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| ChemE | **Chemical Engineering**  **Degree Requirements**  [http://cheme.washington.edu](http://cheme.washington.edu/)  [chemeadv@uw.edu](mailto:chemeadv@uw.edu) | **ENGRUD Requirement Key:**  ⯁ = **Placement Requirements**  **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 (24-27cr)**  ⯁ **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), MATH 209 (4cr), STAT 390 (4cr), MATH 224 (4cr), AMATH 353 (3cr)  **Sciences (41cr)**  **⯁ CHEM 142 - General Chemistry (5cr)**  **⯁ CHEM 152 - General Chemistry (5cr)** [pr: CHEM 142]  CHEM 162 - General Chemistry (5cr) [pr: CHEM 152]  \*Strongly recommended to complete in the first year  CHEM 237 - Organic Chemistry (4cr)  OR CHEM 223 (4cr) [pr: CHEM 162]  CHEM 238 - Organic Chemistry (4cr)  OR CHEM 224 (4cr) [pr: CHEM 237]  CHEM E 456 - Quantum Mechanics (3cr) OR CHEM 455 Physical Chemistry (3cr)  [pr: CHEM 162; MATH 207, MATH 208; PHYS 123]  **⯁ PHYS 121 - Mechanics (5cr)**  [pr: MATH 124]  PHYS 122 - Electromagnetism (5cr)  [pr: MATH 125; PHYS 121]  PHYS 123 - Waves (5cr)  [pr: MATH 126; PHYS 122]  **General Education Requirements (29-41cr)**  ***Written and Oral Communication:***  ⯁ **English Composition (5cr)**  Writing (7cr) - 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) | [**Major Core Requirements**](https://myplan.uw.edu/course/#/courses?states=N4Igwg9grgTgzgUwMoIIYwMYAsQC4TAA6IAZhDALYAiqALqsbkSBqhQA5RyPGJ20AbBMQA0xAJZwUGWuIgA7FOmyMSqAYjEhJASXlxaMKDPJLMWVes3EAjlAQwAnkkPj5Acx4ssCCgAJhEC0AE1RHbjxmAEZLDQQtACZY6xAAZmT44gAWDK0AVlziADYMgF8tA3RaAFF5YIAVcQoECNwAbQAGEQBOIo6AXS03DAEoYIQAOQUAeXYERQQZOX1GQ3sh%2BRGxhAAlFtcZBGDpWQVWtcztTdHxgAUYBwQbOD27cQfg1aNL4ZuEeoARqgTstzt8KlgIAB3abyASOW4YZCLU4rPBqOIQ6Gw%2BF6W4OOAKEFnMpYqEAIRg0MQhRAWFQUjQ5iOX3WxGCkhGEEQAEFggA3VCbI5mFToqwIUpBEBQ9hwPAEYhQtzBaEACQQ4ncWFojAA7Kk9VktMq6tDbtzxKjGAkOt0paUgA) **(54cr)**  CHEM E 310 - Material Energy Balances (4cr)  CHEM E 325 - Energy & Entropy (4cr)  CHEM E 326 - Chem. Engineering Thermodynamics (4cr)  CHEM E 330 - Transport Processes I (5cr)  CHEM E 340 - Transport Processes II (4cr)  CHEM E 375 - Chemical Engineering Computing (3cr)  CHEM E 435 - Transport Processes III (4cr)  CHEM E 436 - Chemical Engineering Lab I (3cr) (W)  CHEM E 437 - Chemical Engineering Lab II (3cr) (W)  CHEM E 457 - Principles of Molecular Engineering (3cr)  CHEM E 465 - Reactor Design (4cr)  CHEM E 480 - Process Dynamics and Control (4cr)  CHEM E 485 - Process Design I (4cr)  CHEM E 486 - Process Design II (5cr)  **Molecular and Nanoscience Engineering (3cr)**  CHEM E 455 - Surface and Colloid Science Lab (3cr)  OR  CHEM E 460 - Polymer Chemistry Laboratory (3cr)  **Engineering Electives (16cr)**  Visit department website for [list of approved courses](https://www.cheme.washington.edu/undergraduate_students/curriculum/electives.html).  **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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| Chemical Engineering |  | **Questions? Contact ENGRUD Advising**  Email: engradv@uw.edu  Office: IEB 307  Phone: (206) 543-1770 |

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

Courses required to request placement for ENGRUD students: **ENGR 101; MATH 124, 125, 126; CHEM 142; PHYS 121; English Composition; CHEM 152. Students are strongly recommended to complete CHEM 162 prior to placement.**

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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**  5  5  2  3 | **Winter Quarter**  ⯁ **MATH 125 - Calc w/ Analytic Geom. II**  ⯁ **CHEM 152 - General Chemistry**  ⯁ **English Composition** | **cr**  5  5  5 | **Spring Quarter**  ⯁ **MATH 126 - Calc w/ Analytic Geom. III**  CHEM 162 - General Chemistry  ⯁ **PHYS 121 - Mechanics** | **cr**  5  5  5 |
| Qtr. Total: | **15** | Qtr. Total: | **15** | Qtr.Total: | **15** |

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| **Autumn Quarter**  MATH 207 - Diff. Equations  PHYS 122 - Electromagnetism  CHEM 237/223 - Organic Chem I  A&H / SSc / DIV | **cr**  4  5  4  5 | **Winter Quarter**  PHYS 123 - Waves  CHEM 238/224 - Organic Chem II  MATH 208 - Matrix Algebra  Free Elective | **cr**  5  4  4  4 | **Spring Quarter**  CHEM E 310 - Mat./Energy Balance\*  CHEM E 375 - ChemE Computing  Math Elective  Free Elective | **cr**  4  3  4  3 |
| Qtr. Total: | **18** | Qtr. Total: | **17** | Qtr. Total: | **14** |

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| **Autumn Quarter**  CHEM E 325 - Energy & Entropy CHEM E 330 - Transport Processes I CHEM E 456 - Quantum Mechanics A&H / SSc | **cr**  4  5  3  4 | **Winter Quarter**  CHEM E 326 - ChemE Thermodynamics  CHEM E 340 - Transport Processes II Engineering Elective  A&H / SSc | **cr**  4  4  3  5 | **Spring Quarter**  CHEM E 436 - ChemE Lab I  CHEM E 457 - Principles of Molecular Engineering  Engineering Elective A&H / SSc | **cr**  3  3  4  5 |
| Qtr. Total: | **16** | Qtr. Total: | **16** | Qtr. Total: | **15** |

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| **Autumn Quarter**  CHEM E 435 - Transport Processes III CHEM E 455 - Surface and Colloid  Science Laboratory  CHEM E 465 - Reactor Design Free Elective | **cr**  4  3  4  2 | **Winter Quarter**  CHEM E 437 - CHEM E Lab II  CHEM E 480 - Proc. Dynamics & Control  CHEM E 485 - Process Design I Engineering Elective | **cr**  3  4  4  4 | **Spring Quarter** CHEM E 486 – Process Design II Engineering Elective  Free Elective | **cr**  5  5  4 |
| Qtr. Total: | **13** | Qtr. Total: | **15** | Qtr. Total: | **14** |

 = **Placement Requirement**