Pre-Engineering, A.S.

Requirements

The pre-engineering program at UVU has been created for students who plan to complete the first two to three years of their engineering education at UVU and then transfer to a baccalaureate university to complete their engineering degree. With adequate planning, pre-engineering coursework completed at UVU will transfer to all of the Utah universities with baccalaureate engineering degrees. All students who declare pre-engineering as their major are automatically accepted into pre-engineering status. After completion of the pre-engineering program at UVU, the student applies for professional status at an institution of the student's choice.

Total Program Credits: 63

General Education Requirements:			39 Credits
	ENGL 1010	Introduction to Writing	3
	ENGL 2020	Intermediate Writing--Science and Technology	3
	MATH 1210	Calculus I	5
Complete one of the following:			3
	HIST 1700	American Civilization (3.0)	
	HIST 2700	US History to 1877 (3.0)	
and	HIST 2710	US History since 1877 (3.0)	
	HIST 1740	US Economic History (3.0)	
	POLS 1000	American Heritage (3.0)	
	POLS 1100	American National Government (3.0)	
Complete the following:			
	PHIL 2050	Ethics and Values	3
	HLTH 1100	Personal Health and Wellness (2.0)	
or	PES 1097	Fitness for Life	2
Distribution Courses:			
	CHEM 1210	Principles of Chemistry I	4
	PHYS 2210	Physics for Scientists and Engineers I	4
	Humanities		3
	Fine Arts		3
	Social/Behavioral Science		3
	Biology		3
Discipline Core Requirements:			24 Credits
	ENGR 1030	Engineering Programming	3
or	CS 1400	Fundamentals of Programming (3.0)	
	MATH 1220	Calculus II	5
Complete ONE of the following sets of courses:			16
General Engineering Focus:			
	PHYS 2215	Physics for Scientists and Engineers I Lab (1.0)	
	CHEM 1215	Principles of Chemistry I Laboratory (1.0)	
	ENGR 1000	Introduction to Engineering (3.0)	
	ENGR 2160	Introduction to Materials Science and Engineering (3.0)	
	CS 2810	Computer Organization and Architecture (3.0)	
or	CS 1410	Object-Oriented Programming (3.0)	
	Complete five credits of Pre-Engineering electives		
Mechanical/Civil Engineering Focus:			
	PHYS 2220	Physics for Scientists and Engineers II (4.0)	
	ENGR 2010	Engineering Statics (3.0)	
	ENGR 2030	Engineering Dynamics (3.0)	
	ENGR 2140	Mechanics of Materials (3.0)	
or	ENGR 2300	Engineering Thermodynamics (3.0)	
or	ENGR 2450	Computational Methods for Engineering Analysis (3.0)	
	Complete three credits of Pre-Engineering electives		
Electrical/Computer Engineering Focus:			
	PHYS 2220	Physics for Scientists and Engineers II (4.0)	
	ECE 2250	Circuit Theory (3.0)	
	ECE 2255	Circuit Theory Lab (1.0)	
	ECE 2700	Digital Design I (3.0)	
	ECE 2705	Digital Design I Lab (1.0)	
	Complete four credits of Pre-Engineering electives		
Chemical/Biological Engineering Focus:			
	PHYS 2220	Physics for Scientists and Engineers II (4.0)	
	CHEM 1220	Principles of Chemistry II (4.0)	
	CHEM 2310	Organic Chemistry I (4.0)	
	Complete five credits of Pre-Engineering electives		
Elective Requirements:			
Students should carefully select electives based on the engineering discipline they are interested in and the college or university they want to attend to finish their BS degree. See your advisor.			
Math and Science Electives:			
	MATH 1050	College Algebra (4.0)	
	MATH 1060	Trigonometry (3.0)	
	MATH 2210	Calculus III (3.0)	
	MATH 2250	Differential Equations and Linear Algebra (4.0)	
or	MATH 2270	Linear Algebra (3.0)	
and	MATH 2280	Ordinary Differential Equations (3.0)	
	PHYS 2215	Physics for Scientists and Engineers I Lab (1.0)	
	PHYS 2225	Physics for Scientists and Engineers II Lab (1.0)	
	CHEM 1010	Introduction to Chemistry (3.0)	
	CHEM 1215	Principles of Chemistry I Laboratory (1.0)	
General Engineering Electives:			
	ENGR 1000	Introduction to Engineering (3.0)	
	ENGR 1020	Survey of Engineering (1.0)	
	ENGR 1030	Engineering Programming (If not already taken) (3.0)	
	ENGR 2140	Mechanics of Materials (3.0)	
	ENGR 2160	Introduction to Materials Science and Engineering (3.0)	
	ENGR 2300	Engineering Thermodynamics (3.0)	
	ENGR 2450	Computational Methods for Engineering Analysis (3.0)	
Biological and Chemical Electives:			
	BIOL 1610	College Biology I (4.0)	

