CIVIL ENGINEERING

BACHELOR OF SCIENCE - COURSE REQUIREMENTS

	CORE Requirements	Credits
	CORE 090 First Yr Exp.	1
	CORE 100 Lib Arts Sem.	3
	CORE 110 Effect Writ.	3
	CORE 115/116 Oral Com.	3
	CORE 131/133 Civilization	3
	CORE 14x Forgn. Lng/Cult	3
	CORE 15x Social Science[1,2]	3
	CORE 16x Literature	3
	CORE 17x The Arts	3
	CORE 18x Amer. Studies[1]	3
	CORE 19x Glbl Studies[1,2]	3
	CORE 25x Syst. Theology[2]	3
	CORE 26x Mor. Theology[2]	3
	CORE 280 Philosophy I	3
	CORE 28x Philosophy II[2]	3
		43

	Foundational Science and Mathematics Requirements	Credits
	PHYS 113 Physics for Sc & Eng I	3
	PHYS 113L Phy for Sc & Eng I Lab	1
	PHYS 114 Physics for Sc & Eng II	3
	PHYS 114L Phy for Sc & Eng II Lab	1
	CHEM 113 Gen. Chem. I	3
	CHEM 113L Gen. Chem. I Lab	1
	CHEM 114 Gen. Chem. II	3
	CHEM 114L Gen. Chem. II Lab	1
	MATH 129 Calculus I	4
	MATH 130 Calculus II	4
	MATH 231 Calculus III	4
	MATH 237 Applied Linear Algebra	3
	MATH 238 Differential Equations	3
		34

	Mechanical Engineering Requirements	Credits
	ENST 201 Environmental Science I	3
	ENST 201L Environmental Science I Lab	1
	PHYS 241 Statics	3
	PHYS 242 Mechanics of Solids	3
	CS 1xx Comp Prog for Engineers	2
	CS 1xx Comp Prog for Eng Lab	1
	ENGR 100 Introduction to Engineering	1
	ENGR 150 Engineering Seminar	2
	ENGR 250 System Design & Analysis	3
	ENGR 250L System Design & An Lab	1
	ENGR 320 Fluid Mechanics	3
	ENGR 320L Fluid Mechanics Lab	.5
	ENGR 330 Project Mgmt & Eng Econ	3
	ENGR 350 Engineering Materials	3
	ENGR 350L Engineering Materials Lab	.5
	ENGR 360 Probability & Eng Statistics	3
	CE 200 Intro to Civil Engineering	3
	CE 200L Civil Engineering Lab	.5
	CE 300 Dynamics and Modeling	3
	CE 320 Civil Engineering Materials	3
	CE 320/L Civil Eng Materials Lab	1
	CE 340 Hydraulics and Hydrology	3
	CE 340/L Hydraulics and Hydrology Lab	1
	CE 360 Geotechnical Engineering	3
	CE 400 Structural Design and Analysis I	3
	CE 400L Structural Design I Lab	1
	CE 420 Transportation Engineering	3
	CE 430 Environmental Engineering	3
	CE 440 Structural Design and Analysis II	3
	CE 440L Structural Design II Lab	1
	CE 480 Senior Civil Engineering Seminar	2
		66.5

Total Credits = 143.5

[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 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 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 choose from 151 – 158 to fulfill the 15x requirement AND from 181 – 188 to fulfill the 18x requirement.

[2] ME students are encouraged to take the following CORE courses:

- CORE 153 Macro Economics to fulfill the Social Science requirement
- CORE 193 Globalization to fulfill the Global Studies requirement.
- MSB 287 Business Ethics, CORE 284 Environmental Ethics, or CORE 288 Bioethics to fulfill the Philosophy II requirement.
- CORE 256 Science, Technology & Culture to fulfill the Systematic Theology Requirement
- CORE 265 Christian Ethics and the Environment to fulfill the Moral Theology Requirement

Civil Engineering students are eligible to sit for industry certification exams based on the completion of the following courses:

- ENGR 330: Proj Mgmt & Eng Econ: Certified Associate in Project Management (CAPM)® - Project Management Institute
- CE 480 Senior CE Seminar: Fundamentals of Engineering – Civil (NCEES)

CIVIL ENGINEERING

SUGGESTED SEQUENCE – 4 YEAR PROGRAM

- 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.
    - CORE 098, CORE 099, and/or CORE 110L, if required, will fulfill general elective credits.
    - 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.

