### Industrial Engineering BSE Career-Focus Study Areas

Select a minimum of nine semester hours from the following Career-Focus Study Areas. Students can mix and match courses from the different areas:

*Please note that some of these courses may require additional prerequisites

**Students only have to submit the Career Focus Proposal if they are choosing courses that are not listed on this document.

<table>
<thead>
<tr>
<th>Focus Area</th>
<th>Courses</th>
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| **Operations Research**                        | IEE 421 Urban Operations Research (3)  
IEE 426 Operations Research in Health Care (3)  
MAT300 Mathematical Structures (3)             |
| **Financial Engineering**                      | IEE 412 Introduction to Financial Engineering (required) (3)  
IEE 454 Risk Management(3)  
IEE 431 Engineering Administration (3)        |
| **Engineering Management**                     | IEE 456 Intro to Systems Engineering (3)  
IEE 454 Risk Management (3)  
IEE 458 Project Management (3)  
IEE 431 Engineering Administration             |
| **Computer/Information Systems Engineering**   | *Students should plan to do MAT 300 for TE for this focus  
CSE 310 Data Structures and Algorithms (3)  
CSE 360 Intro to Software Engineering (3)  
CSE 430 Operating Systems (3)  
IEE 456 Intro to Systems Engineering (3)       |
| **Global Industrial Engineering Leadership**   | ECN 306 Survey of International Economics (3)  
MGT 302 Principles of International Business (3)  
MGT 459 International Management (3)          |
| **Industrial Engineering 4+1 Program**         | Three graduate-level courses (IEE5XX) of which two or more are from the Master’s Core Class list  
Note: Students must be admitted into the 4+1 Program.  
See your academic advisor for details.          |
| **Industrial Statistics**                      | IEE 381 Lean Six Sigma Methodology (3)  
STP 425 Stochastic Processes (3)  
STP 429 Experimental Statistics (3)           |
| **Electronics Manufacturing**                  | EEE 352 Properties of Electronic Materials (4)  
EEE 435 Microelectronics (3)  
EEE 436 Fundamentals of Solid State Devices (3) |
| **Health Care Systems Engineering**            | IEE 421 Urban Operations Research  
IEE 426 Operations Research in Health Care  
IEE 431 Engineering Administration             |
| **Technical Elective Options:**                | All course options should be discussed with an advisor, as classes have prerequisites and are sequential. |
| **Technical Elective Options:**                | IEE 381 Lean Six Sigma Methodology  
IEE 431 Engineering Administration  
IEE 412 Introduction to Financial Engineering  
IEE 421 Urban Operations Research  
IEE 426 Operations Research in Health Care  
IEE 437 Human Factors Engineering  
IEE 454 Risk Management  
IEE 456 Intro to Systems Engineering  
IEE 458 Project Management  
IEE 477 System Dynamics and Thinking  
CSE 494 Introduction to Data Mining  
FSE 301 Entrepreneurship for Engineers  
Any 300-level or higher approved engineering or business course with Program Chair approval  
*Updated 9.20.16 |