



## Required Courses

- 15 units of required mathematics, 12 units of physics, 3 units of chemistry, 3 units of computer programming
- 12 units of required lower division engineering courses and 42 units of required upper division courses,
- 9 units of elective courses, and 33 units of General Education courses (for Engineering Track)
- Course prerequisites are strictly enforced. Students not meeting the prerequisites are subject to being administratively dropped.
- All required lower division courses must be passed before upper division courses can be taken.

## Required Lower Division Math and Science Courses

Course Number	Course Name	Units	Grade	SFSU or Transfer	Term Yr	Prerequisite
CHEM 180	Chemistry for the Energy and the Environment	3				MATH 70© or Entry Level Math (ELM) exam with a score of 50 or better or an exemption, high school chemistry.
MATH 226	Calculus I	4				Successful completion of ELM requirement; MATH 199© or equivalent.
MATH 227	Calculus II	4				MATH 226©
MATH 228	Calculus III	4				MATH 227©
MATH 245	Elementary Differential Equations & Linear Algebra	3				MATH 228©
PHYS 220/222	General Physics with Calculus I & Lab	4				High school physics or equivalent; MATH 226©; PHYS 222♥; MATH 227♥
PHYS 230/232	General Physics with Calculus II & Lab	4				PHYS 220©, MATH 227©; PHYS 232♥
PHYS 240/242	General Physics with Calculus III & Lab	4				PHYS 220© MATH 227©; PHYS 242♥

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

## Required Lower Division Electrical Engineering Courses

ENGR	Course Name	Units	Grade	SFSU or Transfer	Term Yr	Prerequisite
100	Introduction to Engineering	1			F,S	High school algebra and trigonometry
2XX ♦	Mechanical Engineering Elective	3				See Bulletin for prerequisite requirement
205	Electric Circuits	3			F,S	PHYS 230; MATH 245♥
206	Circuits and Instrumentation	1			F,S	ENGR 205♥
213	Introduction to C Programming for Engineers	3			F,S	MATH 226©
271 or 294	MATLAB or MicroControllerModule	1			F,S	Engineering students in sophomore year or later

## Required Upper Division Electrical Engineering Courses

ENGR	Course Name	Units	Grade	SFSU or Transfer	Term Yr	Prerequisite
300	Engineering Experimentation	3			F,S	ENGR 205, 206; ENGLISH 214©
301	Microelectronics Laboratory	1			F,S	ENGR 300,353♥
305	Linear Systems Analysis	3			F,S	ENGR 205©; MATH 245
306	Electromechanical Systems	3			F,S	ENGR 205©
315	Linear System Analysis Laboratory	1			F	ENGR 305♥
350	Intro. Engineering Electromagnetics	3			S	MATH 245©; PHYS 240©
353	Microelectronics	3			F,S	ENGR 205©, 206©,
356	Digital Design	3			F,S	ENGR 205©
357	Digital Design Laboratory	1			F,S	ENGR 356♥
442	Op. Amplifier System Design	3			S	ENGR 305©
446	Control Systems Laboratory	1			F,S	ENGR 447♥
447	Control Systems	3			F,S	ENGR 305©
449	Communication Systems	3			F	ENGR 305©
451	Digital Signal Processing	4			F,S	ENGR 305©; ENGR 213© or 290© (Mathlab)
478	Design with Microprocessors	4			F,S	ENGR 356©; ENGR213© or CSC 210©
696	Engineering Design Project I	1			F,S	Complete 21 upper division engineering units, ENGR 301
697	Engineering Design Project II	2			F,S	ENGR 696

♦ = Any of ENGR 201, 203, 204, 303

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

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

♥ = Course may be taken concurrently



## Transferred Courses

Students wishing to transfer Math, Science and Engineering courses from other educational institutions should complete this form and see the Program Head of Electrical Engineering in their first term of residence at SFSU. If you haven't done your transfer credit evaluation with the Program Head, you may not be able to enroll in courses with prerequisites, so do it now!

- Students transferring lower division courses from other schools in California only need bring a copy of their transcripts (official or unofficial) and this form.
- Transfers of upper division courses and transfers from out-of-state institutions are evaluated on a case-by-case basis. Students wishing these transfers should bring a copy of the Advanced Standing Evaluation from SFSU, as well as all relevant supporting material, including course syllabi, books, notes, etc.

Students must complete at least 30 units of coursework at SFSU, including 24 units of upper division courses. Twelve units (upper or lower division) must be in the Electrical Engineering major. Nine units must be Segment III GE.

Name: \_\_\_\_\_ Student number: \_\_\_\_\_

Course Number	Course Name	Institution	Course	Units†	Term/Year	Grade	Approval
CHEM 115 or CHEM 180	General Chemistry I: Essential Concepts of Chemistry						
MATH 226	Calculus I						
MATH 227	Calculus II						
MATH 228	Calculus III						
MATH 245	Elementary Differential Equations & Linear Algebra						
CSC 210	Introduction to Computer Programming						
PHYS 220/222	General Physics with Calculus I & Lab						
PHYS 230/232	General Physics with Calculus II& Lab						
PHYS 240/242	General Physics with Calculus III& Lab						
ENGR 100	Introduction to Engineering						
ENGR 201	Dynamics						
ENGR 203	Materials of Electrical and Electronics Engineering						
ENGR 204	Mechanics						
ENGR 205	Electric Circuits						
ENGR 206	Circuits and Instrumentation						
ENGR 213	Introduction to C Programming for Engineers						
ENGR 271	MATLAB Programming						
ENGR 294	MicroController						

† Express as semester units. Each quarter unit = 2/3 semester units

Examined by: \_\_\_\_\_ Signed: \_\_\_\_\_ Date: \_\_\_\_\_  
 February 26, 2018