Santa Clara University

Department of Civil, Environmental and Sustainable Engineering (CENG)
Typical Program of Studies for CENG Students
Entering SCU as Freshmen During the 2018-19 Academic Year

	FALL	WINTER	SPRING
First Year	MATH 11 - CALC I CHEM 11 L&L - CHEM I (5) CRIT THINK WRITING (CTW) I - ENGL 1A CENG 7/7L - GRAPH COMM (3/1) ENGR 1/1L - INTRO ENGR (1/1)	MATH 12 - CALC II PHYS 31 L&L - PHYSICS I (5) CRIT THINK WRITING (CTW) II - ENGL 2A CULTURES & IDEAS (C&I) I	MATH 13 - CALC III PHYS 32 L&L - PHYSICS II (5) CULTURES & IDEAS (C&I) II CENG 10/10L - SURVEYING (3/1)
Soph	MATH 14 - CALC IV PHYS 33 L&L - PHYSICS III (5) CENG 15/15L - COMP APL CENG (2/1) CENG 41 - STATICS	AMTH 106 - DIFF EQNS CENG 20/20L - GEOLOGY (3/1) CENG 44A/44AL - STR MATLS I (3/1) ENGL 181 - ENGR COMM	CENG 44B - STR MATLS II (2) CENG 115/115L - MATERIALS (4/1) CENG 132 - STRUCT ANAL ELEN 49 - POWER SYS
Junior	CENG 121A/211AL - GEOTECH ENGR I (3/1) CENG 145 - TRANS ENGR DES CENG 148/148L - STRUCT SYS (4/1) UNIV CORE REQUIREMENT	AMTH 112 - RISK IN CIV ENGR CENG 121B - GEOTECH ENGR II (2) CENG 125/125L - MUNICIPAL ENG (3/1) CENG 141/141L - FLUIDS/HYDR (4/1) CENG TECH ELECTIVE	CENG 128 - ENGR ECON & BUS (3) CENG 140/140L - WATER RES (4/1) CENG 143/143L - ENVIRON ENG (3/1) CENG 192A CENG PROJ DEV (2) CENG TECH ELECTIVE
Senior	CENG 192B - CENG PRACTICE(2) CENG 192C - CENG PROF DEV (1) CENG TECH ELECTIVE UNIV CORE REQUIREMENT UNIV CORE REQUIREMENT	CENG 193 - CENG PROJECT DES FREE ELECTIVE CENG TECH ELECTIVE UNIV CORE REQUIREMENT	CENG 194 - CENG DES COMM (1) CENG TECH ELECTIVE UNIV CORE REQUIREMENT UNIV CORE REQUIREMENT

Each course listed in the above table is 4 units unless a different number is shown in parentheses. Each lab is 1 unit. Where available, labs must be taken together with the associated lecture course – exception: ENGR 1 and ENGR 1L may be taken in different quarters.

University CORE requirements for engineering students are detailed in the University Bulleting and the CORE Curriculum Handbook. This sample program assumes that all CORE Curriculum requirements will be satisfied by ten required humanities courses in combination with other required program/major course work. Engineering students are expected to use a limited number of selectively chosen courses to satisfy multiple CORE Curriculum requirements to complete all degree program requirements in four years.

Five CENG technical electives are required. One CENG technical elective must be a digital information management and analysis (DIMA) course. Either CENG 160 – GIS (3) or CENG 182 – BIM (3) satisfy the DIMA requirement – whichever of CENG 160 or CENG 182 is not taken as the DIMA course may be taken to satisfy one of the four remaining technical electives. The remaining four CENG technical electives must include a minimum of two design-focused technical electives (Category I) and one analysis-focused technical elective (Category II). Student should work with their academic advisor to select the electives that address their professional goals and help prepare them for their senior capstone design project.

CATEGORY I: CENG DESIGN-FOCUSED TECHNICAL ELECTIVES:

CENG 119 - DES SUSTAIN CONSTRUCT
CENG 133 - WOOD DES
CENG 134 - STEEL DES
CENG 135 - CONCRETE DES
CENG 136 - ADVANCED CONCRETE DES
CENG 137 - EARTHQUAKE ENGR DES
CENG 138 - GEOTECHNICAL ENGR DES
CENG 142 - WATER RESOURCES DES
CENG 144 - ENVIRON SYSTEMS DES
CENG 146 - COLD FORMED STEEL DES
CENG 150 - TRAFFIC ENGR DES

CATEGTORY II: CENG ANALYSIS-FOCUSED TECHNICAL ELECTIVES:

CENG 118 - CONSTRUCTION ENG (3)
CENG 123 - ENVIRON REACTION ENG
CENG 139 - GROUNDWATER HYDROL (3)
CENG 149 - CIVIL SYSTEMS ENGR
CENG 151 - SPEC TOPICS TRANS ENG
CENG 160 - GIS IN WATER RESOURCES (3)
CENG 161 - SUSTANABLE WATER RES
CENG 162 - COMP WATER RESOURCES (3)
CENG 184 - CONSTRUCTION ADMIN (3)
CENG 186 - CONSTRUCTION PLANNING
CENG 187 - CONSTRUCTION OPERATIONS
CENG 182 - INTRO TO BIM (3)

University CORE Curriculum requirements for engineering students are detailed in the University Bulletin and the CORE Curriculum Guide. The University implemented a new Core Curriculum in the fall of 2009. This Core Curriculum requires that all engineering students complete (a) a set of courses that satisfy designated topic area requirements, (b) a three-course approved Pathway cluster, and (c) coursework that also satisfies five additional learning outcomes. Engineering students can use select courses to satisfy multiple CORE requirements.