# Industrial Engineering (PhD)

## Degree Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Required Course</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ISE 801 Seminar</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>Select a minimum of two 700-level ISE course approved in conjunction with the academic committee</td>
<td></td>
</tr>
<tr>
<td></td>
<td>See &quot;Core Courses&quot; listed below</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Elective / Research Courses</strong></td>
<td>54</td>
</tr>
<tr>
<td></td>
<td>&quot;Elective / Research Courses&quot; are approved in conjunction with the academic committee</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total Hours</strong></td>
<td>73</td>
</tr>
</tbody>
</table>

## Core Courses

Select a minimum of one course from each category: 9

- **Human Factors and Ergonomics Category**
  - ISE 540 Human Factors In Systems Design
  - ISE 541 Occupational Safety Engrg
  - ISE 544 Occupational Biomechanics
  - ISE 744 Human Information Processing
  - ISE 745 Human Performance Modeling

- **Manufacturing Systems Category**
  - ISE 515 Manufacturing Process Engineering
  - ISE 519 Database Applications in Industrial and Systems Engineering
  - ISE 714 Product Manufacturing Engineering for the Medical Device Industry
  - ISE 716 Automated Systems Engineering

- **Production Systems Category**
  - ISE 552 Design and Control of Production and Service Systems
  - ISE 723 Production Planning, Scheduling and Inventory Control
  - ISE 726 Theory of Activity Networks
  - ISE 748 Quality Engineering
  - ISE 754 Logistics Engineering

- **Systems Analytics and Optimization Category**
  - ISE 501 Introduction to Operations Research
  - OR 504 Introduction to Mathematical Programming
  - ISE 505 Linear Programming
  - ISE 560 Stochastic Models in Industrial Engineering
  - ISE 562 Simulation Modeling
  - ISE 709 Dynamic Programming
  - ISE 760 Applied Stochastic Models in Industrial Engineering
  - ISE 761 Queues and Stochastic Service Systems

## Faculty

### Full Professors
- Paul Cohen
- Shu-Cherng Fang
- Yahya Fathi
- Ola Lars Anders Harrysson
- Julie Simmons Ivy
- Russell E. King
- Yuan-Shin Lee
- Maria Esther Mayorga
- Chan S. Nam
- Binil Starly
- Julie Swann
- Reha Uzsoy

### Associate professors
- Jingyan Dong
- Michael G. Kay
- Yunan Liu
- Osman Yalin Ozaltin
- Rohan Ajit Shirwaiker
- Hong Wan

### Assistant Professors
- Karen Boru Chen
- Xiaolei Fang
- Leila Hajibabai Dizaji
- Sara Shashaani
- Xu Xu

### Practice/Research/Teaching Professors
- Steven D. Jackson
- Brandon Mark McConnell
- Kanton Tyrone Reynolds
- Javad Taheri
Emeritus Faculty

Mahmoud A. Ayoub
Richard Harold Bernhard
Charles Thomas Culbreth Jr.
Thom Joel Hodgson
Henry Nuttle
Richard G. Pearson
Stephen Dean Roberts
Ezat Sanli
Clarence Smith Jr.
James Reed Wilson
Richard Wysk
Robert E. Young