Engineering (Bachelor of Science Engineering) Course Plan
Chemical/Pharmaceutical Concentration
TIER III: Math ACT of 25 or higher/Math RSAT of 590 or higher

Freshman Fall Semester			**Freshman Spring Semester**		
MATH 115	Precalculus	3	MATH 122	Calculus I	4
ENGR 100	**Freshman Seminar***	**1**	BIOL 111	Basic Biology & Lab	4
ENGR 120	**Foundations of Engineering Design I***	**3**	**ENGR 121**	**Foundations of Engineering Design II***	**3**
ENGL 101	Academic Writing	3	ENGL 102	Academic Writing & Literature	3
CHEM 111	General Chemistry I	4	CHEM 113	General Chemistry II	4
			CUC 100	Connections	0.5
	Semester Total:	**14.0**		**Semester Total:**	**18.5**

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**	CHEM 228	Organic Chemistry II	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**		
CHPH 440	**Process Control**	**3**	**ENGR 492**	**Senior Design II**	**2**
HIST 111 or 112	Western Civilization I or II	3	**ENGR 460**	**Statistical Methods for Engineers**	**3**
ENGR 491	**Senior Design I**	**4**	HUM/FINE ARTS or SOC/BEH SCI	Elective	3
CHPH 445	**Unit Operations***	**4**	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:	**17.0**		**Semester Total:**	**16.0**
				Degree Total	**136**

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Total Math and Science Hours: 47 (includes Statistics for Engineers but not Pre-calculus)
Total Engineering Hours: 53 (includes Engineering Economics)

ABET Requirements
Math and Basic Science: minimum of 30 semester credit hours
Engineering topics: minimum of 45 semester credit hours

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

BLUE BOX – indicates a course taken by all engineering students

* - indicates class-lab