

Chemistry – Chemical Engineering Track

3+2 Engineering Dual Degree Program with Notre Dame

Bachelor of Science (BS.CHEM(ENGR))

| Core Requirements | | | Credits | Notes/Instructions |
|---|-----------------------------------|---|-----------|--|
| College Sem. | Quest for Meaning | CSEM 100 | 3 | †A student may be required to take ENGL 105 and/or MATH 100 based on placement exams administered prior to their first semester at King's College. ENGL 105 and MATH 100 are 3-credit courses and will count as free electives. †† The Intercultural Competence requirement can be satisfied by taking a 100-level language class for 3 credits or participating in an approved Study Abroad experience. SBM = Satisfied By King's Major requirement and credits listed below. (3) To satisfy the King's Core requirements, a student will need to complete four (4) Core requirements at Notre Dame |
| Communication & Creative Expression | Writing | ENGL 110† | (3) | |
| | Oral Communication | COMM 101 | (3) | |
| | Literature | ENGL 140-149 | (3) | |
| | The Arts | ARTS 100-149 | (3) | |
| Citizenship | History | HIST 100-149 | (3) | |
| | Intercultural | FREN/GERM/SPAN 100-level or Study Abroad†† | (3) | |
| | Global Connections | ECON 150-199; GEOG 150-199; HIST 150-199; PS 150-199; SOC 150-199 | (3) | |
| Quantitative & Scientific Reasoning | SBM Quantitative Reasoning | MATH 120 ⁺ or higher level | - | |
| | SBM Scientific Endeavor | NSCI 100 | - | |
| | SBM Science in Context | NSCI 171-199 | - | |
| | Human Beh. & Soc. Inst | ECON 111, 112; GEOG 101, 102; PS 101, PSYC 101, SOC 101 | (3) | |
| Wisdom, Faith, & the Good Life | Introduction to Phil. | PHIL 101 | (3) | |
| | Phil. Investigations ³ | PHIL 170-199; MSB 287 ³ | (3) | |
| | Theology & Wisdom | THEO 150-159 | (3) | |
| | Theology & the Good Life | THEO 160-169 | (3) | |
| Total Core Credits taken at King's | | | 27 | |

| King's Major Requirements | Credits |
|--|-----------|
| CHEM 113 ² Gen. Chem. I | 3 |
| CHEM 113L Gen. Chem. I Lab | 1 |
| CHEM 114 ^{PR} Gen. Chem. II | 3 |
| CHEM 114L ^{PR} Gen. Chem. II Lab | 1 |
| CHEM 241 ^{PR} Organic Chem. I | 3 |
| CHEM 241L ^{PR} Organic Chem. I Lab | 1 |
| CHEM 242 ^{PR} Organic Chem. II | 3 |
| CHEM 242L ^{PR} Organic Chem. II Lab | 1 |
| CHEM 243 ^{PR} Analytical Chem. | 3 |
| CHEM 243L ^{PR} Analytical Chem. Lab | 2 |
| CHEM 244 ^{PR} Instrumental Analysis | 3 |
| CHEM 244L ^{PR} Instr. Analysis. Lab | 2 |
| CHEM 357 ^{PR} Physical Chem. I | 3 |
| CHEM 357L ^{PR} Physical Chem. I Lab | 2 |
| CHEM 358 ^{PR} Physical Chem. II | 3 |
| CHEM 358L ^{PR} Physical Chem. II Lab | 2 |
| CHEM 471 ^{PR} Advanced Inorg. Chem. | - |
| MATH 129 ² Anal. Geom. & Calc. I | 4 |
| MATH 130 ^{PR} Anal. Geom. & Calc. II | 4 |
| MATH 231 ^{PR} Anal. Geom. & Calc. III | 4 |
| MATH 237 ^{PR} Math. Meth. Phys. Sci. | 3 |
| MATH 238 ^{PR} Differential Equations | 3 |
| PHYS 113 ^{2,CR} Physics for Sci. & Eng. I | 3 |
| PHYS 113L Phys. for Sci./Eng. I Lab | 1 |
| PHYS 114 ^{PR} Physics for Sci. & Eng. II | 3 |
| PHYS 114L ^{PR} Phys. for Sci./Eng. II Lab | 1 |
| ENGR 150 Engineering Seminar | 2 |
| ENGR 250 Intro. to Eng. Systems | 3 |
| ENGR 250L Eng. Systems Lab | 1 |
| CS 111 Programming for Science & Engineering I | 3 |
| CS 111 Programming for Science & Eng. I Lab | 0 |
| Other Requirements | |
| HCE 101 Holy Cross Experience | 1 |
| Total King's Major and Other Credits | 72 |

