

# COMPUTER SCIENCE – COMPUTER ENGINEERING TRACK

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

### COURSE REQUIREMENTS

| CORE Requirements   | Credits | King's Requirements                      | Credits | Notre Dame Requirements                        | Credits |
|---|---------|--|---------|--|---------|
| ___ CORE 090 First Yr Exp.  | 1       | ___ CS 116 Fun. of Software Dev. I       | 3       | ___ CSE 20110 Discrete Mathematics             | -       |
| ___ CORE 100 Lib Arts Sem.  | 3       | ___ CS 116L Fun. of Software Dev. I Lab  | 0       | ___ CSE 20211 Fund of Computing I              | -       |
| ___ CORE 110 Effect Writ.   | 3       | ___ CS 117 Fun. of Software Dev. II      | 3       | ___ CSE 20212 Fund of Computing II             | -       |
| ___ CORE 115 or 116 Oral Comm.  | 3       | ___ CS 117L Fun. of Software Dev. II Lab | 0       | ___ CSE 20221 Logic Design                     | -       |
| ___ CORE 131 or 133 Civilization  | 3       | ___ CS 232 Data Structures               | 3       | ___ CSE 20189 Basic Unix for Engineers         | 3       |
| ___ CORE 140 or 141-145 Forgn.  | 3       | ___ CS 232L Data Structures Lab          | 1       | ___ CSE 30321 Computer Architecture I          | 4       |
| ___ CORE 150-159 Soc. Sci. <sup>1</sup>   | 3       | ___ CS 233 Adv. Data Structures          | 3       | ___ CSE 30331 Data Structures                  | -       |
| ___ CORE 160-164 Literature   | (3)     | ___ CS 233L Adv. Data Structures Lab     | 1       | ___ CSE 30341 Operating Systems                | -       |
| ___ CORE 170-179 The Arts   | (3)     | ___ CS256 Database Management            | 3       | ___ CSE 40175 Ethical & Social Issues          | 3       |
| ___ CORE 180-189 Amer. Studies <sup>1</sup>   | (3)     | ___ CS 256L Database Management Lab      | 1       | ___ CSE 40522 CPEG Capstone Design             | 4       |
| ___ CORE 190-199 Global Studies <sup>1</sup>  | (3)     | ___ CS 270 Computer Organization         | 3       | ___ CSE Elective                               | 3       |
| ___ CORE 250-259 Syst. Theology   | (3)     | ___ CS 270L Computer Organization Lab    | 1       | ___ CSE Elective                               | 3       |
| ___ CORE 260-269 Mor. Theology  | (3)     | ___ CS 315 Programming Paradigms         | 3       | ___ CSE Elective                               | 3       |
| ___ CORE 280 Philos. I  | (3)     | ___ CS 364 Operating Systems             | 3       | ___ CSE Elective                               | -       |
| ___ CORE 281-289 Philos. II   | (3)     | ___ CS 480 Software Engineering          | -       | ___ CSE/Technical/Free Elective                | 3       |
| A student will need to complete seven (7) of King's College CORE requirements at Notre Dame |         | ___ CS Elective (5 courses total)        | -       | ___ CSE/Technical/Free Elective                | 3       |
|   |         | ___ MATH 127 Logic & Axiomatics          | 3       | ___ EE 20224 Intr to Electric Circuit Analysis | -       |
|   |         | ___ MATH 129 Calculus I                  | 4       | ___ EE 20225 Intro to Electrical Engineering   | -       |
|   |         | ___ MATH 130 Calculus II                 | 4       | ___ EE 20234 Electric Circuits                 | 3       |
|   |         | ___ MATH 231 Calculus III                | 4       | ___ EE 20242 Electronics                       | 4       |
|   |         | ___ MATH 235 Discrete Mathematics        | 3       | ___ EE 30344 Signals & Systems I               | 3       |
|   |         | ___ MATH 250 Linear Algebra              | 4       | ___ ACMS 30440 Probability & Statistics        | -       |
|   |         | ___ MATH 361 Probability & Statistics    | 3       | ___ A&L Course (King's CORE)                   | 3       |
|   |         | ___ CHEM 113 Gen. Chem. I                | 3       | ___ A&L Course (King's CORE)                   | 3       |
|   |         | ___ CHEM 113L Gen. Chem. I Lab           | 1       | ___ A&L Course (King's CORE)                   | 3       |
|   |         | ___ CHEM 114 Gen. Chem. II               | 3       | ___ A&L Course (King's CORE)                   | 3       |
|   |         | ___ CHEM 114L Gen. Chem. II Lab          | 1       | ___ 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       |  |         |
|   |         | ___ PHYS 233 Electronics I               | 3       |  |         |
|   |         | ___ PHYS 233L Electronics I Lab          | 1       |  |         |
|   |         | ___ ENGR 150 Engineering Seminar         | 2       |  |         |
|   |         | ___ ENGR 250 Intro to Eng. Systems       | 3       |  |         |
|   |         | ___ ENGR 250L Eng Systems Lab            | 1       |  |         |
|   |         |  | 19      |  | 79      |

**Total Credits = 161**

**Note:** CS 116 and 117 satisfy the Notre Dame requirement for CSE 20211 Fund of Computing I and CSE 20212 Fund of Computing II  
 CS 270/L satisfies the Notre Dame requirement for CSE 20221 Logic Design  
 CS 232/L and CS 233/L satisfy the Notre Dame requirement for CSE 30331 Data Structures  
 CS 364 satisfies the Notre Dame Requirement for CSE 30341 Operating Systems  
 CS 315 satisfies one of the Notre Dame CSE Electives  
 PHYS 233/L satisfies the Notre Dame requirement for EE 20224 Introduction to Electric Circuit Analysis and EE 20225 Introduction to Electrical Engineering  
 MATH 235 satisfies the Notre Dame requirement for CSE 20110 Discrete Mathematics  
 MATH 361 satisfies the Notre Dame requirement for ACMS 30440 Probability & Statistics  
 CS 480 required by King's is satisfied with CSE 40522 CPEG Capstone Design  
 The (5) CS Electives required by King's are satisfied by any other of the 30000 or 40000 level CSE courses taken at Notre Dame.