	1st Year - Fall	cr.		**1st Year - Spring**	cr.
____	CHEM 113 Gen. Chem. I	3	____	CHEM 114 Gen. Chem. II	3
____	CHEM 113L Gen. Chem. I Lab	1	____	CHEM 114L Gen. Chem. II Lab	1
____	PHYS 113 Physics for Scientists & Engineers I	3	____	PHYS 114 Physics for Scientists & Engineers II	3
____	PHYS 113L Physics for Scientists & Eng I Lab	1	____	PHYS 114L Physics for Scientists & Eng II Lab	1
____	MATH 129 Calculus I	4	____	MATH 130 Calculus II	4
____	ENGR 100 Introduction to Engineering	1	____	ENGR 150 Engineering Seminar	2
____	CORE	3	____	CORE	3
____	CORE 090 First Year Exp.	1			
		17			**17**
	2nd Year - Fall			**2nd Year – Spring**	
____	CE 200 Intro to Civil Engineering	3	____	ENGR 250 System Design & Analysis	3
____	CE 200L Civil Engineering Lab	.5	____	ENGR 250L System Design & Analysis Lab	1
____	MATH 231 Calculus III	4	____	ENGR 330 Project Mgmt & Eng Econ	3
____	MATH 237 Applied Linear Algebra	3	____	PHYS 241 Statics	3
____	CS 1xx Computer Programming for Engineers	2	____	MATH 238 Differential Equations	3
____	CS 1xxL Computer Prog for Engineers Lab	1	____	CORE	3
____	ENST 201 Environmental Science I	3	____	CORE	3
____	ENST 201L Environmental Science I Lab	1			
		17.5			**19***
	3rd Year – Fall			**3rd Year – Spring**	
____	ENGR 320 Fluid Mechanics	3	____	CE 320 Civil Engineering Materials	3
____	ENGR 320L Fluid Mechanics Lab	0.5	____	CE 320L Civil Eng Materials Lab	1
____	ENGR 350 Engineering Materials	3	____	CE 340 Hydraulics and Hydrology	3
____	ENGR 350L Engineering Materials Lab	0.5	____	CE 340L Hydraulics and Hydrology Lab	1
____	CE 300 Dynamics and Modeling	3	____	ENGR 360 Probability & Engineering Statistics	3
____	CORE	3	____	PHYS 242 Mechanics of Solids	3
____	CORE	3	____	CORE	3
____	CORE	3			
		19*			**17**
	4th Year - Summer				
	Summer Co-Op				
	4th Year - Fall			**4th Year – Spring**	
____	CE 400 Structural Design and Analysis I	3	____	CE 440 Structural Design and Analysis II	3
____	CE 400L Structural Design and Analysis I Lab	1	____	CE 440L Structural Design and Analysis II	1
____	CE 360 Geotechnical Engineering	3	____	CE 430 Environmental Engineering	3
____	CE 420 Transportation Engineering	3	____	CE 480 Senior CE Seminar	2
____	CORE	3	____	CORE	3
____	CORE	3	____	CORE	3
____	CORE	3	____	CORE	3
		19*			**18***

Total Credits Required for Graduation = 143.5

* Students are encouraged to take a summer course to relieve the credit load during this semester

CIVIL ENGINEERING

SUGGESTED SEQUENCE – 5 YEAR PROGRAM WITH CO-OP

- 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.
    - CORE 098, CORE 099, and/or CORE 110L, if required, will fulfill general elective credits.
    - 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.

