

Bachelor of Science in Civil Engineering

Student Planning Guide: Starting 2020-21

	Fall	Winter	Spring
FIRST YEAR	MATH 11 Calculus I	MATH 12 Calculus II	MATH 13 Calculus III
	CHEM 11/11L (5)	PHYS 31/31L Physics for Engineers I (5)	PHYS 32/32L Physics for Engineers II (5)
	ENGR 1 and/or 1L Intro to Eng. (1 unit)*	ENGR 1 and/or 1L Intro to Eng. (1 unit)*	ENGR 1 and/or 1L Intro to Eng. (1 unit)*
	Critical Thinking and Writing I	Critical Thinking and Writing II	CENG 10/10L Surveying (3/1)
	CENG 7/7L Graphical Comm (3/1)	Cultures and Ideas I	Cultures and Ideas II
SOPHOMORE	Fall	Winter	Spring
	MATH 14 Calculus IV	AMTH 106 Differential Equations	CENG 44B Strength of Matls II (2)
	PHYS 33/33L Physics for Engineers III (5)	CENG 20/20L Geology (3/1)	CENG 115/115L Materials (4/1) OR CENG 143/143L Environ Engr (3/1)**
	CENG 15 Comp. Appl. in CE (3)	CENG 44A/44AL Strength of Matls (3/1)	CENG 132 Structural Analysis
	CENG 41 Statics	ENGL 181 Eng. Comm.	ELEN 49 Fundamentals of Elec CE
JUNIOR	Fall	Winter	Spring
	CENG 121A/121AL Geotech Engr (3/1)	AMTH 112 Risk in Civil Engr	CENG 128 Engr. Econ & Business (3)
	CENG 145 Transport Engr Des	CENG 121B Geotech Engr II (2)	CENG 140/140L Water Resources (4/1)
	CENG 148/148L Structural Syst (4/1)	CENG 125/125L Municipal Engr (3/1)	CENG 115/115L Materials (4/1) OR CENG 143/143L Environ Engr (3/1)**
	University Core	CENG 141/141L Fluids/Hydraulics (4/1)	CENG 192A Civil Engr Prof Practice (2)
	CENG Tech Elective	CENG Tech Elective	
SENIOR	Fall	Winter	Spring
	CENG 192B Civil Engr Prof Practice (2)	CENG 193 Civil Engr Project Design	CENG 194 Civil Design Commun. (1)
	CENG 192C Civil Engr Prof Devel (1)	Free Elective	CENG Tech Elective
	CENG Tech Elective	CENG Tech Elective	University Core
	University Core	University Core	University Core
	University Core		

Humanities & Social Science	Math & Science	Major	Technical Electives
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*ENGR 1 and 1L may be taken in any order and in any quarter in the first year. ENGR 1L is recommended Winter quarter to limit lab classes to two per quarter. If taken in later years, ENGR 110 is substituted for ENGR 1/1L.

**CENG 115/115L and 143/143L are both required but may be taken either 2nd or 3rd year per student's preferred area of emphasis.

Civil, Environmental, and Sustainable Engineering Technical Electives

Courses sharing a box are typically offered in alternating years

Fall	Winter	Spring	
118 (A) Constr Engr	119 (D) Des Sustain Constr	124 (A) Water Law Policy	Structures
134 (D) Str Steel Des I	122 (A) Air Pollution 123 (A) Pollut Fate Transp	133 (D) Wood Des	Water & Environ.
139 (A) Groundwater Hydr 161 (A) Sustain Water Res	135 (D) Reinf Concr Des	136 (D) Adv Concrete Str	Transp.
144 (D) Water Waste Trtmt	137 (D) Earthquake Engr	138 (D) Geotech Engr Des	Construct.
149 (A) Civil Systems Engr	146 (D) Des. Steel Frame	142 (D) Water Res Des 162 (A) Comput Water Res	Geotech.
186 (A) Constr Plan Control 187 (A) Constr Oper Equip	160 (A) GIS Water Res	150 (D) Traffic Engr Des	DIMA
	184 (A) Construct Mgmt	151 (A) Spec Topics Transp	
		182 (A) Build Info Model	

Five required technical electives must include: One digital information management and analysis (DIMA); Two design (D); One analysis (A); One either design (D) or analysis (A). **Not all electives are offered every year.** CENG 146 and 133 also may be offered in alternate years.

CORE Curriculum Requirements for CENG Majors

There are normally ten required humanities courses in the CORE Curriculum that all SCU students must complete. Engineering students can complete one course that satisfies two of these requirements ("double-dip") as long as the course has been approved (visit <https://www.scu.edu/apps/courseavail> and click "advanced") for both CORE categories.

Ten Required CORE Humanities Courses				
Critical Thinking and Writing I and II	Cultures and Ideas I, II, and III	Religion, Theology, and Culture	Ethics	Diversity
CTW-1 and CTW-2	C&I-I, II, and III	RTC-I, II, and III	Various	Various

Students also must complete coursework that satisfies five additional learning outcomes listed below.

Pre-approved Course Options for Specific, Supplemental Required CORE Curriculum Learning Outcomes				
Science, Technology And Society	Civic Engagement	Social Science	Arts	Experiential Learning
ENGL 181 & CENG 193	ENGR 1 & CENG 193	Various	ENGL 181 & CENG 193	Various

Engineering students complete an approved three-course (**12-unit**) Pathway or cluster of thematically linked courses as part of the SCU Core. Students must declare their Pathway by the end of their sophomore year. At least one Pathway course (minimum of four units) must be from outside their major department and any non-major Pathway course(s) should, where possible, satisfy other (base) CORE Curriculum requirements.

	Pre-approved Pathway Course Options/Recommendations for Civil Engineering Students			
	Digital Age	Sustainability	Values in Science & Technology	Design Thinking
Course #1	8 units from CENG 7, 15, 160, 182	8 units from CENG 20, 115, 119, 140, 143, 144, 161	8 units from CENG 115, 119, 140, 143, 144, 161	8 units from CENG 119, 128, 148, 192A, 193
Course #2				
Course #3 ^a	PHIL 22 or ENGR 19	PHIL 29 or RSOC 64	PHIL 29 or CHEM 11	PHIL 22 or ENGR 19

^a **Departments occasionally change course numbers. Students should verify course numbers.**

As part of the documentation (portfolio) requirements for the CORE Curriculum, students must submit a composite reflection paper based on the pathway coursework during their senior year.