PHYSICS / SECONDARY EDUCATION
BACHELOR OF SCIENCE (B.S.)

<table>
<thead>
<tr>
<th>CORE Requirements</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CORE 090 First Yr Exp.</td>
<td>1</td>
</tr>
<tr>
<td>CORE 100 Lib Arts Sem.</td>
<td>3</td>
</tr>
<tr>
<td>CORE 110 Effect Writ.</td>
<td>3</td>
</tr>
<tr>
<td>CORE 115 or 116 Oral Comm.</td>
<td>3</td>
</tr>
<tr>
<td>CORE 131 or 133 Civilization</td>
<td>3</td>
</tr>
<tr>
<td>CORE 140 or 141-145 Forgn.</td>
<td>3</td>
</tr>
<tr>
<td>CORE 150-159 Soc. Sci.</td>
<td>3</td>
</tr>
<tr>
<td>CORE 160-164 Literature</td>
<td>3</td>
</tr>
<tr>
<td>CORE 170-179 The Arts</td>
<td>3</td>
</tr>
<tr>
<td>CORE 180-189 Amer. Studies</td>
<td>3</td>
</tr>
<tr>
<td>CORE 190-199 Global Studies</td>
<td>3</td>
</tr>
<tr>
<td>CORE 250-259 Syst. Theology</td>
<td>3</td>
</tr>
<tr>
<td>CORE 260-269 Mor. Theology</td>
<td>3</td>
</tr>
<tr>
<td>CORE 280 Philos. I</td>
<td>3</td>
</tr>
<tr>
<td>CORE 281-289 Philos. II</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credits for CORE</strong></td>
<td><strong>43</strong></td>
</tr>
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<table>
<thead>
<tr>
<th>Major Requirements</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 113</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 113L</td>
<td>1</td>
</tr>
<tr>
<td>PHYS 114</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 114L</td>
<td>1</td>
</tr>
<tr>
<td>PHYS 231</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 231L</td>
<td>1</td>
</tr>
<tr>
<td>PHYS 330</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 350</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 371</td>
<td>3</td>
</tr>
<tr>
<td>PHYS Elective</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credits for Major</strong></td>
<td><strong>59</strong></td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Major Requirements</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 113</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 113L</td>
<td>1</td>
</tr>
<tr>
<td>CHEM 114</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 114L</td>
<td>1</td>
</tr>
<tr>
<td>MATH 129</td>
<td>4</td>
</tr>
<tr>
<td>MATH 130</td>
<td>4</td>
</tr>
<tr>
<td>MATH 231</td>
<td>4</td>
</tr>
<tr>
<td>MATH 237</td>
<td>3</td>
</tr>
<tr>
<td>MATH 238</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credits for Secondary Education</strong></td>
<td><strong>38</strong></td>
</tr>
</tbody>
</table>

Total Credits Required for Graduation = 140

Physics Electives - In addition to the Major Sequence requirements, a Physics Major must also complete a minimum of two (2) upper-level PHYS courses numbered 231 or higher. Some elective courses have a required laboratory component. Some courses in MATH or CHEM may be cross-listed as PHYS.

<table>
<thead>
<tr>
<th>Physics Electives</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 241*</td>
</tr>
<tr>
<td>PHYS 242*</td>
</tr>
<tr>
<td>PHYS 233**</td>
</tr>
<tr>
<td>PHYS 234*</td>
</tr>
<tr>
<td>PHYS 372#</td>
</tr>
<tr>
<td>PHYS 320#</td>
</tr>
<tr>
<td>PHYS 340#</td>
</tr>
<tr>
<td>PHYS 450#</td>
</tr>
</tbody>
</table>

| *Required for some 3+2 Engineering students |
| #Appropriate preparation courses for physics graduate programs |

1Students 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.

2 Updated Child Abuse & Criminal Record & FBI Clearances **REQUIRED** for EDUC 235, EDUC 240, EDUC 302, EDUC 305, EDUC 350, EDUC 366, EDUC 467, and EDUC 468.

3 EDUC 299 Basic Skills is a pre-requisite for all 300 and 400 level education courses. In order to register for this course, you must take and pass all basic skills tests.

