Industrial Engineering Major, B.S.I.E.

Automated Systems Program

Mission: The mission of the Bachelor of Science in Industrial Engineering program is to deliver a hands-on, laboratory-intensive undergraduate education to provide students with the tools and skills to excel in the profession, as they pursue life-long learning and make positive contributions to society. With an emphasis on integrated systems and a strategic partnership with Luleå University of Technology in Sweden, the BSIE program will offer unique opportunities for study abroad, undergraduate research, and technical electives to develop an enhanced global perspective.

Educational Objectives: The educational objectives of the Bachelor of Science in Industrial Engineering program are to produce graduates who can:

1. Solve industrial engineering problems by applying contemporary engineering tools to propose and implement effective solutions.
2. Design, develop, implement, and improve integrated systems that include people, materials, information, equipment, and energy.
3. Contribute as informed, ethical, and responsible members of the engineering profession and society as a whole.
4. Continue lifelong professional development throughout their career.
5. Collaborate and communicate effectively with others as a member or leader of an engineering or multidisciplinary team in an international setting.

Typical Program of Study:

Fall Semester		*Spring Semester*	
First Year			
Comp 1120 College Writing	3 cr	Chem 1151 General Chemistry I	5 cr
CS elective course [a]	3-5 cr	Math 1297 Calculus II	5 cr
Math 1296 Calculus I *	5 cr	IE 1225 Intro to Engineering Design, Mfg	4 cr
Liberal education course [b]	3 cr	Phys 2011 General Physics I	4 cr
	14-16 cr		18 cr
Second Year			
Engr 2015 Statics	3 cr	Econ 1023 Principles of Economics: Micro	
Engr 2110 or ME 2105 Intro to Materials Science	3 cr	or Econ 1022 Principles of Economics: Macro	3 cr
Math 3280 Diff Equations/Linear Algebra	4 cr	Engr 2016 Mechanics of Materials	3 cr
Phys 2012 General Physics II	4 cr	Engr 2026 Dynamics	3 cr
CS elective course [a]	3-5 cr	ECE 2006 Electrical Circuit Analysis	4 cr
	17-19 cr	Stat 3611 Probability & Statistics	
		or Stat 3411 Engineering Statistics	4 cr
			17 cr
Third Year			
Comp 3130: Advanced Writing: Engineering		IE 3255 Statistical Quality Control	3 cr
or Comp 3150 Advanced Writing: Science		IE 3265 Production & Operations Mgt	4 cr
or Comp 3180 Advanced Writing: Honors	3 cr	ME 4135 Robotics & Controls	4 cr
IE 3105 Human Factors	4 cr	Automated Systems elective [c]	3 cr
IE 3115 Operations Research	4 cr	Liberal education course [b]	3 cr
IE 3125 Engineering Economic Analysis	3 cr		17 cr
IE 3135 Materials Processing	4 cr		
	18 cr		
Fourth Year			
IE 4115 Facility Planning & Simulation	4 cr	IE 4255 Multidisciplinary Senior Design	4 cr
EMgt 4110 Engr. Professionalism and Practice	2 cr	Automated Systems elective[c]	3 cr
IE 4235 Manufacturing Systems Integration	4 cr	Liberal education courses [b]	6 cr
Automated Systems elective [c]	3 cr		13 cr
	13 cr		

* First math course is determined by math placement exam. This schedule presupposes placement into Math 1296

[a] Students must choose two of the following computer science courses: CS 1121, CS 1131, CS 1211, CS 1511, CS 1521 **or** CS 2121.

[b] In addition to the above courses, students must complete one course each from liberal education categories 7, 8, and 9, and one course from 9 or 10 (12 credits); courses from 9 and 10 must have different course designators.

[c] See IE/ME website for automated systems elective options

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