SAN FRANCISCO STATE UNIVERSITY
MECHANICAL ENGINEERING STUDENT PLANNING WORKSHEET

This worksheet centralizes information pertaining to your progress towards graduation, including contact information, course planning, and transfers. It is intended to be used as a guideline for advising purposes. See SFSU Academic Bulletin for most recent major curriculum, course information & prerequisites. You should keep an updated copy of this worksheet in your folder in the engineering office. Privacy note: *By law, all student information and grades are kept strictly confidential and are only accessed by authorized personnel of the School of Engineering.*

Student Information

Student ID #: | | | | | | | | | | | |

Name:_____
LAST FIRST MI

Main address to where official mail may be sent:

_____
STREET

_____
CITY

_____ _____
STATE ZIP

_____-_____ _____
PHONE E-MAIL

Term/Year entered SFSU: _____ Term/Year you expect to graduate: _____

Advising Attendance Information

Advisor Name	Approval Signature	Term	Year	Comments

Required Courses

*subject to change

- 15 units of required mathematics, 12 units of physics, and 3 units of chemistry,
- 16 units of required lower division engineering courses and 35 units of required upper division courses
- 3 units of modular electives, 9 units of engineering elective courses and 36 units of General Education courses
- Course prerequisites are strictly enforced. Students not meeting the prerequisites are subject to being administratively dropped.

Required Math and Science Lower Division 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 (see bulletin for full details)
MATH 226	Calculus I	4					MATH 198© or 199© or equivalent or etc, (see bulletin for full details)
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♥ (MATH 228♥ 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 Mechanical Engineering

ENGR	Course Name	Units	Grade	SFSU or Transfer	Term	Yr	Prerequisite
100	Introduction to Engineering	1			F,S		High school algebra and trigonometry
101	Engineering Graphics	1			F,S		ENGR 100♥
102	Statics	3			F,S		MATH 227 & PHYS 220
103	Introduction to Computers	1			F,S		MATH 226©
200	Materials of Engineering	3			F,S		CHEM 115 or CHEM 180
201	Dynamics	3			F,S		ENGR 102
205	Electric Circuits	3			F,S		PHYS 230 & MATH 245♥
206	Circuits and Instrumentation Lab	1			F,S		ENGR 205♥

Required Upper Division Courses for Mechanical Engineering

ENGR	Course Name	Units	Grade	SFSU or Transfer	Term	Yr	Prerequisite
300	Engineering Experimentation	3			F,S		ENGR 200©- or ENGR 206©- & ENGR 205©-
302	Experimental Analysis	1			F,S		ENGR 300 & ENGR 304♥ & ENGR 309
303+	Engineering Thermodynamics	3			F,S		PHYS 240
304+	Mechanics of Fluids	3			F,S		ENGR 201 & PHYS 240
305	Linear Systems Analysis	3			F,S		ENGR 205©- & MATH 245©-
309	Mechanics of Solids	3			F,S		ENGR 102 & ENGR 200♥
364	Material & Manufacturing processes	3			F,S		ENGR 201 & ENGR 309
4xx*	Controls	3					Refer to the Table for Elective Courses
4xx*	Controls Laboratory	1					Refer to the Table for Elective Courses
463	Thermal Power Systems	3			F,S		ENGR 467 & ENGR 302
464	Mechanical Design	3			F,S		ENGR 364
467	Heat Transfer	3			F,S		ENGR 303 & ENGR 304
696	Engineering Design Project I	1			F,S		Senior standing with 21 upper-division units in engineering & ENGR 300© or ENGR 301© (see SFSU Bulletin for GWAR information)
697	Engineering Design Project II	2			F,S		ENGR 696©

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

+ = It is recommended that ENGR 303 and ENGR 304 not be taken concurrently.

* = Either ENGR 410/411 (recommended for Thermal-Fluids focus area) or ENGR 447/446 (recommend for Machine Design/Robotics and Control focus area)

♥ = Course must either be completed or taken concurrently.

Elective Courses

- 9 units of the upper division engineering elective units are required.
- 3 units of modular electives are required. Select a total of 3 units below that are offered in one unit modules.

