

**CHEMISTRY – CHEMICAL ENGINEERING TRACK**

## 3+2 ENGINEERING DUAL DEGREE PROGRAM WITH NOTRE DAME (BS.CHEM(ENGR))

## COURSE REQUIREMENTS

<b>CORE Requirements</b>	<b>Credits</b>	<b>King's Requirements</b>	<b>Credits</b>	<b>Notre Dame Requirements</b>	<b>Credits</b>
CORE 090 First Year Exp.	1	CHEM 113 Gen. Chem. I	3	CBE 20255 Intro. to Chem. Eng. Analysis	3
CORE 100 Lib. Arts Sem.	3	CHEM 113L Gen. Chem. I Lab	1	CBE 20258 Numerical & Stat Analysis	3
CORE 110 Effect. Writ.	3	CHEM 114 Gen. Chem. II	3	CBE 20260 Thermodynamics I	-
CORE 115 or 116 Oral Comm.	3	CHEM 114L Gen. Chem. II Lab	1	CBE 30338 Chemical Process Control	3
CORE 131 or 133 Civilization	3	CHEM 241 Organic Chem. I	3	CBE 30355 Transport Phenomena I	3
CORE 140 or 141-145 Forgn.	3	CHEM 241L Organic Chem. I Lab	1	CBE 30356 Transport Phenomena II	3
CORE 150-159 Social Sci. <sup>1</sup>	3	CHEM 242 Organic Chem. II	3	CBE 30361 Science of Eng. Materials	3
CORE 160-169 Literature	3	CHEM 242L Organic Chem. II Lab	1	CBE 30367 Thermodynamics II	3
CORE 170-179 The Arts	3	CHEM 243 Analytical Chem.	3	CBE 31358 Chemical Eng. Lab I	3
CORE 180-189 Amer. Studies <sup>1</sup>	3	CHEM 243L Analytical Chem. Lab	2	CBE 40443 Separation Processes	3
CORE 190-199 Globl. Studies <sup>1</sup>	(3)	CHEM 244 Instrumental Analysis	3	CBE 40445 Chemical Reaction Eng.	3
CORE 250-259 Syst. Theology	(3)	CHEM 244L Instr. Analysis. Lab	2	CBE 40448 Chemical Process Design	3
CORE 260-269 Mor. Theology	(3)	CHEM 357 Physical Chem. I	3	CBE 41459 Chemical Eng. Lab II	3
CORE 280 Philosophy I	(3)	CHEM 357L Physical Chem. I Lab	2	CBE Elective	3
CORE 281-289 Philosophy II	(3)	CHEM 358 Physical Chem. II	3	CBE Elective	3
		CHEM 358L Physical Chem. II Lab	2	Technical Elective	3
		CHEM 471 Advanced Inorg. Chem.	-	Advanced Science Elective	-
<b>A student will need to complete five (5) of King's College CORE requirements at Notre Dame</b>		MATH 129 Anal. Geom. & Calc. I	4	CHEM 30324 Physical Chemistry	-
		MATH 130 Anal. Geom. & Calc. II	4	CHEM 30333 Analytical Chemistry	-
		MATH 231 Anal. Geom. & Calc. III	4	CHEM 31333 Analytical Chem Lab	-
		MATH 237 Math. Meth. Phys. Sci.	3	CHEM 40443 Inorganic Chemistry	3
		MATH 238 Differential Equations	3	A&L Course (King's CORE)	3
		PHYS 113 Physics for Sci. & Eng. I	3	A&L Course (King's CORE)	3
		PHYS 113L Phys. for Sci./Eng. I Lab	1	A&L Course (King's CORE)	3
		PHYS 114 Physics for Sci. & Eng. II	3	A&L Course (King's CORE)	3
		PHYS 114L Phys. for Sci./Eng. II Lab	1	A&L Course (King's CORE)	3
		ENGR 150 Engineering Seminar	2		
		ENGR 250 Intro. to Eng. Systems	3		
		ENGR 250L Eng. Systems Lab	1		
		CS 116 Fundamentals of Program. I	3		
		CS 116L Fund. of Program. I Lab	-		
Total Credits for CORE @ King's	28	Total Credits for Major @ King's	71	Total Credits @ Notre Dame	63

**Total Credits Required for Graduation = 162**

**Note:** 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

<sup>1</sup>Students are required to take CORE 150, CORE 180 **OR** CORE 190 to fulfill the Interdisciplinary CORE requirement.

