

# PHYSICS – ELECTRICAL ENGINEERING TRACK

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

### COURSE REQUIREMENTS

CORE Requirements	Credits	King's Requirements	Credits	Notre Dame Requirements	Credits
CORE 090 First Yr Exp.	1	PHYS 113 Physics for Sci. & Eng. I	3	CSE 20133 Intro to Computing for EE	3
CORE 100 Lib Arts Sem.	3	PHYS 113L Phys. for Sci./Eng. I Lab	1	CSE 20221 Logic Design	-
CORE 110 Effect Writ.	3	PHYS 114 Physics for Sci. & Eng. II	3	EE 20224 Intr to Electric Circuit Analysis	-
CORE 115 or 116 Oral Comm.	3	PHYS 114L Phys. for Sci./Eng. II Lab	1	EE 20225 Intro to Electrical Engineering	-
CORE 131 or 133 Civilization	3	PHYS 231 Modern Physics	3	EE 20234 Electronic Circuits	3
CORE 140 or 141-145 Forgn.	3	PHYS 231L Modern Physics Lab	1	EE 20242 Electronics	4
CORE 150-159 Soc. Sci. <sup>1</sup>	3	PHYS 233 Electronics I	3	EE 30344 Signals & Systems	3
CORE 160-164 Literature	3	PHYS 233L Electronics I Lab	1	EE 30347 Fund of Semiconductors	3
CORE 170-179 The Arts	3	PHYS 330 Classical Mech.	3	EE 30348 Electromagnetic Fields	-
CORE 180-189 Amer. Studies <sup>1</sup>	3	PHYS 350 Thermo/Stat. Mech.	3	EE 30363 Random Phenomena In EE	3
CORE 190-199 Global Studies <sup>1</sup>	(3)	PHYS 371 Electricity & Magnetism I	3	EE 41430 Design I	3
CORE 250-259 Syst. Theology	(3)	PHYS 440 Quantum Mech.	3	EE 41440 Design II	3
CORE 260-269 Mor. Theology	(3)	PHYS 490 Senior Seminar	2	EE Elective	3
CORE 280 Philos. I	(3)	PHYS Elective	-	EE Elective	3
CORE 281-289 Philos. II	(3)	PHYS Elective	-	EE Elective	3
		CHEM 113 Gen. Chem. I	3	EE Elective	3
		CHEM 113L Gen. Chem. I Lab	1	EE Elective	3
		CHEM 114 Gen. Chem. II	3	EE Elective	3
		CHEM 114L Gen. Chem. II Lab	1	Technical Elective	-
		MATH 129 Calculus I	4	Technical Elective	3
		MATH 130 Calculus II	4	Technical Elective	3
		MATH 231 Calculus III	4	Engineering Science Elective	-
		MATH 237 Applied Linear Algebra	3	A&L Course (King's CORE)	3
		MATH 238 Diff. Equations	3	A&L Course (King's CORE)	3
		ENGR 150 Engineering Seminar	2	A&L Course (King's CORE)	3
		ENGR 250 Intro to Eng. Systems	3	A&L Course (King's CORE)	3
		ENGR 250L Eng Systems Lab	1	A&L Course (King's CORE)	3
		CS 116 Fundamentals of Program. I	3		
		CS 116L Fund. of Program. I Lab	-		
		CS 270 Computer Organization	3		
		CS 270L Computer Organization Lab	1		
	28		69		64

**Total Credits = 161**

**Note:** One PHYS Elective required for the King's degree is satisfied by EE 20242 Electronics, and the other with EE 30347 Fund of Semiconductors.  
 PHYS 233/L satisfies the Notre Dame requirement for EE 20224 Intro to Electric Circuit Analysis and EE 20225 Intro to Electrical Engineering  
 PHYS 371 satisfies the Notre Dame requirement for EE 30348 Electromagnetic Fields  
 CS 270 satisfies the Notre Dame requirement for CSE 20221 Logic Design  
 PHYS 350 will satisfy one of Notre Dame's Technical Elective requirements  
 PHYS 330 will satisfy Notre Dame's Engineering Science Elective requirement

<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 Electrical Engineering from Notre Dame. (*For more information, refer to the college catalog.*)

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### 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 Exp.	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 233 Electronics I	3
_____	MATH 231 Calculus III	4	_____	PHYS 233L Electronics I Lab	1
_____	MATH 237 Applied Linear Algebra	3	_____	ENGR 250 Intro to Engineering Systems	3
_____	CS 116 Fundamentals of Program. I	3	_____	ENGR 250L Engineering Systems Lab	1
_____	CS 116L Fundamentals of Program. I Lab	0	_____	MATH 238 Diff. Equations	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>		
_____	PHYS 371 Electricity & Magnetism I	3	_____	PHYS 440 Quantum Mech.	3
_____	PHYS 350 Thermo/Stat. Mech.	3	_____	PHYS 490 Senior Seminar	2
_____	CORE	3	_____	CS 270 Computer Organization	3
_____	CORE	3	_____	CS 270L Computer Organization Lab	1
_____	CORE	3	_____	CORE	3
		<b>15</b>			<b>15</b>

<b>Notre Dame</b>					
<b>4<sup>th</sup> Year - Fall</b>			<b>4<sup>th</sup> Year - Spring</b>		
_____	CSE 20133 Intro to Computing for EE Majors	3	_____	EE 20242 Electronics	4
_____	EE 20234 Electronic Circuits	3	_____	EE 30363 Random Phenomena in EE	3
_____	EE 30344 Signals & Systems	3	_____	EE Elective	3
_____	EE 30347 Fundamentals of Semiconductors	3	_____	EE Elective	3
_____	A&L Course (King's CORE)	3	_____	A&L Course (King's CORE)	3
		<b>15</b>			<b>16</b>
<b>5<sup>th</sup> Year - Fall</b>			<b>5<sup>th</sup> Year - Spring</b>		
_____	EE 41430 Design I	3	_____	EE 41440 Design II	3
_____	EE Elective	3	_____	EE Elective	3
_____	EE Elective	3	_____	EE Elective	3
_____	Technical Elective	3	_____	Technical Elective	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>

The standard semester course load is five courses consisting of 15 – 17 credits. A student may take 18 credits if the science lab puts them over 17 credits. (for more information about credit loads, please see the college catalog)