Modular Electives (Refer to School of Engineering website for offerings each semester)

ENGR	Course Name	Units	Grade	SFSU or transfer	Term	Year	Prerequisite
271	Intro to MATLAB	1					MATH 226©
272	Engineering Project Management	1					Engineering students in sophomore year or later.
291	Intro to Creo Parametric (ProE)	1					
292	Intro to SolidWorks	1					
294	MicroController	1					
295	Design Methodology	1					

Elective Upper Division Courses for Mechanical Engineering

ENGR	Course Name	Units Total	ES	ED	Grade	SFSU or Transfer	Year	Prerequisite
306	Electromechanical Systems	3	2	1			F,S	ENGR 205©-
410 ▪	Process Instrumentation and Control	3	2	1			S	ENGR 300 & ENGR 305
411 ▪	Instrument. and Process Control Lab.	1	0	1			S	ENGR 410♥
415	Mechatronics	3	2	1			S	ENGR 305
416	Mechatronics Laboratory	1	0	1			S	ENGR 415♥
428	Applied Stress Analysis	3	2	1			S	ENGR 302 & ENGR 309
432	Finite Element Methods	3	2	1			F	ENGR 309
441	Fundamentals of Composite Materials	3	1	2			S	ENGR 309 & Math 245
446 ▪	Control Systems Laboratory	1	0	1			F,S	ENGR 447♥
447 ▪	Automatic Control Systems	3	2	1			F,S	ENGR 305©-
461	Mech. And Structural Vibration	3	2	1			F	ENGR 201 & ENGR 309 & Math 245
465	Principles of HVAC	3	2	1			S	ENGR 303
466	Gas Dynamics and B.L. Flow	3	2	1			F	ENGR 303, 304
468	Applied Fluid Mech. and Hydraulics	3	2	1			S	ENGR 304
469	Renewable Energy Systems	3	2	1			F	ENGR 303
470	Biomechanics	3	2	1			F	ENGR 200
610	Engineering Cost Analysis	3	-	-			F,S	ENGR 103 OR ENGR 213♥ & Math 227♥
820	Energy Resources & Sustainability ♦	3	2	1				ENGR 303
830	Finite Element Methods ♦	3	2	1			F	MATH 245 & ENGR 309
863	Advanced Thermal Fluids ♦	3	2	1				ENGR 303 & ENGR 304
865	Energy-Efficient Buildings ♦	3	2	1				ENGR 467
867	Energy Auditing, Measurement, and Verification ♦	3	2	1				ENGR 205 & ENGR 467
868	Advanced Control Systems ♦	3	2	1			S	ENGR 447
869	Robotics and Haptics ♦	3	2	1				ENGR 201, 305, 447 (B or better)
	Units Completed							
	Minimum Required	**9**	n/a	n/a				

♦ = 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

▪ = Course can only be used as UD elective if not also being used for controls requirement (cannot be double-counted)

Program Planning

Fall 202__		Spring 202__		Fall 202__		Spring 202__	
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____

Fall 202__		Spring 202__		Fall 202__		Spring 202__	
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____

Transferred Courses

Students wishing to transfer Math, Science and Engineering courses from other institutions *must* see the Program Head of Mechanical Engineering in their first term of residence at SFSU. If you haven't yet done your transfer credit evaluation with the Program Head, you may not be able to enroll for courses, *so do it now*! Students transferring from California institutions just need to bring in their transcripts and this worksheet. Transfers of courses from other institutions are evaluated on a case-by-case basis. Students from these institutions should bring all relevant supporting material, including course syllabi, books, etc.

Name:_____ **Student ID #:**_____

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						
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 101	Engineering Graphics						
ENGR 102	Statics						
ENGR 103	Introduction to Computers						
ENGR 200	Materials of Engineering						
ENGR 201	Dynamics						
ENGR 205	Electric Circuits						
ENGR 206	Circuits and Instrumentation Lab						
ENGR 271	MATLAB						
ENGR 272	Engineering Project Management						
ENGR 291	Intro to Creo Parametric (ProE)						
ENGR 292	Intro to SolidWorks						
ENGR 294	MicroController						
ENGR 295	Design Methodology						

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

Examined by: _____ Signed: _____ Date: _____

*subject to change (see SFSU Bulletin for current information) July 30, 2019