| Notre Dame's Major Requirements | Credits |
|--|-----------|
| CBE 20255 Intro. to Chem. Eng. Analysis | 3 |
| CBE 20258 Numerical & Stat Analysis | 3 |
| CBE 20260 Thermodynamics I | - |
| CBE 30338 Chemical Process Control | 3 |
| CBE 30355 Transport Phenomena I | 3 |
| CBE 30356 Transport Phenomena II | 3 |
| CBE 30361 Science of Eng. Materials | 3 |
| CBE 30367 Thermodynamics II | 3 |
| CBE 31358 Chemical Eng. Lab I | 3 |
| CBE 40443 Separation Processes | 3 |
| CBE 40445 Chemical Reaction Eng. | 3 |
| CBE 40448 Chemical Process Design | 3 |
| CBE 41459 Chemical Eng. Lab II | 3 |
| CBE Elective | 3 |
| CBE Elective | 3 |
| Technical Elective | 3 |
| Advanced Science Elective | - |
| CHEM 30324 Physical Chemistry | - |
| CHEM 30333 Analytical Chemistry | - |
| CHEM 31333 Analytical Chem Lab | - |
| CHEM 40443 Inorganic Chemistry | 3 |
| A&L Course (King's Core Course) | 3 |
| A&L Course (King's Core Course) | 3 |
| A&L Course (King's Core Course) | 3 |
| A&L Course (King's Core Course) | 3 |
| Total Notre Dame Credits | 60 |
| General Information | |
| <p>The 3-2 engineering program is a dual degree program. Students spend 3 years at King's College (King's) taking math, science and CORE courses and then transfer to Notre Dame (ND) for 2 years, focusing on engineering courses in their chosen field. Upon successful completion of the program at Notre Dame, students will receive <i>both</i> a B.S. in Chemistry from King's and a B.S. in Chemical Engineering from Notre Dame. (For more information, refer to the college catalog).</p> | |

Total Credits required for Graduations = 159

Chemistry – Chemical Engineering Track

3+2 Dual Degree Engineering Program with Notre Dame

Suggested Sequence

A suggested course sequence of degree requirements is listed below. Refer to the college catalog for course titles, descriptions, and prerequisites. Always consult your Academic Advisor when planning and scheduling your classes.