- If a student takes CORE 150, then he/she should choose from 181 – 188 to fulfill the 18x requirement AND from 191 – 198 to fulfill the 19x requirement.
- If a student takes CORE 180, then he/she should choose from 151 – 158 to fulfill the 15x requirement AND from 191 – 198 to fulfill the 19x requirement.
- If a student takes CORE 190, then he/she should choose from 151 – 158 to fulfill the 15x requirement AND from 181 – 188 to fulfill the 18x requirement.

**General Information:**

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. Admission into Notre Dame requires a minimum GPA of 3.30 after 5 semesters of college study. Students must earn at least 60 credits from ND to receive the ND degree. Upon successful completion of the program at Notre Dame, students will receive *both* 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).

# CHEMISTRY – CHEMICAL ENGINEERING TRACK

## 3+2 DUAL DEGREE ENGINEERING PROGRAM WITH NOTRE DAME

### SUGGESTED SEQUENCE

- Use the information below as a guide when selecting courses.
- Refer to the reverse side when selecting major courses, major electives, core courses, and free electives when applicable.
- Consult your Academic Advisor prior to course registration.
- Refer to the King's College Catalog and/or website for course titles and descriptions.
- Choose one course from each CORE category as listed on the reverse side.
  - CORE courses may be taken in any order approved by the academic advisor with the following conditions:
    - CORE 100 and CORE 110 should be taken in the first year.
    - CORE 115 (or 116) should be taken within the first two years.
    - For students selecting a Foreign Language (CORE 14x), every effort should be made to register for that language in the first available semester at King's.

<b>King's College</b>					
<b>1<sup>st</sup> Year - Fall</b>		cr.	<b>1<sup>st</sup> Year - Spring</b>		cr.
_____	CHEM 113 General Chemistry I	3	_____	CHEM 114 General Chemistry II	3
_____	CHEM 113L General Chemistry I Lab	1	_____	CHEM 114L General Chemistry II Lab	1
_____	MATH 129 Analytic Geometry & Calculus I	4	_____	MATH 130 Analytic Geometry & Calculus II	4
_____	PHYS 113 Physics for Sci. & Eng. I	3	_____	PHYS 114 Physics for Sci. & Eng. II	3
_____	PHYS 113L Physics for Sci. & Eng. I Lab	1	_____	PHYS 114L Physics for Sci. & Eng. II Lab	1
_____	CORE	3	_____	ENGR 150 Engineering Seminar	2
_____	CORE 090 First Year Experience	1	_____	CORE	3
		<b>16</b>			<b>17</b>
<b>2<sup>nd</sup> Year - Fall</b>			<b>2<sup>nd</sup> Year - Spring</b>		
_____	CHEM 241 Organic Chemistry I	3	_____	CHEM 242 Organic Chemistry II	3
_____	CHEM 241L Organic Chemistry I Lab	1	_____	CHEM 242L Organic Chemistry II Lab	1
_____	MATH 130 Analytic Geometry & Calculus III	4	_____	MATH 238 Differential Equations	3
_____	MATH 237 Math. Methods for Phys. Sci.	3	_____	ENGR 250 Intro. to Engineering Systems	3
_____	CS 116 Fundamentals of Programing I	3	_____	ENGR 250L Engineering Systems Lab	1
_____	CS 116L Fundamentals of Programing I Lab	0	_____	CORE	3
_____	CORE	3	_____	CORE	3
		<b>17</b>			<b>17</b>
<b>3<sup>rd</sup> Year - Fall</b>			<b>3<sup>rd</sup> Year - Spring</b>		
_____	CHEM 243 Analytical Chemistry	3	_____	CHEM 244 Instrumental Analysis	3
_____	CHEM 243L Analytical Chemistry Lab	2	_____	CHEM 244L Instrumental Analysis Lab	2
_____	CHEM 357 Physical Chemistry I	3	_____	CHEM 358 Physical Chemistry II	3
_____	CHEM 357L Physical Chemistry I Lab	2	_____	CHEM 358L Physical Chemistry II Lab	2
_____	CORE	3	_____	CORE	3
_____	CORE	3	_____	CORE	3
		<b>16</b>			<b>16</b>

<b>Notre Dame</b>					
<b>4<sup>th</sup> Year - Fall</b>			<b>4<sup>th</sup> Year - Spring</b>		
_____	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)	3	_____	A&L Course (King's CORE)	3
		<b>15</b>			<b>15</b>
<b>5<sup>th</sup> Year - Fall</b>			<b>5<sup>th</sup> Year - Spring</b>		
_____	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)	3	_____	A&L Course (King's CORE)	3
_____	A&L Course (King's CORE)	3			
		<b>18*</b>			<b>15</b>

**Total Credits Required for Graduation = 162**

\*Students are encouraged to take summer courses to relieve the course load pressure during this semester.