	1st Year - Fall	cr.		**1st Year - Spring**	cr.
	CHEM 113 Gen. Chem. I	3		CHEM 114 Gen. Chem. II	3
	CHEM 113L Gen. Chem. I Lab	1		CHEM 114L Gen. Chem. II Lab	1
	PHYS 113 Physics for Scientists & Engineers I	3		PHYS 114 Physics for Scientists & Engineers II	3
	PHYS 113L Physics for Scientists & Eng I Lab	1		PHYS 114L Physics for Scientists & Eng II Lab	1
	MATH 129 Calculus I	4		MATH 130 Calculus II	4
	ENGR 100 Introduction to Engineering	1		ENGR 150 Engineering Seminar	2
	CORE	3		CORE	3
	CORE 090 First Year Exp.	1			
		17			**17**
	2nd Year - Fall			**2nd Year – Spring**	
	CE 200 Intro to Civil Engineering	3		ENGR 250 System Design & Analysis	3
	CE 200L Civil Engineering Lab	.5		ENGR 250L System Design & Analysis Lab	1
	MATH 231 Calculus III	4		ENGR 330 Project Mgmt & Eng Econ	3
	MATH 237 Applied Linear Algebra	3		PHYS 241 Statics	3
	CS 1xx Computer Programming for Engineers	2		MATH 238 Differential Equations	3
	CS 1xxL Computer Prog for Engineers Lab	1		CORE	3
		13.5			**16**
	3rd Year – Fall			**3rd Year – Spring**	
	ENGR 320 Fluid Mechanics	3		CE 320 Civil Engineering Materials	3
	ENGR 320L Fluid Mechanics Lab	0.5		CE 320L Civil Eng Materials Lab	1
	ENGR 350 Engineering Materials	3		CE 340 Hydraulics and Hydrology	3
	ENGR 350L Engineering Materials Lab	0.5		CE 340L Hydraulics and Hydrology Lab	1
	CE 300 Dynamics and Modeling	3		PHYS 242 Mechanics of Solids	3
	CORE	3		CORE	3
	CORE	3		CORE	3
		16			**17**
	4th Year - Fall			**4TH Year - Spring**	
	CE 400 Structural Design and Analysis I	3		CE 430 Environmental Engineering	3
	CE 400L Structural Design and Analysis I Lab	1		ENGR 360 Probability & Engineering Statistics	3
	CE 360 Geotechnical Engineering	3		CORE	3
	CE 420 Transportation Engineering	3		CORE	3
	ENST 201 Environmental Science I	3		CORE	3
	ENST 201L Environmental Science I Lab	1			
	CORE	3			
		17			**15**
	5th Year - Fall			**5th Year – Spring**	
	Engineering Co-Op			CE 440 Structural Design and Analysis II	3
				CE 440L Structural Design and Analysis II	1
				CE 480 Senior CE Seminar	2
				CORE	3
				CORE	3
				CORE	3
					15

Total Credits Required for Graduation = 143.5

* Students are encouraged to take a summer course to relieve the credit load during this semester

CIVIL ENGINEERING

SUGGESTED SEQUENCE – 4 YEAR PROGRAM – FOR 3+2 PHYSICS STUDENTS TRANSITIONING IN 3RD YEAR

- 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.
    - CORE 098, CORE 099, and/or CORE 110L, if required, will fulfill general elective credits.
    - 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.

	1st Year - Fall	cr.		**1st Year - Spring**	cr.
	CHEM 113 Gen. Chem. I	3		CHEM 114 Gen. Chem. II	3
	CHEM 113L Gen. Chem. I Lab	1		CHEM 114L Gen. Chem. II Lab	1
	PHYS 113 Physics for Scientists & Engineers I	3		PHYS 114 Physics for Scientists & Engineers II	3
	PHYS 113L Physics for Scientists & Eng I Lab	1		PHYS 114L Physics for Scientists & Eng II Lab	1
	MATH 129 Calculus I	4		MATH 130 Calculus II	4
	ENGR 100 Introduction to Engineering	1		ENGR 150 Engineering Seminar	2
	CORE	3		CORE	3
	CORE 090 First Year Exp.	1			
		17			**17**
	2nd Year - Fall			**2nd Year – Spring**	
	PHYS 231 Modern Physics	3		ENGR 250 System Design & Analysis	3
	PHYS 231L Modern Physics Lab	1		ENGR 250L System Design & Analysis Lab	1
	MATH 231 Calculus III	4		PHYS 330 Classical Mechanics	3
	MATH 237 Applied Linear Algebra	3		PHYS 241 Statics	3
	CS 1xx Computer Programming for Engineers	2		MATH 238 Differential Equations	3
	CS 1xxL Computer Prog for Engineers Lab	1		CORE	3
	CORE	3			
		17			**16**
	3rd Year - Summer				
	ENGR 330 Project Mgmt & Eng Econ	3		ENGR 350 Engineering Materials	3
	CORE	3		ENGR 350L Engineering Materials Lab	0.5
	CORE	3			
					12.5
	3rd Year – Fall			**3rd Year – Spring**	
	CE 200 Intro to Civil Engineering	3		CE 320 Civil Engineering Materials	3
	CE 200L Civil Engineering Lab	.5		CE 320L Civil Eng Materials Lab	1
	ENGR 320 Fluid Mechanics	3		CE 340 Hydraulics and Hydrology	3
	ENGR 320L Fluid Mechanics Lab	.5		CE 340L Hydraulics and Hydrology Lab	1
	CE 300 Dynamics and Modeling	3		ENGR 360 Probability & Engineering Statistics	3
	ENST 201 Environmental Science I	3		PHYS 242 Mechanics of Solids	3
	ENST 201L Environmental Science I Lab	1		CORE	3
	CORE	3			
		17			**17**
	4th Year - Summer				
	Summer Co-Op				
	4th Year - Fall			**4th Year – Spring**	
	CE 400 Structural Design and Analysis I	3		CE 440 Structural Design and Analysis II	3
	CE 400L Structural Design and Analysis I Lab	1		CE 440L Structural Design and Analysis II	1
	CE 360 Geotechnical Engineering	3		CE 430 Environmental Engineering	3
	CE 420 Transportation Engineering	3		CE 480 Senior CE Seminar	2
	CORE	3		CORE	3
	CORE	3		CORE	3
	CORE	3		CORE	3
		19*			**18***

