

**SAN JOSÉ STATE UNIVERSITY
DEPARTMENT OF CIVIL & ENVIRONMENTAL
ENGINEERING**

**Bachelor of Science for CEE Students Enrolled in Spring 07 or
Later**

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A Bachelor of Science degree in Civil Engineering requires 120 semester units. The curriculum covers fundamental theory and practice in pertinent technical areas. The course work focuses on analytical and design aspects and also includes legal, business, and in construction management topics. A senior elective sequence of four courses permits a limited amount of specialization in one of these areas:

- Construction Engineering
- Environmental Engineering
- Geotechnical Engineering
- Structural Engineering
- Transportation Engineering
- Water Resources Engineering

The requirements for the B.S.C.E degree are as follows:

ADVISING

All students must see their advisor each semester before registering for classes and then their advisor will release their registration hold. Students are assigned to an advisor upon their acceptance to the department.

GENERAL EDUCATION

Each student's general education curriculum is developed individually with the help of an advisor. See information on "General Requirements"

MATHEMATICS

Three semesters of calculus (Math 30, 31, 32; 10 Units)
Differential equations (Math 133A; 3 Units)

SCIENCE

Chemistry (Chem 1A; 5 Units)
Two semesters of Physics (Physics 50, 51; 8 Units)
A Science Elective (Geology 002)

ENGINEERING SUPPORT COURSES

Introduction to Engineering (Engr 10)
Statics (CE 95)
Mechanics of Materials (CE 112)
Dynamics (ME 101)
Fluid Mechanics (ME 111)

REQUIRED MAJOR COURSES

Plane Surveying (CE 8)
Engineering Graphics CAD and Programming (CE 020)
Construction Materials Lab (CE 120)
Transportation Engineering (CE 121)
Civil Engineering Economic Analysis (CE 130)
Introduction to Construction Engineering (CE 131)
Geotechnical Engineering (CE 140)
Hydrology and Hydraulics (CE 150)
Structural Analysis (CE 160)
Structural Concrete Design (CE 162)
Principles of Environmental Engineering (CE 170)
Civil Engineering Systems (CE 181)
Numerical Solutions to Civil Engineering Problems (CE 190)
Probabilistic Models for Civil Engineering Decisions (CE 192)

ELECTIVES (Choose four courses from the list below in consultation with an advisor)

Traffic Engineering (CE 122)
Street and Highway Design (CE 123)
Construction Methods and Equipment (CE 132)
Project Management for Construction (CE 134)
Transport in Porous Media (CE 144)
Foundation Engineering (CE 145)
Engineering Hydrology (CE 152)
Hydraulic Design (CE 154)
Design of Steel Structures (CE 163)
Design of Wood Structures (CE 164)
Earthquake Resistant Design (CE 165)
Solid Waste Management Engineering (CE 172)
Design of Water Distribution and Wastewater Collection Systems (CE 174)

BACHELOR OF SCIENCE IN CIVIL ENGINEERING

(For all CE students starting the major in Spring 2005 and later)

1	2	3	4
Math 30 + 3	Math 31 4	Math 32 3	Math 133A 3
Engl 1A 3	Physics 50 ++ 4	Physics 51 ++ 4	Am. Stu. 1B* 6
Oral Comm 3	Engl 1B 3	Am. Stu. 1A* 6	Geol 2 3
Engr 10 3	Chem 1A 5	CE 20 3	CE 95 3
CE 8 3			Take WST 0
Total Units: 15	16	16	15
5	6	7	8
ME 101 3	CE 121 3	CE 120 1	CE 162 3
ME 111 3	CE 140 3	CE 131 3	CE 181 3
CE 112 3	CE 150 3	CE 170 3	CE Elective 3
Engr 100W** 3	CE 160 3	CE 190 2	CE Elective 3
CE 130 2	CE 192 2	CE Elective 3	SJSU Studies 3
		SJSU Studies 3 (Area S)**	(Area V)**
Total Units: 14	14	15	15

+ Math 30P can replace Math 30

++ Physics 70 and 71 can replace Physics 50 and 51

*American Studies 1A and 1B can also be met by taking 12-units from GE Areas C1, C2, D1, D2, D3 and US Institution (See Engineering Student Success Center)

** 9 units of upper division GE must be taken from College of Engineering approved list of GE courses (Engr 100W & Area S & V). Consult with the Engineering Student Success Center.

