

UNIVERSITY OF MIAMI
DEPARTMENT OF INDUSTRIAL ENGINEERING
BACHELOR OF SCIENCE IN INDUSTRIAL ENGINEERING
PRE-MEDICAL CONCENTRATION
138 Credits
2014- 2015

| Freshman Year: | | | | | |
|-----------------------|----------------------------------|---|--------------|--------------------------------|---|
| IEN 111 | Introduction to Engineering I | 3 | IEN 112 | Introduction to Engineering II | 2 |
| ENG 105 | English Composition I | 3 | ENG 107 | Writing About Science | 3 |
| MTH 151 | Calculus I for Engineers | 5 | MTH 162 | Calculus II | 4 |
| PHY 205 | University Physics I | 3 | PHY 206 | University Physics II | 3 |
| ECO 211 | Economic Principles and Problems | 3 | PHY 208 | University Physics II Lab | 1 |
| | | | CHM 111 | Principles of Chemistry I | 3 |
| | | | CHM 113 | Chemistry Laboratory I | 1 |
| Total | | | Total | | |
| 17 | | | 17 | | |

| Sophomore Year: | | | | | |
|------------------------|--------------------------------------|---|--------------|---------------------------------|---|
| BIL 150 | General Biology | 4 | BIL 160 | Evolution & Biodiversity | 4 |
| BIL 151 | General Biology Lab | 1 | BIL 161 | Evolution & Biodiversity Lab | 1 |
| CHM 112 | Principles of Chemistry II | 3 | MTH 311 | Ordinary Differential Equations | 3 |
| CHM 114 | Chemistry Laboratory II | 1 | PHY 209 | University Physics III Lab | 1 |
| MTH 210 | Introduction to Linear Algebra | 3 | | People and Society Cognate* | 3 |
| PHY 207 | University Physics III | 3 | | Humanities and Arts Cognate* | 3 |
| IEN 201 | Methods Analysis & Work Measurements | 3 | | Humanities and Arts Cognate* | 3 |
| Total | | | Total | | |
| 18 | | | 18 | | |

| Junior Year: | | | | | |
|---------------------|---|---|--------------|--|---|
| CHM 201 | Organic Chemistry I (Lecture) | 3 | | Advanced Bioscience Elective** | 3 |
| CHM 205 | Organic Chemistry Laboratory I | 1 | | Advanced Bioscience Elective** | 3 |
| IEN 310 | Introduction to Engineering Probability | 3 | | Technical or Science Lab Elective** | 1 |
| IEN 351 | Industrial Safety Engineering | 3 | IEN 312 | Applied Statistical Methods | 3 |
| IEN 380 | Engineering Economy | 3 | IEN 361 | Industrial Cost Analysis | 3 |
| IEN 441 | Deterministic Models in Operations Research | 3 | IEN 363 | Project Management for Engineers | 3 |
| | | | IEN 442 | Stochastic Models in Operations Research | 3 |
| Total | | | Total | | |
| 16 | | | 19 | | |

| Senior Year: | | | | | |
|---------------------|--|---|--------------|--|---|
| IEN 465 | Production & Inventory Control | 3 | IEN 406 | Computer-Aided Manufacturing | 3 |
| IEN 512 | Statistical Quality Control & Quality Management | 3 | IEN 494 | Senior Project | 3 |
| IEN 547 | Computer Simulation Systems | 3 | IEN 524 | Decision Support Systems in IE | 3 |
| IEN 557 | Ergonomics & Human Factors Engineering | 3 | IEN 568 | Materials Handling & Facilities Planning | 3 |
| | Humanities and Arts Cognate* | 3 | | People and Society Cognate* | 3 |
| | People and Society Cognate* | 3 | | | |
| Total | | | Total | | |
| 18 | | | 15 | | |

* Students must complete a minimum of 1 PS cognate and 1 HA cognate, to be selected from the list of available cognates. Each cognate should be a minimum of 3 courses (minimum of 9 credits).** Advanced Bioscience Elective is to be chosen from BMB 260, BIL 250, BIL 255, BIL 268, MIC 301, CHM 202 or BMB 402. **Students should verify admission requirements of their medical school of interest to verify Adv. Bioscience requirements, e.g. organic chemistry II, biochemistry, or both**** Technical or Science Elective Lab is selected from a science lab complementing the Adv. Bioscience Elective (e.g., CHM or BIL lab)