

# PHYSICS – CIVIL ENGINEERING TRACK

3+2 ENGINEERING DUAL DEGREE PROGRAM WITH NOTRE DAME (BS.PHYS(CIVL))

## COURSE REQUIREMENTS

CORE Requirements	Credits	King's Requirements	Credits	Notre Dame Requirements	Credits
CORE 090 First Year Exp.	1	PHYS 113 Physics for Sci. & Eng. I	3	CE 20130 Planet Earth	3
CORE 100 Lib Arts Seminar	3	PHYS 113L Phys. for Sci./Eng. I Lab	1	CE 20150 Statics	-
CORE 110 Effective Writing	3	PHYS 114 Physics for Sci. & Eng. II	3	CE 20230 Programming	1
CORE 115 or 116 Oral Comm.	3	PHYS 114L Phys. for Sci./Eng. II Lab	1	CE 20600 Introduction to CAD	2
CORE 131 or 133 Civilization	3	PHYS 231 Modern Physics	3	CE 30125 Computational Methods	3
CORE 140 or 141-145 Forgn.	3	PHYS 231L Modern Physics Lab	1	CE 30150 Dynamics & Modeling	3
CORE 150-159 Soc. Sci. <sup>1</sup>	3	PHYS 241 Statics	3	CE 30160 Materials w/ Lab	4
CORE 160-169 Literature	3	PHYS 242 Mechanics of Solids	3	CE 30200 Intro to Structural Engineering	3
CORE 170-179 The Arts	3	PHYS 330 Classical Mech.	3	CE 30300 Intro to Environmental Eng.	3
CORE 180-189 Amer. Studies <sup>1</sup>	3	PHYS 350 Thermo/Stat. Mech.	3	CE 30460 Fluid Mechanics	3
CORE 190-199 Global Studies <sup>1</sup>	3	PHYS 371 Electricity & Magnetism I	3	CE 30510 Geotechnical Engineering	4
CORE 250-259 Syst. Theology	(3)	PHYS 440 Quantum Mech.	3	CE 40270 Reinforced Concrete Design	4
CORE 260-269 Mor. Theology	(3)	PHYS 490 Senior Seminar	3	CE 40450 Hydraulics	3
CORE 280 Philosophy I	(3)	PHYS Elective	-	CE 40620 Transportation	3
CORE 281-289 Philosophy II	(3)	CHEM 113 Gen. Chem. I	3	CE 40701 Principles of Practice	1
A student will need to complete four (4) of King's College CORE requirements at Notre Dame		CHEM 113L Gen. Chem. I Lab	1	CE 40702 Senior Design	3
		CHEM 114 Gen. Chem. II	3	CE Core Concentration Elective	3
		CHEM 114L Gen. Chem. II Lab	1	CE Core Concentration Elective	4
		MATH 129 Calculus I	4	CE Elective	3
		MATH 130 Calculus II	4	CE Elective	3
		MATH 231 Calculus III	4	ACMS 30440 Probability & Statistics	-
		MATH 237 Math Meth. for Phys. Sci.	3	AME 20241 Solid Mechanics	-
		MATH 238 Diff. Equations	3	Technical Elective	-
		MATH 361 Probability & Statistics I	3	A&L Course (King's CORE)	3
		ENGR 150 Engineering Seminar	2	A&L Course (King's CORE)	3
		ENGR 250 System Design & Analysis	3	A&L Course (King's CORE)	3
		ENGR 250L Syst. Design & Analysis Lab	1	A&L Course (King's CORE)	3
		CS 111 Programming for Sci. and Eng.	3		
		CS 111L Prog. for Sci. and Eng. Lab	-		
	31		71		68

**Total Credits = 170**

**Note:** The PHYS Elective required for the King's degree is satisfied by any of the 30000 or 40000 level CE courses  
 PHYS 231, PHYS 350, PHYS 371 or PHYS 440 will satisfy Notre Dame's Technical Elective requirement  
 PHYS 241 satisfies the Notre Dame requirement for CE 20150 Statics  
 PHYS 242 satisfies the Notre Dame requirement for AME 20241 Solid Mechanics  
 MATH 361 satisfies the Notre Dame requirements for ACMS 30440 Probability & Statistics

<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 Physics from King's and a B.S. in Civil Engineering from Notre Dame. (For more information, refer to the college catalog).