General Information:
A student must earn a minimum of 120 credit hours to be awarded the baccalaureate degree. The number of credit hours required for graduation may be higher in certain major programs or if the student elects to pursue a second major. Beyond the requirements of the Core Curriculum and of a student’s chosen major program, the balances of the credit hours required for graduation are “free electives.” Because of the CORE, Major, and Secondary Education requirements, there are no “Free Electives” for students majoring in Physics/Secondary Education.
**PHYSICS/SECONDARY EDUCATION**

**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 available semesters.
    - 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.

<table>
<thead>
<tr>
<th>1st Year - Fall</th>
<th>cr.</th>
<th>1st Year - Spring</th>
<th>cr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 113 Physics for Scientists &amp; Engineers I</td>
<td>3</td>
<td>PHYS 114 Physics for Scientists &amp; Engineers II</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 113L Physics for Sci. &amp; Eng. I Lab</td>
<td>1</td>
<td>PHYS 114L Physics for Sci. &amp; Eng. II Lab</td>
<td>1</td>
</tr>
<tr>
<td>CHEM 113 General Chemistry I</td>
<td>3</td>
<td>CHEM 114 General Chemistry II</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 113L General Chemistry I Lab</td>
<td>1</td>
<td>CHEM 114L General Chemistry II Lab</td>
<td>1</td>
</tr>
<tr>
<td>MATH 129 Calculus I</td>
<td>4</td>
<td>MATH 130 Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>CORE</td>
<td>3</td>
<td>CORE</td>
<td>3</td>
</tr>
<tr>
<td>CORE 090 First Year Experience</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>16</strong></td>
<td></td>
<td><strong>15</strong></td>
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<table>
<thead>
<tr>
<th>2nd Year – Fall</th>
<th>2nd Year – Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 231 Modern Physics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 231L Modern Physics Lab</td>
<td>1</td>
</tr>
<tr>
<td>MATH 231 Calculus III</td>
<td>4</td>
</tr>
<tr>
<td>EDUC 202 Educ. Philos., Ethics, Issues &amp; Trends</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 235 Sec. Development, Cognition, &amp; Learn.</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 231 Technology Module I</td>
<td>1</td>
</tr>
<tr>
<td>EDUC Elective or CORE</td>
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<tr>
<td><strong>15</strong></td>
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</table>

Admission to Candidacy (Complete and return “Application for Teacher Education Program Candidacy” to Education Administrative Assistant no sooner than the completion of 48 credits and no later than 65 credits)

<table>
<thead>
<tr>
<th>3rd Year – Fall</th>
<th>3rd Year – Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 350 Thermodynamics &amp; Stat. Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>MATH 237 Applied Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 305 Meth. For Teaching Diverse Sec. Stud.</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 232 Technology Module II</td>
<td>1</td>
</tr>
<tr>
<td>PHYS Elective or CORE</td>
<td>3</td>
</tr>
<tr>
<td>CORE</td>
<td>3</td>
</tr>
<tr>
<td><strong>16</strong></td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4th Year - Fall</th>
<th>4th Year - Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 371 Electricity &amp; Magnetism I</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 302 Secondary Science Methods</td>
<td>3</td>
</tr>
<tr>
<td>PHYS Elective or CORE</td>
<td>3</td>
</tr>
<tr>
<td>CORE</td>
<td>3</td>
</tr>
<tr>
<td>CORE</td>
<td>3</td>
</tr>
<tr>
<td>CORE</td>
<td>3</td>
</tr>
<tr>
<td><strong>18</strong></td>
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</table>

<table>
<thead>
<tr>
<th>5th Year - Fall</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDUC 467</td>
</tr>
<tr>
<td>EDUC 468</td>
</tr>
<tr>
<td>EDUC 440</td>
</tr>
</tbody>
</table>

**Take Praxis II** 12

**Total Credits Required for Graduation = 139**

**NOTE:** All Secondary Teacher Certification candidates must complete six credits of college level mathematics and six credits of college level English:

<table>
<thead>
<tr>
<th>Math Courses</th>
<th>MATH 129</th>
<th>MATH 130</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Courses</td>
<td>CORE 110</td>
<td>CORE 16</td>
</tr>
</tbody>
</table>

The Pennsylvania Department of Education requires secondary teachers to have a degree in the content area for certification. Students seeking secondary certification must meet with his/her specific content area department for content area courses required for the degree. The Education Division is not responsible for content area or CORE courses for secondary certification candidates.