# Civil Engineering Planning Worksheet

**Admitted to Engineering Fall 2026 Onwards**

## Required Courses

- 15 units of required mathematics, 12 units of physics, and 3 units of chemistry.
- 18 units of required lower division engineering courses and 31 units of required upper division courses
- 15 units of engineering elective courses, and 36 units of General Education courses
- All SF State studies requirement need to be completed within the 36 units. If not, additional units of GE may be required to satisfy this requirement
- Course prerequisites are strictly enforced. Students not meeting the prerequisites are subject to being administratively dropped.

## Required Math and Science Lower Division Courses (minimum 30 units)

| Course Number | Course Name | Units | Grade | SFSU or Transfer | Term | Yr | Prerequisite |
|---|---|---|---|---|---|---|---|
| CHEM 180 | Chemistry for the Energy and the Environment | 3 | | | | | Category I or II QR/Math placement; or Category III or IV QR/Math placement; MATH 197© or GE Area 2/B4♥. HS Chemistry is recommended. |
| MATH 226 | Calculus I | 4 | | | | | One of the following: MATH 198© or 199© or HS pre-calculus with B or better; or HS calculus © |
| MATH 227 | Calculus II | 4 | | | | | MATH 226© |
| MATH 228 | Calculus III | 4 | | | | | MATH 227© |
| MATH 245 | Elementary Differential Equations & Linear Algebra | 3 | | | | | MATH 227© |
| PHYS 220/222 | General Physics with Calculus I & Lab | 4 | | | | | MATH 226©; PHYS 222♥; (MATH 227♥ recommended) |
| PHYS 230/232 | General Physics with Calculus II & Lab | 4 | | | | | PHYS 220© and MATH 227©; PHYS 232♥ (MATH228♥ recommended) |
| PHYS 240/242 | General Physics with Calculus III & Lab | 4 | | | | | PHYS 220© & MATH 227© & PHYS 242♥ (MATH 228♥ recommended) |

## Required Lower Division Courses for Civil Engineering (19 units)

| ENGR | Course Name | Units | Grade | SFSU or Transfer | Term | Yr | Prerequisite |
|---|---|---|---|---|---|---|---|
| 100 | Introduction to Engineering | 3 | | | | | High school algebra and trigonometry |
| 101 | Engineering Graphics | 1 | | | | | ENGR 100♥ |
| 102 | Statics | 3 | | | | | MATH 227© & PHYS 220© |
| 200 | Materials of Engineering | 3 | | | | | CHEM 180©- or CHEM 115©- |
| 201 | Dynamics | 3 | | | | | ENGR 102©- |
| 235 | Surveying | 3 | | | | | ENGR 100©- & MATH 226© |
| 282 | Probability & Statistics for Engineers | 3 | | | | | MATH 226© |

## Required Upper Division Courses for Civil Engineering (29 units)

| ENGR | Course Name | Units | Grade | SFSU or Transfer | Term | Yr | Prerequisite |
|---|---|---|---|---|---|---|---|
| 300 | Engineering Experimentation | 1 | | | | | ENGR 200©- & ENGR 282©- & PHYS 230©- |
| 302 | Experimental Analysis | 1 | | | | | ENGR 300©- & ENGR 304♥ & ENGR 309©- |
| 304 | Mechanics of Fluids | 3 | | | | | ENGR 201©- & PHYS 240©- |
| 309 | Mechanics of Solids | 3 | | | | | ENGR 102©- & ENGR 200©- |
| 323 | Structural Analysis | 3 | | | | | ENGR 309 |
| 425 | Reinforced Concrete Structures | 3 | | | | | ENGR 323♥ |
| 429 | Construction Management | 3 | | | | | ENGR 235©- |
| 430 | Soil Mechanics | 3 | | | | | ENGR 309 |
| 434 | Prin. of Environmental Engr. | 3 | | | | | ENGR 304♥ & CHEM 180 or CHEM 115 |
| 436 | Transportation Engineering | 3 | | | | | ENGR 235©- |

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|---|---|---|---|---|---|---|---|
| 696 | Engineering Design Project I | 1 | | | | | 15 upper-division ENGR units; ENGR 300; ENGR 323 |
| 697 | Engineering Design Project II | 2 | | | | | GE Area 1A/A2 & ENGR 696 |

♥ = Course must either be completed or taken concurrently

© = Course must have been passed with a grade of C or better

©- = Engineering Course must have been passed with a grade of C- or better

## Elective Courses

- 15 upper division engineering elective units are required.
- Upper division courses must have been taken within 10 years of graduation.
- The courses selected should conform to focus area (Construction management, Geotechnical, Structural, or Environmental Engineering) curriculum recommendations.

## Elective Upper Division Courses for Civil Engineering (minimum 15 units)

| ENGR | Course Name | Grade | SFSU or Transfer | Year Taken | Semester Offered | Prerequisites |
|---|---|---|---|---|---|---|
| 426 | Steel Structures | 3 | | | | ENGR 323♥ |
| 427 | Wood Structures | 3 | | | | ENGR 323♥ |
| 431 | Foundation Engineering | 3 | | | | ENGR 430 |
| 435 | Environmental Engineering Design | 3 | | | | CHEM 115 or CHEM 180 |
| 438 | Transportation Planning | 3 | | | | ENGR 271 & Math 245♥ |
| 439 | Construction Engineering | 3 | | | | ENGR 309 & ENGR 430♥ |
| 441 | Fundamentals of Composite Materials | 3 | | | | ENGR 309©- & Math 245©- |
| 461 | Mechanical and Structural Vibrations | 3 | | | | ENGR 201©-, ENGR 309©-, & MATH 245©- |
| 610 | Engineering Cost Analysis | 3 | | | | ENGR 282©- |
| 823 | Introduction to Seismology ♦ | 3 | | | | Graduate standing and consent of instructor |
| 826 | Seismic Hazards Analysis ♦ | 3 | | | | Graduate standing and consent of instructor |
| 827 | Structural Design for Fire Safety ♦ | 3 | | | | Graduate standing and consent of instructor |
| 828 | Seismic Isolation and Energy Dissipation♦ | 3 | | | | Graduate standing and consent of instructor |
| 829 | Advanced Topics in Structural Engineering ♦ | 3 | | | | Graduate standing and consent of instructor |
| 831 | Advanced Concrete Structures ♦ | 3 | | | | Graduate standing and consent of instructor |
| 832 | Advanced Topics in Seismic Engineering | 3 | | | | Graduate standing and consent of instructor |
| 833 | Principles of Earthquake Engineering ♦ | 3 | | | | Graduate standing and consent of instructor |
| 835 | Advanced Steel Structures ♦ | 3 | | | | Graduate standing and consent of instructor |
| 836 | Structural Design for Earthquakes ♦ | 3 | | | | Graduate standing and consent of instructor |
| 837 | Geotechnical Earthquake Engineering ♦ | 3 | | | | Graduate standing and consent of instructor |
| 838 | Smart Structures Technology | 3 | | | | Graduate standing and consent of instructor |
| 839 | Advance Topics in Civil Engineering | 3 | | | | Graduate standing and consent of instructor |
| | Units Completed | | | | | |
| | **Minimum Required** | **15** | | | | |

♦ = GPA of 3 or better and consent of instructor are required to take graduate courses (in addition to prerequisites listed)

♥ = Course must be completed or taken concurrently

It is intended to be used as a guideline for advising purposes. See SFSU Academic Bulletin for most recent major curriculum, course information & prerequisite