Engineering (Bachelor of Science Engineering) Course Plan
Chemical/Pharmaceutical Concentration
TIER II – Math ACT of 22-24/Math RSAT of 540-580

Freshman Fall Semester			Freshman Spring Semester		
MATH 111	College Algebra	3	MATH 115	Precalculus	3
ENGR 100	**Freshman Seminar***	**1**	**ENGR 120**	**Foundations of Engineering Design I***	**3**
ENGR 110	**Intro. Engineering Applic.***	**3**	ENGL 102	Academic Writing & Literature	3
ENGL 101	Academic Writing	3	CHEM 113	General Chemistry II	4
CHEM 111	General Chemistry I	4	CUC 100	Connections	0.5
	Semester Total:	**14.0**		**Semester Total:**	**13.5**

Summer Semester after Freshman Year					
MATH 122	Calculus I	4	**ENGR 121**	**Foundations of Engineering Design II***	**3**
				Semester Total:	**7.0**

Sophomore Fall Semester			Sophomore Spring Semester		
MATH 223	Calculus II	4	MATH 224	Calculus III	4
PHYS 251	Fundamentals of Physics I	4	**ENGR 260**	**Electrical Circuits***	**4**
ENGR 220	**Statics & Strength of Materials**	**3**	BIOL 111	Basic Biology	4
CHPH 215	**Mass and Energy Balances**	**3**	ECON 201	Microeconomics	3
CHEM 227	Organic Chemistry I	4	ENGL 2xx	Literature	3
CUC 200	Connections	0.5			
	Semester Total:	**18.5**		**Semester Total:**	**18.0**

Junior Fall Semester			Junior Spring Semester		
MATH 310	Differential Equations and Linear Algebra	4	**ENGR 320**	**Fluids***	**3**
BIOL 280	Essentials of Microbiology and Biochemistry*	4	**ENGR 240**	**Engineering Materials & Processes***	**4**
ENGR 310	**Thermodynamics***	**3**	**CHPH 325**	**Heat Transport***	**2**
ENGL 305	Technical Writing and Presentations	3	**CHPH 345**	**Bioprocess Engineering***	**2**
CHPH 315	**Mass Transport***	**3**	**CHPH 350**	**Reaction Engineering***	**3**
			ENGR 300	**Engineering Economics**	**3**
	Semester Total:	**17.0**		**Semester Total:**	**17.0**

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 Methods for Engineers**	**3**
HIST 111 or 112	Western Civilization I or II	3	**CHPH 440**	**Process Control**	**3**
HUM/FINE ARTS or SOC/BEH SCI	Elective	3	ART 131, MUSIC 131 or THEA 131	Fine Arts	3
CHRS 125	Introduction to Christianity	3	PE 185	Lifetime Wellness	2
			HUM/FINE ARTS	Elective	3
	Semester Total:	**16.0**		**Semester Total:**	**17.0**
				Degree Total	**132**

13Oct2024

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Total Math and Science Hours: 43 (includes Statistics for Engineers but not Pre-calculus or College Algebra)
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 2 engineering students

* - indicates class-lab