Total Credits Required for Graduation = 150.5

* Students are encouraged to take a summer course to relieve the credit load during this semester

PHYSICS - CIVIL ENGINEERING

SUGGESTED SEQUENCE – 5 YEAR PROGRAM – FOR 3+2 PHYSICS STUDENTS TRANSITIONING IN 4TH YEAR

- 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.
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- 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:
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    - CORE 115 (or 116) should be taken within the first two years.
    - CORE 098, CORE 099, and/or CORE 110L, if required, will fulfill general elective credits.
    - 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.

	1st Year - Fall	cr.		**1st Year - Spring**	cr.
	CHEM 113 Gen. Chem. I	3		CHEM 114 Gen. Chem. II	3
	CHEM 113L Gen. Chem. I Lab	1		CHEM 114L Gen. Chem. II Lab	1
	PHYS 113 Physics for Scientists & Engineers I	3		PHYS 114 Physics for Scientists & Engineers II	3
	PHYS 113L Physics for Scientists & Eng I Lab	1		PHYS 114L Physics for Scientists & Eng II Lab	1
	MATH 129 Calculus I	4		MATH 130 Calculus II	4
	ENGR 100 Introduction to Engineering	1		ENGR 150 Engineering Seminar	2
	CORE	3		CORE	3
	CORE 090 First Year Exp.	1			
		17			**17**
	2nd Year - Fall			**2nd Year – Spring**	
	PHYS 231 Modern Physics	3		ENGR 250 System Design & Analysis	3
	PHYS 231L Modern Physics Lab	1		ENGR 250L System Design & Analysis Lab	1
	MATH 231 Calculus III	4		PHYS 330 Classical Mechanics	3
	MATH 237 Applied Linear Algebra	3		PHYS 241 Statics	3
	CS 1xx Computer Programming for Engineers	2		MATH 238 Differential Equations	3
	CS 1xxL Computer Prog for Engineers Lab	1		CORE	3
	CORE	3			
		17			**16**
	3rd Year - Fall			**3rd Year - Spring**	
	PHYS 371 Electricity & Magnetism I	3		PHYS 440 Quantum Mech.	3
	PHYS 350 Thermo/Stat. Mech.	3		PHYS 242 Mechanics of Solids	3
	MATH 361 Probability & Statistics[1]	3		PHYS 490 Senior Seminar	2
	or CORE	-		CORE	3
	ENST 201 Environmental Science I	3		CORE	3
	ENST 201L Environmental Science I Lab	1		CORE	3
	CORE	3			
		16			**17**
	4th Year – Fall			**4th Year – Spring**	
	CE 200 Intro to Civil Engineering	3		ENGR 330 Project Mgmt & Eng Econ	3
	CE 200L Civil Engineering Lab	.5		CE 320 Civil Engineering Materials	3
	ENGR 320 Fluid Mechanics	3		CE 320L Civil Eng Materials Lab	1
	ENGR 320L Fluid Mechanics Lab	.5		CE 340 Hydraulics and Hydrology	3
	ENGR 350 Engineering Materials	3		CE 340L Hydraulics and Hydrology Lab	1
	ENGR 350L Engineering Materials Lab	0.5		ENGR 360 Probability & Eng Statistics[1]	3
	CE 300 Dynamics and Modeling	3		or CORE	-
				CORE	3
		13.5			**17**
	5th Year - Fall			**5th Year – Spring**	
	CE 400 Structural Design and Analysis I	3		CE 440 Structural Design and Analysis II	3
	CE 400L Structural Design and Analysis I Lab	1		CE 440L Structural Design and Analysis II	1
	CE 360 Geotechnical Engineering	3		CE 430 Environmental Engineering	3
	CE 420 Transportation Engineering	3		CE 480 Senior CE Seminar	2
	CORE	3		CORE	3
	CORE	3		CORE	3
		16			**15**

Total Credits Required for Graduation = 161.5

[1] ENGR 360 may be replaced by MATH 361 Probability & Statistics