BIOLOGY / SECONDARY EDUCATION CERTIFICATION

BACHELOR OF SCIENCE (BS.BIOL(EDUC))

CORE Requirements	Credits
CORE 090 First Year Exp.	1
CORE 100 Lib Arts Sem.	3
CORE 110 Effect Writ.	3
CORE 115 or 116 Oral Comm.	3
CORE 131 or 133 Civilization	3
CORE 140 or 141-145 Forgn.	3
CORE 150-159 Soc. Sci. [1]	3
CORE 160-169 Literature	3
CORE 170-179 The Arts	3
CORE 180-189 Amer. Studies[1]	3
CORE 190-199 Global Studies[1]	3
CORE 250-259 Syst. Theology	3
CORE 260-269 Mor. Theology	3
CORE 280 Philos. I	3
CORE 281-289 Philos. II	3
Total Credits for CORE	43

Major Requirements	Credits
BIOL 113	3
BIOL 113L	1
BIOL 210	3
BIOL 210L	1
BIOL 213	3
BIOL 213L	1
BIOL 270[3]	1
BIOL 370[4]	2
BIOL 470[5]	1
BIOL Elective*	4
BIOL Elective*	4
BIOL Elective*	4
BIOL Elective*	3
BIOL 490/RIC[6]	3

Major Requirements	Credits
CHEM 113	3
CHEM 113L	1
CHEM 114	3
CHEM 114L	1
CHEM 241	3
CHEM 241L	1
CHEM 242	3
CHEM 242L	1
MATH 125	4
MATH 128	4
PHYS 111	3
PHYS 111L	1
PHYS 112	3
PHYS 112L	1
Total Credits for Major	66

Secondary Education	Credits
EDUC 202	3
EDUC 231	1
EDUC 232	1
EDUC 235[2]	3
EDUC 240[2]	3
EDUC 270[2]	3
EDUC 299[7]	**0**
EDUC 302[2,7]	3
EDUC 305[2,7]	3
EDUC 350[2,6,7]	3
EDUC 366[2,7]	3
EDUC 440[7]	3
EDUC 467[2,7]	10
EDUC 468[2,7]	2
Total Credits for Secondary Education	41

Total Credits Required for Graduation = 150

*In addition to the Major Sequence requirements, a Biology Major must also complete a minimum of five (5) upper-level courses (minimum of three with lab). In addition, one of these courses must be research intensive (consult with Biology advisor). Biology majors also have the option to choose a major emphasis in Pre-Health, Molecular Biology, or Ecology (see College Catalog).

Biology Electives		
BIOL 310 Computer Modeling in Biology & Env. Sci	BIOL 349 Animal Behavior	BIOL 416 Parasitology
BIOL 314 Microbiology	BIOL 350 Vertebrate Embryology	BIOL 420 Botany
BIOL 323 Genetics	BIOL 353 Biochemistry	BIOL 430 Ecology
BIOL 326 Immunology	BIOL 355 Comparative Vertebrate Anatomy	BIOL 447 Physiology
BIOL 330 Introductory Bioinformatics	BIOL 380 Neuroendocrinology	BIOL 450 Molecular Genetics: DNA Science
BIOL 336 Cell Biology	BIOL 401 Special Topics in Env. Science	BIOL 456 Molecular Neuroscience

[1] 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.

[2] 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.
[3] Sophomore Seminar – Spring Semester of Sophomore Year
[4] Junior Seminar – Fall or Spring Semester of Junior Year
[5] Senior Seminar – Spring Semester of Senior Year
[6] Research requirement: Biology 490 or Biology Elective that is designated as a Research intensive course (RIC)
[7] 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. Formal application to the Education Department between 48 and 60 credits – failure to complete EDUC 299 by 60 credits will result in the dropping of teacher certification in compliance with PDE regulations.

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 Biology/Secondary Education.**

See reverse side for a suggested sequence

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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.

	1st Year - Fall	cr.		**1st Year - Spring**	cr.
	BIOL 113 Evolution & Diversity	3		BIOL 210 Organisms & Their Ecosystems	3
	BIOL 113L Evolution & Diversity Lab	1		BIOL 210L Organisms & Their Ecosystems Lab	1
	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
	CORE	3		MATH 125 Calculus	4
	CORE	3		CORE	3
	CORE 090 First Year Experience	1			
		16			**15**
	2nd Year - Fall				
	BIOL 213 Cell & Molecular Biology	3		BIOL 270 Sophomore Seminar	1
	BIOL 213L Cell & Molecular Biology Lab	1		BIOL Elective*	3
	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 128 Intro. to Statistics & Data Analysis	4		CORE	3
	EDUC 202 Educ. Philos., Ethics, Issues & Trends	3		EDUC 240[2] Sec. Multicult., Linguistic & Inst. Meth.	3
	EDUC 235[2] Sec. Development, Cognition, & Learn.	3		EDUC 270[2] Introduction to Special Education	3
				EDUC 231 Technology Module I	1
				EDUC 299[7]	0
		18			**18**
	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)				
	3rd Year – Fall			**3rd Year – Spring**	
	PHYS 111 Physics for the Life Sciences I	3		PHYS 112 Physics for the Life Sciences II	3
	PHYS 111L Physics for the Life Sciences I Lab	1		PHYS 112L Physics for the Life Sciences II Lab	1
	BIOL Elective*	3		BIOL Elective*	3
	BIOL 370[4] Junior Seminar	2		BIOL Elective Lab*	1
	CORE	3		CORE	3
	CORE	3		CORE	3
	EDUC 305[2,7] Assessment I	3		EDUC 366[2,7]Meth. For Teaching Diverse Sec. Stud.	3
				EDUC 232 Technology Module II	1
		18			**18**
	4th Year - Fall			**4th Year - Spring**	
	BIOL 490 or RIC[6] Elective with lab*	4		BIOL 470[5] Senior Seminar	1
	CORE	3		BIOL Elective*	3
	CORE	3		BIOL Elective Lab*	1
	CORE	3		CORE	3
	EDUC 302[2,7] Secondary Science Methods	3		CORE	3
				CORE	3
				EDUC 350[2,7] Secondary Classroom Management	3
		16			**17**
	5th Year - Fall				
	EDUC 467[2,7] Observation & Student Teach. (Sec Ed)	10		**Students who wish to finish in four (4) years (including Student Teaching) MUST take summer courses.**	
	EDUC 468[2,7] Student Teaching Seminar	2			
	EDUC 440[7] Inclusive Education	3			
	Take Praxis II	**15**			

Total Credits Required for Graduation = 150

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

Math Courses	MATH 125	MATH 128
English Courses	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.