<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 Computer Science from King's and a B.S. in Computer 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.

| King's College  |  |            |                   |   |           |
|-----------------|--|------------|-------------------|---|-----------|
| 1st Year - Fall |  | cr.        | 1st Year - Spring |   | cr.       |
| _____           | CS 116 Fun. of Software Dev. I ( <i>fall only</i> )      | 3          | _____             | CS 117 <sup>3</sup> Fun. of Software Dev. II ( <i>spring only</i> ) | 3         |
| _____           | CS 116L Fun. of Software Dev. I Lab ( <i>fall only</i> ) | 0          | _____             | CS 117L Fun. of Software Dev. II Lab ( <i>spring only</i> )         | 0         |
| _____           | MATH 129 Calculus I                                      | 4          | _____             | MATH 130 Calculus II  | 4         |
| _____           | 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         |
| _____           | CORE   | 3          | _____             | ENGR 150 Engineering Seminar  | 2         |
| _____           | CORE 090 First Year Exp.                                 | 1          | _____             | CORE  | 3         |
|                 |  | <b>15</b>  |                   |   | <b>16</b> |
| 2nd Year - Fall |  |            | 2nd Year - Spring |   |           |
| _____           | CS 232 Data Structures                                   | 3          | _____             | CS 233 Adv. Data Structures   | 3         |
| _____           | CS 232L Data Structures Lab                              | 1          | _____             | CS 233L Adv. Data Structures Lab                                    | 1         |
| _____           | CS 256 Database Management Systems                       | 3          | _____             | CS 270 Computer Organization  | 3         |
| _____           | CS 256L Database Management Systems Lab                  | 1          | _____             | CS 270L Computer Organization Lab                                   | 1         |
| _____           | MATH 127 Logic & Axiomatics                              | 3          | _____             | MATH 250 Linear Algebra   | 4         |
| _____           | MATH 231 Calculus III                                    | 4          | _____             | ENGR 250 Intro to Engineering Systems                               | 3         |
| _____           | CORE   | 3          | _____             | ENGR 250L Engineering Systems Lab                                   | 1         |
|                 |  | <b>18*</b> |                   |   | <b>16</b> |
| 3rd Year - Fall |  |            | 3rd Year - Spring |   |           |
| _____           | CS 364 Operating Systems                                 | 3          | _____             | CS 315 Programming Paradigms  | 3         |
| _____           | MATH 235 Discrete Mathematics                            | 3          | _____             | CHEM 114 Gen. Chem. II  | 3         |
| _____           | MATH 361 Probability & Statistics                        | 3          | _____             | CHEM 114L Gen. Chem. II Lab   | 1         |
| _____           | CHEM 113 Gen. Chem. I                                    | 3          | _____             | PHYS 233 Electronics I  | 3         |
| _____           | CHEM 113L Gen. Chem. I Lab                               | 1          | _____             | PHYS 233L Electronics I Lab   | 1         |
| _____           | CORE   | 3          | _____             | CORE  | 3         |
|                 |  | <b>16</b>  |                   |   | <b>17</b> |
| Notre Dame      |  |            |                   |   |           |
| 4th Year - Fall |  |            | 4th Year - Spring |   |           |
| _____           | CSE 30321 Computer Architecture I                        | 4          | _____             | CSE 20189 Basic Unix for Engineers                                  | 3         |
| _____           | EE 20234 Electronic Circuits                             | 3          | _____             | CSE Elective  | 3         |
| _____           | EE 30344 Signals & Systems                               | 3          | _____             | EE 20242 Electronics  | 4         |
| _____           | A&L Course (King's CORE)                                 | 3          | _____             | A&L Course (King's CORE)  | 3         |
| _____           | A&L Course (King's CORE)                                 | 3          | _____             | A&L Course (King's CORE)  | 3         |
|                 |  | <b>16</b>  |                   |   | <b>16</b> |
| 5th Year - Fall |  |            | 5th Year - Spring |   |           |
| _____           | CSE Elective   | 3          | _____             | CSE 40175 Ethics & Professional Issues                              | 3         |
| _____           | CSE Elective   | 3          | _____             | CSE 40522 CPEG Capstone Design                                      | 4         |
| _____           | CSE Elective/Technical/Free Elective                     | 3          | _____             | CSE/Technical/Free Elective   | 3         |
| _____           | A&L Course (King's CORE)                                 | 3          | _____             | A&L Course (King's CORE)  | 3         |
| _____           | A&L Course (King's CORE)                                 | 3          | _____             | A&L Course (King's CORE)  | 3         |
|                 |  | <b>15</b>  |                   |   | <b>16</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*)