

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 | BIOL 111 | Basic Biology | 4 |
| ENGR 110 | Introductory Engineering Applications* | 3 | ENGR 120 | Foundations of Engineering Design I* | 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: | | 17.5 |

| 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 | 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 |

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| | |
|---------------------|------------|
| Degree Total | 136 |
|---------------------|------------|

Total Math and Science Hours: 47 (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