	BIOL 1620	College Biology II (3.0)	
	BIOL 1615	College Biology I Laboratory (1.0)	
	BIOL 1625	College Biology II Laboratory (1.0)	
	BIOL 3400	Cell Biology (3.0)	
	MICR 2060	Microbiology for Health Professions (3.0)	
	MICR 2065	Microbiology for Health Professions Laboratory (1.0)	
	CHEM 1220	Principles of Chemistry II (4.0)	
	CHEM 1225	Principles of Chemistry II Laboratory (1.0)	
	CHEM 2315	Organic Chemistry I Laboratory (1.0)	
	CHEM 2320	Organic Chemistry II (4.0)	
	CHEM 2325	Organic Chemistry II Laboratory (1.0)	
CAD Electives:			
	EGDT 1020	3D Architectural Modeling (3.0)	
	EGDT 1040	Computer Aided Drafting--AutoCAD (3.0)	
	EGDT 1071	3 Dimensional Modeling--Solidworks (3.0)	
	EGDT 1400	Surveying (3.0)	
	EGDT 1200	Mechanical Drafting (3.0)	
Computer and Electrical Electives:			
	CS 1400	Fundamentals of Programming (3.0)	
	CS 1410	Object-Oriented Programming (3.0)	
	CS 2300	Discrete Mathematical Structures I (3.0)	
	CS 2420	Introduction to Algorithms and Data Structures (3.0)	
	CS 2600	Computer Networks I (3.0)	
	CS 2810	Computer Organization and Architecture (3.0)	
	ECE 1020	Computer Engineering Problem Solving with MATLAB and LabVIEW (1.0)	
	ECE 2210	Fundamentals of Electric Circuit Analysis (3.0)	
	ECE 2250	Circuit Theory (3.0)	
	ECE 2255	Circuit Theory Lab (1.0)	
	ECE 3740	Digital Design II (3.0)	

Graduation Requirements:

1. Completion of a minimum of 63 semester credits.
2. Overall grade point average of 2.0 (C) or above. 2.5 or above in Math, Science, and Engineering courses.
3. Residency hours: minimum of 20 credit hours through course attendance at UVU.
4. Completion of GE and specified departmental requirements.

Pre-Engineering, A.S.
Graduation Plan

This graduation plan is a sample plan and is intended to be a guide. Your specific plan may differ based on your Math and English placement and/or transfer credits applied. You are encouraged to meet with an advisor and set up an individualized graduation plan in Wolverine Track.

Milestone courses (pre-requisites for a course in one of the subsequent semesters) are marked in red and italicized.

Semester 1	Course Title	Credit Hours
CS 1400 or ENGR 1030	Fundamentals of Programming or Engineering Programming	3
CHEM 1210	Principles of Chemistry I	4
Area Focus Elective		1
ENGL 1010	Intro to Writing CC	3
HH	Any approved Humanities	3
PES 1097 or HLTH 1100	Fitness for Life or Personal Health and Wellness	2
	Semester total:	16
Note: Pre-Engineering students must choose one area of focus - General Engineering, Mechanical/Civil Engineering, Electrical/Computer Engineering, or Chemical/Biological Engineering. Please meet with your advisor to select appropriate Area Focus courses.		
Semester 2	Course Title	Credit Hours
*MATH 1210**	Calculus I	5
Area Focus course		4
Area Focus Elective		1
ENGL 2020	Intermediate Writing Science and Technology	3
BB	Any approved Biology	3
	Semester total:	16
Note: Pre-requisites are required to be taken. Please see the advisor.		
Semester 3	Course Title	Credit Hours
PHYS 2210*	Physics for Scientist and Engineers I	4
Area Focus Elective		1
Area Focus course		4
PHIL 2050	Ethics and Values IH	3
FF	Any approved Fine Arts	3
	Semester total:	15
Note: *Pre-requisites are required to be taken. Please see the advisor.		
Semester 4	Course Title	Credit Hours
MATH 1220	Calculus II	5
Area Focus course		4
Area Focus Elective		1
Any American Institutions course		3
SS/BEH	Any approved Social/Behavioral Science	3
	Semester total:	16
	Degree total:	63