

Engineering (Bachelor of Science Engineering) Course Plan

Chemical/Pharmaceutical Concentration

TIER I – Math ACT of 21 or below/Math RSAT of 530 or below

Freshman Fall Semester			Freshman Spring Semester		
MATH 110	Fundamentals of Math	3	MATH 111	College Algebra	3
ENGR 100	Freshman Seminar*	1	CHEM 100	Preparatory Chemistry	3
BIOL 111	Basic Biology	4	HUM/FA	Elective	3
ENGL 101	Academic Writing	3	ENGL 102	Academic Writing & Literature	3
HIST 111/112	Western Civilization 1 or 2	3	ENGR 110	Introductory Engineering Applications*	3
			CUC 100	Connections	0.5
Semester Total:		14.0	Semester Total:		15.5

Summer Semester after Freshman Year					
MATH 115	Precalculus	3	MATH 122	Calculus I	4
CHEM 111	General Chemistry I	4	CHEM 113	General Chemistry II	4
Semester Total:					15.0

Sophomore Fall Semester			Sophomore Spring Semester		
CHPH 215	Mass and Energy Balances	3	MATH 223	Calculus II	4
ENGR 120	Foundations of Engineering Design I*	3	ENGR 121	Foundations of Engineering Design II*	3
ENGL 2xx	English Literature	3	ENGR 240	Engineering Materials & Processes*	4
CUC 200	Connections	0.5	ENGR 300	Engineering Economics	3
CHEM 227	Organic Chemistry I	4	CHRS 125	Introduction to Christianity	3
ECON 201	Microeconomics	3			
Semester Total:		16.5	Semester Total:		17.0

Summer Semester after Sophomore Year					
MATH 224	Calculus III	4	PHYS 251	Physics I	4
Semester Total:					8.0

Junior Fall Semester			Junior Spring Semester		
MATH 310	Differential Eq and Linear Algebra	4	ENGR 320	Fluids*	3
BIOL 280	Essentials of Microbiology and Biochemistry*	4	ENGR 220	Statics & Strength of Materials	3
ENGR 310	Thermodynamics*	3	CHPH 325	Heat Transport*	2
ENGR 260	Electrical Circuits*	4	CHPH 345	Bioprocess Engineering*	2
CHPH 315	Mass Transport	3	CHPH 350	Reaction Engineering*	3
Semester Total:		18.0	Semester Total:		13.0

Senior Fall Semester			Senior Spring Semester		
ENGR 491	Senior Design I	3	ENGR 492	Senior Design II	3
CHPH 445	Unit Operations*	4	ENGR 460	Statistical Meth for Engineers	3
HUM/FA or SOC/BEH SCI	Elective	3	CHPH 440	Process Control	3
ENGL 305	Technical Writing and Presentations	3	ART/MUSIC/ THEA 131	Fine Arts	3
			PE 185	Lifetime Wellness	2
Semester Total:		13.0	Semester Total:		14.0
Degree Total					132

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Total Math and Science Hours: 43 (includes Statistics for Engineers but not Pre-calculus, College Algebra, or Introductory Mathematics)

Total Engineering Hours: 53 (includes Engineering Economics but not Introductory Engineering Applications)

ABET Requirements

Math and Science: minimum of 30 hours

Engineering: minimum of 45 hours

LEGEND:

RED FONT - this course does not count toward the BS ENGR degree; this course is required for students who enter the program without the required pre-requisite knowledge

BOLD-FACED FONT – designates a course taught by the School of Engineering

BLUE BOX – indicates a course taken by all Tier 1 engineering students

* - indicates class-lab