# PHYSICS – CIVIL ENGINEERING TRACK

## 3+2 ENGINEERING DUAL DEGREE 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 Gen. Chem. I	3	_____	CHEM 114 Gen. Chem. II	3
_____	CHEM 113L Gen. Chem. I Lab	1	_____	CHEM 114L Gen. Chem. II Lab	1
_____	PHYS 113 Physics for Scientists & Engineers I	3	_____	PHYS 114 Physics for Scientists & Engineers II	3
_____	PHYS 113L Physics for Sci. & Eng. I Lab	1	_____	PHYS 114L Physics for Sci. & Eng. II Lab	1
_____	MATH 129 Calculus I	4	_____	ENGR 150 Engineering Seminar	2
_____	CORE	3	_____	MATH 130 Calculus II	4
_____	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>		
_____	PHYS 231 Modern Physics	3	_____	PHYS 330 Classical Mech.	3
_____	PHYS 231L Modern Physics Lab	1	_____	PHYS 241 Statics	3
_____	MATH 231 Calculus III	4	_____	ENGR 250 System Design & Analysis	3
_____	MATH 237 Math Methods for Phys. Sciences	3	_____	ENGR 250L Syst. Design & Analysis Lab	1
_____	CS 111 Programming for Sci. and Eng.	3	_____	MATH 238 Diff. Equations	3
_____	CS 111L Prog. for Sci. and Eng. Lab	0	_____	CORE	3
_____	CORE	3			
		<b>17</b>			<b>16</b>
<b>3<sup>rd</sup> Year - Fall</b>			<b>3<sup>rd</sup> Year - Spring</b>		
_____	PHYS 371 Electricity & Magnetism I	3	_____	PHYS 440 Quantum Mech.	3
_____	PHYS 350 Thermo/Stat. Mech.	3	_____	PHYS 242 Mechanics of Solids	3
_____	MATH 361 Probability & Statistics I	3	_____	PHYS 490 Senior Seminar	3
_____	CORE	3	_____	CORE	3
_____	CORE	3	_____	CORE	3
_____	CORE	3	_____	CORE	3
		<b>18*</b>			<b>18*</b>
<b>Notre Dame</b>					
<b>4<sup>th</sup> Year - Fall</b>			<b>4<sup>th</sup> Year - Spring</b>		
_____	CE 20130 Planet Earth	3	_____	CE 20600 Introduction to CAD	2
_____	CE 30200 Intro to Structural Engineering	3	_____	CE 20230 Programming	1
_____	CE 30300 Intro to Environmental Engineering	3	_____	CE 30150 Dynamics & Modeling	3
_____	CE 30125 Computational Methods	3	_____	CE 30510 Geotechnical Engineering	4
_____	CE 30160 Materials w/ Lab	4	_____	A&L Course (King's CORE)	3
		<b>16</b>	_____	A&L Course (King's CORE)	3
					<b>16</b>
<b>5<sup>th</sup> Year - Fall</b>			<b>5<sup>th</sup> Year - Spring</b>		
_____	CE 30460 Fluid Mechanics	3	_____	CE 40702 Senior Design	3
_____	CE 40620 Transportation	3	_____	CE 40270 Reinforced Concrete Design	4
_____	CE 40701 Principles of Practice	1	_____	CE 40450 Hydraulics	3
_____	CE Core Concentration Elective	4	_____	CE Core Concentration Elective	3
_____	CE Elective	3	_____	CE Elective	3
_____	A&L Course (King's CORE)	3	_____	A&L Course (King's CORE)	3
		<b>17</b>			<b>19*</b>

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