

# CHEMISTRY / SECONDARY EDUCATION

## BACHELOR OF SCIENCE (BS.CHEM(SEC))

CORE Requirements	Credits	Major Requirements	Credits	Secondary Education	Credits
CORE 090 First Year Exp.	1	CHEM 113 General Chemistry I	3	EDUC 202	3
CORE 100 Lib. Arts Sem.	3	CHEM 113L General Chemistry I Lab	1	EDUC 231	1
CORE 110 Effect. Writ.	3	CHEM 114 General Chemistry II	3	EDUC 232	1
CORE 115 or 116 Oral Comm.	3	CHEM 114L General Chemistry II Lab	1	EDUC 235 <sup>2</sup>	3
CORE 131 or 133 Civilization	3	CHEM 241 Organic Chemistry I	3	EDUC 240 <sup>2</sup>	3
CORE 140 or 141-145 Forgn.	3	CHEM 241L Organic Chemistry I Lab	1	EDUC 270 <sup>2</sup>	3
CORE 150-159 Social Sci. <sup>1</sup>	3	CHEM 242 Organic Chemistry II	3	<b>EDUC 299<sup>3</sup></b>	<b>0</b>
CORE 160-169 Literature	3	CHEM 242L Organic Chem. II Lab	1	EDUC 302 <sup>2,3</sup>	3
CORE 170-179 The Arts	3	CHEM 243 Analytical Chemistry	3	EDUC 305 <sup>2,3</sup>	3
CORE 180-189 Amer. Studies <sup>1</sup>	3	CHEM 243L Analytical Chemistry Lab	2	EDUC 350 <sup>2,3</sup>	3
CORE 190-199 Global Studies <sup>1</sup>	3	CHEM 244 Instrumental Analysis	3	EDUC 366 <sup>2,3</sup>	3
CORE 250-259 Syst. Theology	3	CHEM 244L Instrumental Analysis Lab	2	EDUC 440 <sup>3</sup>	3
CORE 260-269 Mor. Theology	3	CHEM 357 Physical Chemistry I	3	EDUC 467 <sup>2,3</sup>	7
CORE 280 Philosophy I	3	CHEM 357L Physical Chemistry I Lab	2	EDUC 468 <sup>2,3</sup>	2
CORE 281-289 Philosophy II	3	CHEM 358 Physical Chemistry II	3		
		CHEM 358L Physical Chemistry II Lab*	2		
		CHEM 351 Technological Competency	1		
		CHEM 471 Advanced Inorganic Chemistry	3		
		CHEM 493 Senior Colloquium	1		
		CHEM 494 Senior Colloquium	1		
		MATH 129 Analytic Geometry & Calculus I	4		
		MATH 130 Analytic Geometry & Calculus II	4		
		MATH 237 Math. Methods for the Physical Sciences	3		
		MATH 238 Differential Equations	3		
		PHYS 113 Physics for Scientists & Engineers I	3		
		PHYS 113L Physics for Scientists & Engineers I Lab	1		
		PHYS 114 Physics for Scientists & Engineers II	3		
		PHYS 114L Physics for Scientists & Engineers II Lab	1		
Total Credits for CORE	43	Total Credits for Major	64	Total Educ. Credits	38

**Total Credits Required for Graduation = 145**

\*CHEM 358L may be replaced by a semester of research (CHEM 396, CHEM 397, CHEM 496, CHEM 497).

<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.

<sup>2</sup> Updated Child Abuse & Criminal Record & FBI Clearances **REQUIRED** for EDUC 235, EDUC 240, EDUC 270, EDUC 302, EDUC 305, EDUC 350, EDUC 366, EDUC 467 and EDUC 468.

<sup>3</sup> 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 Chemistry/Secondary Education.**

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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 semester at King's.

1 <sup>st</sup> Year - Fall		cr.	1 <sup>st</sup> Year - Spring		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 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	CORE		3
CORE 090 First Year Experience		1	CORE		3
		<b>16</b>			<b>18</b>
2 <sup>nd</sup> Year - Fall			2 <sup>nd</sup> Year - Spring		
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 237 Math. Methods for the Physical Sciences		3	MATH 238 Differential Equations		3
EDUC 202 Educ. Philos., Ethics, Issues & Trends		3	EDUC 240 <sup>2</sup> Sec. Multicult., Linguistic & Inst. Meth.		3
EDUC 235 <sup>2</sup> Sec. Development, Cognition, & Learn.		3	EDUC 270 <sup>2</sup> Intro to SPED		3
EDUC 231 Technology Module I		1	<b>EDUC 299<sup>3</sup></b>		<b>0</b>
CORE		3	CORE		3
		<b>17</b>			<b>16</b>
<b>Admission to Candidacy</b> (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)					
3 <sup>rd</sup> Year - Fall			3 <sup>rd</sup> Year - Spring		
CHEM 243 Analytical Chemistry		3	CHEM 244 Instrumental Analysis		3
CHEM 243 Analytical Chemistry Lab		2	CHEM 244 Instrumental Analysis Lab		2
CHEM 357 Physical Chemistry I		3	CHEM 358 Physical Chemistry II		3
CHEM 357 Physical Chemistry I Lab		2	CHEM 358 Physical Chemistry II Lab		2
CHEM 351 Technological Competency		1	EDUC 305 <sup>2,3</sup> Assessment I		3
EDUC 366 <sup>2,3</sup> Meth. for Teaching Diverse Sec. Stud.		3	CORE		3
EDUC 232 Technology Module II		1			
CORE		3			
		<b>18</b>			<b>16</b>
4 <sup>th</sup> Year - Fall			4 <sup>th</sup> Year - Spring		
CHEM 471 Advanced Inorganic Chemistry		3	CHEM 494 Senior Colloquium		1
CHEM 493 Senior Colloquium		1	EDUC 350 <sup>2,3</sup> Secondary Classroom Management		3
EDUC 302 <sup>2,3</sup> Secondary Science Methods		3	CORE		3
CORE		3	CORE		3
CORE		3	CORE		3
CORE		3	CORE		3
		<b>16</b>			<b>16</b>
5 <sup>th</sup> Year - Fall					
EDUC 467 <sup>2,3</sup> Observation & Student Teach. (Sec. Ed.)		7			
EDUC 468 <sup>2,3</sup> Student Teaching Seminar		2			
EDUC 440 <sup>3</sup> Inclusive Education		3			
<b>Take Praxis II</b>					
		<b>12</b>			

**Total Credits Required for Graduation = 145**

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

<b>Math Courses</b>	MATH 129	MATH 130
<b>English Courses</b>	CORE 110	CORE 16__

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.