| King's College | | | |
|---|-----------|--|-----------|
| Fall 2019 | Credits | Spring 2020 | Credits |
| CHEM 113 ² General Chemistry I | 3 | CHEM 114 ^{PR} General Chemistry II | 3 |
| CHEM 113L General Chemistry I Lab | 1 | CHEM 114L ^{PR} General Chemistry II Lab | 1 |
| MATH 129 ² Analytic Geometry & Calculus I | 4 | MATH 130 ^{PR} Analytic Geometry & Calculus II | 4 |
| PHYS 113 ^{2,CR} Physics for Scientists & Engineers I | 3 | PHYS 114 ^{PR} Physics for Scientists & Engineers II | 3 |
| PHYS 113L Physics for Sci. & Eng. I Lab | 1 | PHYS 114L Physics for Sci. & Eng. II Lab | 1 |
| Core Course ¹ | 3 | ENGR 150 Engineering Seminar | 2 |
| HCE 101 Holy Cross Experience | 1 | Core Course ¹ | 3 |
| | 16 | | 17 |
| Fall 2020 | Credits | Spring 2021 | Credits |
| CHEM 241 ^{PR} Organic Chemistry I | 3 | CHEM 242 ^{PR} Organic Chemistry II | 3 |
| CHEM 241L ^{PR} Organic Chemistry I Lab | 1 | CHEM 242L ^{PR} Organic Chemistry II Lab | 1 |
| MATH 231 ^{PR} Analytic Geometry & Calculus III | 4 | MATH 237 ^{PR} Math. Methods for the Phys. Sci. | 3 |
| MATH 238 ^{PR} Differential Equations | 3 | ENGR 250 Intro. to Engineering Systems | 3 |
| CS 111 Programming for Science & Engineering I | 3 | ENGR 250L Engineering Systems Lab | 1 |
| CS 111 Programming for Science & Eng. I Lab | 0 | Core Course ¹ | 3 |
| Core Course ¹ | 3 | Core Course ¹ | 3 |
| | 17 | | 17 |
| Fall 2021 | Credits | Spring 2022 | Credits |
| CHEM 243 ^{PR} Analytical Chemistry | 3 | CHEM 244 ^{PR} Instrumental Analysis | 3 |
| CHEM 243L ^{PR} Analytical Chemistry Lab | 2 | CHEM 244L ^{PR} Instrumental Analysis Lab | 2 |
| CHEM 357 ^{PR} Physical Chemistry I | 3 | CHEM 358 ^{PR} Physical Chemistry II | 3 |
| CHEM 357L ^{PR} Physical Chemistry I Lab | 2 | CHEM 358L ^{PR} Physical Chemistry II Lab | 2 |
| Core Course ¹ | 3 | Core Course ¹ | 3 |
| Core Course ¹ | 3 | Core Course ¹ | 3 |
| | 16 | | 16 |

| Notre Dame | | | |
|---|-----------|---|-----------|
| Fall 2022 | Credits | Spring 2023 | Credits |
| CBE 20255 Intro. to Chem Eng Analysis | 3 | CBE 20258 Numerical & Statistical Analysis | 3 |
| CBE 30355 Transport Phenomena I | 3 | CBE 30338 Chemical Process Control | 3 |
| CBE 30361 Science of Eng. Materials | 3 | CBE 30356 Transport Phenomena II | 3 |
| CBE 30367 Thermodynamics II | 3 | CBE 31358 Chemical Engineering Lab I | 3 |
| A&L Course (King's Core Course ¹) | 3 | A&L Course (King's Core Course ¹) | 3 |
| | 15 | | 15 |
| Fall 2023 | Credits | Spring 2024 | Credits |
| CBE 40443 Separation Processes | 3 | CBE 40448 Chemical Process Design | 3 |
| CBE 40445 Chemical Reaction Engineering | 3 | CBE Elective | 3 |
| CBE 41459 Chemical Engineering Lab II | 3 | Technical Elective | 3 |
| CBE Elective | 3 | CHEM 40443 Inorganic Chemistry | 3 |
| A&L Course (King's Core Course ¹) | 3 | A&L Course (King's Core Course ¹) | 3 |
| | 15 | | 15 |

Total Credits Required for Graduation = 159

NOTES:

CHEM 471 required for the King's degree is satisfied by taking CHEM 40443 Inorganic Chemistry at Notre Dame

CHEM 40443 will satisfy Notre Dame's Advanced Science Elective requirement

CHEM 357/L satisfies the Notre Dame requirement for CBE 20260 Thermodynamics

CHEM 243/L satisfies the Notre Dame requirements for CHEM 30333 Analytical Chemistry and CHEM 31333 Analytical Chemistry Lab

CHEM 358/L satisfies the Notre Dame requirement for CHEM 30324 Physical Chemistry

¹Choose one course from each of the Core Requirements listed on the reverse side.

² Course may satisfy both a Major and a Core requirement. CHEM 113 and PHYS 113 will satisfy the Scientific Endeavor and Science in Context Core requirements.

MATH 129 will satisfy the Quantitative Reasoning Core requirement.

^{PR} Course has a prerequisite – check college catalog.

^{CR} Course has a co-requisite – check college catalog.