TECHNICAL ELECTIVES

<u>Structures</u>	Total	Category ²	<u>Geotechnical</u>	Total	Category ²
CE 163 Design of Steel Structures	3	Design	CE 144 Transport in Porous Media	3	
CE 164 Design of Wood Structures	3	Design	CE 145 Foundation Engineering	3	Design
CE 165 Seismic Resist Design	3				
			<u>Hydraulics and Hydrology</u>		
			CE 152 Engineering Hydrology	3	
			CE 154 Hydraulic Design	3	Design
			<u>Transportation</u>		
			CE 122 Traffic Engineering	3	
			CE 123 Street & Highway Design	3	Design
<u>Construction</u>					
CE 132 Constr. Methods & Equipment	3				
CE 134 Project Mgmt. for Constr.	3				
<u>Environmental</u>					
CE 172 Solid Waste Mgt. Engr.	3				
CE 174 Design of Water Dist	3				

NOTES: 1. All students **must** see an advisor **every** semester in order to be eligible to register for classes.

2. **All students must take at least two electives that have design component. (Effective Fall 2005).**

<u>COURSE</u>	<u>PREREQUISITE</u>
Math 30	Satisfaction of ELM requirement; Satisfactory score on the Calculus Placement Exam, or Math 019 (with a grade of “B” or better to waive the placement exam) or 3 or higher AP Calc AB exam, or 3 higher AP Calc BC exam. Corequisites: Math 30W <i>(NOTE: For students who pass this course with a grade of “C” or better (“C-“ not accepted), course will be allowed to fulfill Area B4. Must earn C- or better to take Math 31.)</i>
Math 30P	Satisfaction of ELM requirement; Satisfactory score on the Calculus Placement Exam, or Math 019 (with a “C” or better) or 3 or higher on AP Calc AB or 3 or higher AP Calc BC. Corequisites: Math 30W <i>(NOTE: For student who pass this course with a grade of “C” or better (“C-“ not accepted), course will be allowed to fulfill Area B4. Must earn C- or better to take Math 31)</i>
Math 31	Math Remediation Completed, or post baccalaureate, or Open University; Satisfactory score on the Calculus Placement Exam or Math 30 or Math 30P (with a grade of “C-“ or better) Corequisites: Math 31W <i>(NOTE: For students who pass this course with a grade of “C” or better (“C-“ not accepted), course will be allowed to fulfill Area B4. Must earn C- or better to take Math 32, Must earn C or better to take Physics 51.</i>
Math 32	Math Remediation Completed or a post baccalaureate or graduate. Math 31 (with a grade of “C-“ or better). <i>(NOTE: For students who pass this course with a grade of “C” or better. (“C-“ not accepted), course will be allowed to fulfill Area B4. Must earn C- or better to take Math 133A)</i>
Math 133A	Math 32 (grade of “C-“ or better) or instructor consent
Chem 1A	Proficiency in high school chemistry or Chem 10 (with a grade “C” or better, “C-“ not accepted) or instructor consent; proficiency in high school algebra and eligibility for Math 19; eligibility for Engl 01A
Geology 002	None
Phys 50 (or Phys 70)	Math and English Remediation Completed or post baccalaureate. 3 or better on AP Calc test or ‘C’ or better in Math 30 or Math 30P. Must Earn “C” or better to take Physics 51.
Phys 51 (or Phys 71)	Phys 50, Math 31, both with grades of “C“ or better
Engr 10	High school algebra, trigonometry and geometry
Engr 100W	Engl 1B, Completion of core GE, satisfaction of Writing Skills Test (WST) and upper division standing
CE 8	Math 19 or (eligibility for Math 30 or 30P)
CE 20	Math 19 or (eligibility for Math 30 or 30P)
CE 95	Phys 50 (or Phys 70), Math 31
CE 99	Phys 50 (or Phys 70), Math 31
CE 112	CE 95 (or CE 99), Math 133A
CE 112	CE 112
CE 121	CE 8, CE 20, Math 32, Phys 50 (or Phys 70)
CE 122	Math 32 or graduate standing
CE 123	CE 121 or graduate standing
CE 130	Math 32
CE 131	CE 130
CE 132	CE 130, CE 140 or graduate standing
CE 134	CE 131 or graduate standing
CE 140	CE 20, CE 112, ME 111, ENGR 100W
CE 144	CE 140, CE 150 or equivalent
CE 145	CE 140 or equivalent
CE 150	CE 20, ME 111, ENGR 100W
CE 152	CE 150 or graduate standing
CE 154	CE 150 or graduate standing
CE 160	CE 20, CE 112, ME 101
CE 162	CE 160 or graduate standing
CE 163	CE 160 or graduate standing
CE 164	CE 160 or graduate standing
CE 165	CE 160 or graduate standing
CE 170	CE 20, ME 111, Chem 1A, ENGR 100W
CE 172	CE 170 or graduate standing
CE 174	CE 150 and CE 170
CE 181	CE 121, CE 130, CE 131, CE 140, CE 150, CE 160, CE 170, CE 192

Note: Always refer to the SJSU Catalog.

CE 190
CE 192

Math 133A, ENGR 10
Math 32

ME 101
ME 111

CE 95 (or CE 99) , Math 32. Grade of "C-" or better
Math 32, CE 95 (or CE 99), Grade of "C-" or better