Physics – Pre-Calculus Track
(For students who need Pre-Calculus)
Bachelor of Science (BS.PHYS)

Core Requirements				Credits	Notes/Instructions
College Sem.		Quest for Meaning	CSEM 100	3	†A student may be required to take ENGL 105 and/or MATH 100 based on placement exams administered prior to their first semester at King's College. ENGL 105 and MATH 100 are 3-credit courses and will count as free electives.
Communication & Creative Expression		Writing	ENGL 110†	3	
		Oral Communication	COMM 101	3	
		Literature	ENGL 140-149	3	
		The Arts	ARTS 100-149	3	
Citizenship		History	HIST 100-149	3	††The Intercultural Competence requirement can be satisfied by taking a 100-level language class for 3 credits or participating in an approved Study Abroad experience. . (See college catalog for more information)
		Intercultural	FREN/GERM/SPAN 100-level or Study Abroad††	3	
		Global Connections	ECON 150-199; GEOG 150-199; HIST 150-199; PS 150-199; SOC 150-199	3	
Quantitative & Scientific Reasoning	SBM	Quantitative Reasoning	MATH 120† or higher level	-	
	SBM	Scientific Endeavor	NSCI 100	-	
	SBM	Science in Context	NSCI 171-199	-	
		Human Beh. & Soc. Inst	ECON 111, 112; GEOG 101, 102; PS 101, PSYC 101, SOC 101	3	SBM = Satisfied By Major requirement(s) and credit(s) listed below.
Wisdom, Faith, & the Good Life		Introduction to Phil.	PHIL 101	3	
		Phil. Investigations	PHIL 170-199	3	
		Theology & Wisdom	THEO 150-159	3	
		Theology & the Good Life	THEO 160-169	3	
			Total Core Credits	**39**	

Major Requirements	Credits	Major Requirements	Credits	Elective[3] / Other Requirements	Credits
PHYS 113[CR,PR]	3	CHEM 113	3	HCE 101 Holy Cross Exper.	1
PHYS 113L	1	CHEM 113L	1	MATH 110	3
PHYS 114[PR]	3	CHEM 114[PR]	3	CS 111 or CS 112 w/ Lab	3
PHYS 114L[PR]	1	CHEM 114L[PR]	1	Free Elective[3]	3
PHYS 231[PR]	3	MATH 129	4	Free Elective[3]	3
PHYS 231L[PR]	1	MATH 130[PR]	4	Free Elective[3]	3
PHYS 330[PR]	3	MATH 231[PR]	4	Free Elective[3]	3
PHYS 350[PR]	3	MATH 237[PR]	3		
PHYS 371[PR]	3	MATH 238[PR]	3		
PHYS 440[PR]	3				
PHYS 490[PR]	3				
PHYS Elective* [PR]	3				
PHYS Elective* [PR]	3				
PHYS Elective**,[PR]	3				
Total Major Credits	**36**	**Total Major Credits**	**26**	**Total Elective[3]/ Other Credits**	**19**

Total Credits Required for Graduation = 120

*Physics Electives - In addition to the Major Sequence requirements, a Physics Major must also complete a minimum of three (3) upper-level PHYS courses numbered 231 or higher. Some elective courses have a required laboratory component. Some courses in MATH, ENGR or CHEM may be cross-listed as PHYS. Students may choose to take electives in the Fall or Spring semester, as long as the necessary Elective and Core requirements are met.

**One Physics Elective can be satisfied with 3-credits of student research.

Physics Electives for Engineering	Physics Electives for Graduate School	
PHYS 241: Statics	PHYS 250: Relativity	PHYS 340: Optics
PHYS 242: Mechanics of Solids	PHYS 260: Num. Techniques	PHYS 420: Particle Phys.
PHYS 233: Electronics I	PHYS 285: Astrophysics	PHYS 450: Atomic & Nuclear Phys
PHYS 234: Electronics II	PHYS 320: Adv. Lab	
PHYS 360: Fluid Dynamics	PHYS 372: E&M II	

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."

Effective 07/01/2025

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Suggested Sequence

A suggested course sequence of degree requirements is listed below. Refer to the college catalog for course titles, descriptions, and prerequisites. Always consult your Academic Advisor when planning and scheduling your classes.

Fall	Credits	Spring	Credits
CHEM 113 General Chemistry I	3	CHEM 114[PR] General Chemistry II	3
CHEM 113L General Chemistry I Lab	1	CHEM 114L[PR] General Chemistry II Lab	1
MATH 110 Precalculus	3	MATH 129 Calculus I	4
Core Course[1]	3	Core Course[1]	3
Core Course[1]	3	Core Course[1]	3
HCE 101 Holy Cross Experience	1		
	14		**14**

Summer	Credits		
MATH 130 Calculus II	**4**		

Fall	Credits	Spring	Credits
PHYS 113[CR,PR] Physics for Scientists & Engineers I	4	PHYS 114[PR] Physics for Scientists & Engineers II	3
PHYS 113L Physics for Sci. & Eng. I Lab	1	PHYS 114L[PR] Physics for Sci. & Eng. II Lab	1
MATH 231[PR] Calculus III	4	Core Course[1]	3
Core Course[1]	3	Core Course[1]	3
Core Course[1]	3	Core Course[1]	3
		Core Course[1]	3
	15		**16**

Summer	Credits		

Fall	Credits	Spring	Credits
PHYS 231[PR] Modern Physics	3	PHYS 330[PR] Classical Mechanics	3
PHYS 231L[PR] Modern Physics Lab	1	PHYS Elective**,[PR]	3
PHYS Elective* [PR]	3	MATH 237[PR] Math Methods for Phys. Sciences	3
MATH 238[PR] Differential Equations	3	PHYS Elective* [PR]	3
(CS 111[4] or CS 112 with Lab) or Free Elective[3]	3	Free Elective[3]	3
Core Course[1]	3		
	16		**15**

Summer	Credits		

Fall	Credits	Spring	Credits
PHYS 350[PR] Thermodynamics & Stat. Mechanics	3	PHYS 440[PR] Quantum Mechanics	3
PHYS 371[PR] Electricity & Magnetism I	3	PHYS 490[PR] Senior Seminar	3
Core Course[1]	3	PHYS Elective* [PR]	3
Core Course[1]	3	Core Course[1]	3
Free Elective[3]	3	Free Elective[3]	3
	15		**15**

Total Credits Required for Graduation = 120			

NOTES:

[1] Choose one course from each of the Core Requirements listed on the reverse side.

[2] Course may satisfy both a Major and a Core requirement. MATH 129 satisfies the Quantitative Reasoning Core requirement, PHYS 113 and CHEM 113 satisfy the Scientific Endeavor and Science in Context Core requirements.

[3] Students may select "free electives" for personal enrichment **OR** for Minor and/or Second Major Requirements.

[4] CS 111 is recommended as a free elective but not required.

[PR] Course has a prerequisite – check college catalog.

[CR] Course has a co-requisite – check college catalog.