefixed engineering courses. [Visit department website for list](https://bioe.uw.edu/academic-programs/undergraduate/undergraduate-degree-requirements/%20).**Capstone & Approved Engineering Electives (7-10cr)**One of the following course pairs: **Option A**: integrated design and researchBIOEN 401 - BioE Capstone Proposal (1cr) (W)BIOEN 402 - Research and Design Capstone (7-9cr) (W) **Option B**: research project and small group design and build BIOEN 404 - Team Design I (3cr) BIOEN 405 - Team Design II (4cr) **Approved Engineering Electives (9-12cr)**Visit department website for a [list of approved courses](https://bioe.uw.edu/academic-programs/undergraduate/undergraduate-degree-requirements/%20). Students completing Capstone Option A are required to take 9 credits of approved electives; students completing Capstone Option B take 12 credits of approved electives. Students can take additional BIOEN-prefixed elective courses to satisfy this requirement area.**Free Electives** **(to reach 180 total credits)**Additional coursework in any subject area not used elsewhere in degree.**Total credits required for graduation: 180cr** |

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| **Bioengineering** |  | **Questions: Contact ENGRUD Advising**Email: engradv@uw.eduOffice: IEB 307Phone: (206) 543-1770 |

This is a sample four-year plan for Bioengineering to provide ENGRUDs a framework to their individual academic plan.

Courses required to request placement for ENGRUD students: **ENGR 101; MATH 124, 125, 126; CHEM 142; PHYS 121; English Composition; choose one:** **BIOEN 215 or ENGR 115, AMATH 301 or CSE 121, CSE 122, or CSE 160 + BIOEN 217, CHEM 152, CHEM 162, PHYS 122.**

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| **Autumn Quarter**⯁ **MATH 124 - Calc. w/ Analytic Geom. I**⯁ **CHEM 142 - General Chemistry****⯁ E-FIG: ENGR 101 & GEN ST 199**A&H / SSc | **cr**5523 | **Winter Quarter****⯁ MATH 125 - Calc. w/ Analytic Geom. II** **★ *CHEM 152* - *General Chemistry*****⯁ English Composition** | **cr**555 | **Spring Quarter****⯁ MATH 126 - Calc. w/ Analytic Geom. III****★ *CHEM 162* - *General Chemistry*****⯁ PHYS 121 - Mechanics** | **cr**555 |
| Qtr. Total: | **15** | Qtr. Total: | **15** | Qtr. Total: | **15** |

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| **Autumn Quarter**BIOL 180 - Introductory Biology CHEM 223 or 237 - Organic ChemistryBIOEN 215 - Intro to BioE. Prob. Solv PHYS 122 - Electromagnetism | **cr**5435 | **Winter Quarter**BIOL 200 - Introductory BiologyAMATH 301 - Beg. Sci. Comp.OR CSE 12X/160 +BIOEN 217A&H / SSc / DIV | **cr**54-55 | **Spring Quarter**MATH 207 - Differential EquationsBIOEN 315 - Biochem. & Molecular Eng.BIOEN 316 - Biomed. Signals & SensorsBIOEN 317 - Signals & Sensors LabA&H / SSc  | **cr**43423 |
| Qtr. Total: | **17** | Qtr. Total: | **14+** | Qtr. Total: | **16** |

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| **Autumn Quarter**BIOEN 325 - Biotransport IBIOEN 326 - Solid and Gel MechanicsBIOEN 327 - Fluids and Materials LabMATH 208 - Matrix AlgebraA&H / SSc | **cr**44243 | **Winter Quarter**BIOEN 335 - Biotransport IIBIOEN 336 - BioE Systems & ControlBIOEN 337 - Mass Transport and Systems LabBIOL 220 - Introductory BiologyIND E 315 - Prob Stats for Engineers | **cr**33253 | **Spring Quarter**BIOEN 345 - Failure Analysis of Human PhysiologyBIOEN 400 - BioE Design ENGRBIOEN Elective IA&H / SScBIOEN 401 - Capstone Proposal (only for 402 track) | **cr**43431 |
| Qtr. Total: | **17** | Qtr. Total: | **16** | Qtr. Total: | **15** |

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| **Autumn Quarter**BIOEN 402 - Design & ResearchBIOEN Elective IIEngineering ElectiveA&H / SSc / W courseCould consider one of the following:Full-time internship (ENGR 321)Study Abroad, Clinical Experience | **cr**33443-6 | **Winter Quarter**BIOEN 402 - Design & ResearchOR BIOEN 404 - Team DesignBIOEN Elective IIIBIOEN Elective IVA&H / SSc | **cr**3343 | **Spring Quarter**BIOEN 402 - Design & ResearchOR BIOEN 405 - Team DesignBIOEN Elective V (if needed)Engineering ElectiveGeneral Elective / W course (if needed) | **cr**3-4345 |
| Qtr. Total: | **14+** | Qtr. Total: | **13+** | Qtr. Total: | **15+** |

**⯁ = Placement Requirement**

**★** = Pick ***one*** to satisfy placement requirements