



THE UNIVERSITY OF  
ALABAMA IN HUNTSVILLE



## Industrial & Systems Engineering

*Industrial Engineers* use their specialized knowledge to design, improve, or manage technical systems. Because these systems often involve people as well as machines, materials, information, or energy, they must be versatile problem solvers and able to use their technical knowledge in multidisciplinary teams.

They may analyze organizational or production problems, study the product or service and its requirements, or develop new processes

using statistical data, computer and financial models, and human factors. They also design and improve supply chains for the physical distribution of goods and services or determine the most efficient plant locations to minimize cost. Industrial engineers frequently lead projects involving quality and safety.



### Highlights

- All faculty have professional experience, not just academic. This encourages an open door policy and the eagerness to help you learn.
- Professional Advantages: Earn Six Sigma “Green Belt” Certification and Lean Manufacturing Certification.
- Average median salary in 2012: \$78,860.



"I have really enjoyed the past two years of working at Lockheed Martin as a Logistics Analyst. This co-op has given me some great opportunities to grow as an individual and professional. I am looking forward to working full time at Lockheed Martin once I graduate."

Anna Hester // Huntsville, Alabama  
**Senior, INDUSTRIAL ENGINEERING**

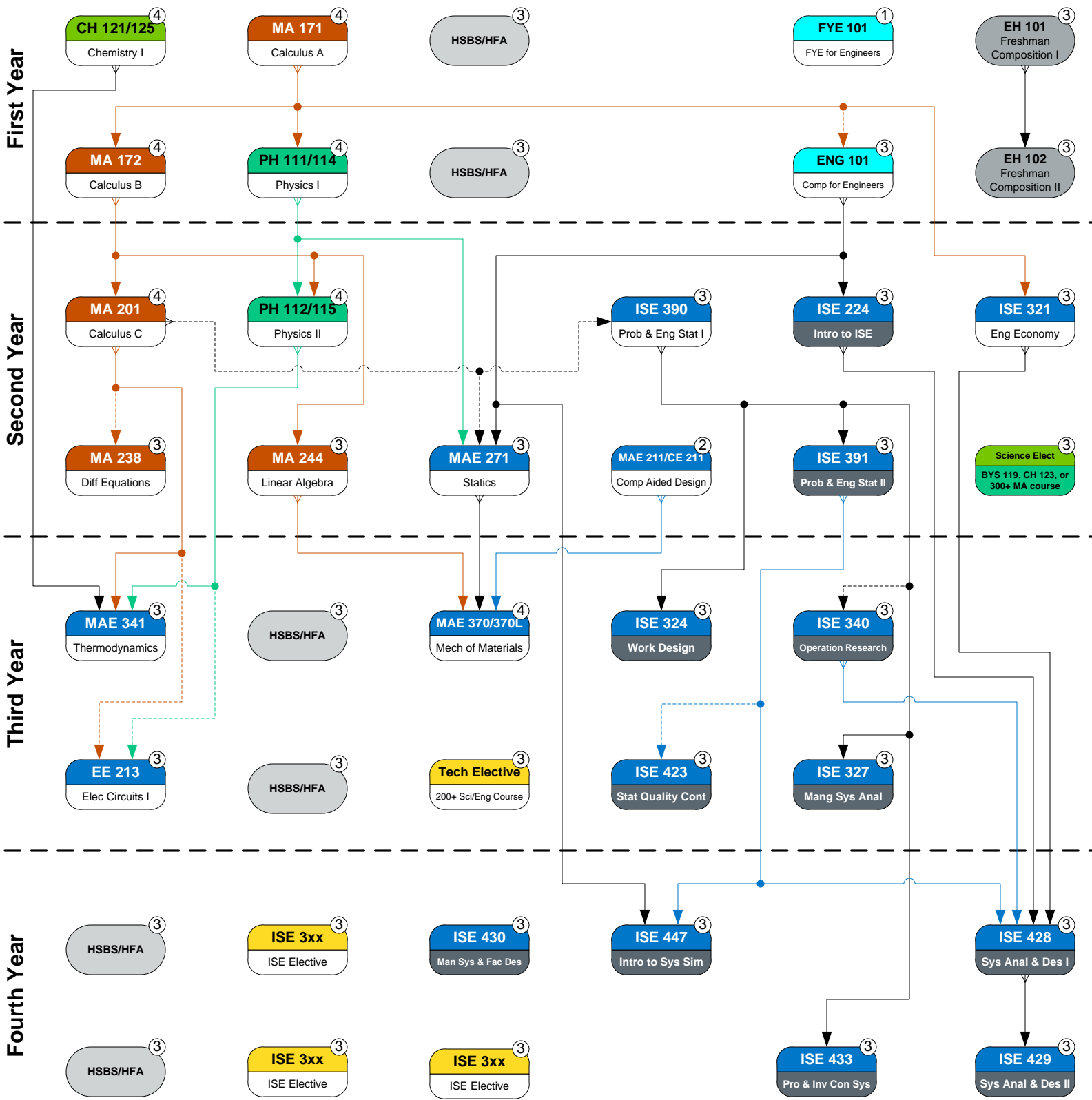
**GO.  
LEARN.  
BE.**

Student A#				Student Name (Last, First MI)		Offered:
Semester, Transfer or AP	Grade	Course Number	Cr Hrs	Course Title	Prerequisites, Corequisites and/or Prerequisites with Concurrency	F=Fall S=Spr M=Sum
<b>English - 6 hours</b>						
		EH 101	3	Freshman Composition I	Placement	FSM
		EH 102	3	Freshman Composition II	EH 101	FSM
<b>Mathematics - 18 hours</b>						
		MA 171	4	Calculus A	MA 113 or MA 115 or Level III Placement	FSM
		MA 172	4	Calculus B	MA 171	FSM
		MA 201	4	Calculus C	MA 172	FSM
		MA 238	3	Applied Differential Equations	Prereq w/Con: MA 201	FSM
		MA 244	3	Introduction to Linear Algebra	MA 172	FSM
<b>Chemistry - 4 hours</b>						
		CH 121	3	General Chemistry I	Plcmt or CH 101, MA 113 or 115, Prereq w/Con: MA 171, Coreq: CH 125	FSM
		CH 125	1	General Chemistry Lab I	Coreq: CH 121	FSM
<b>Physics - 8 hours</b>						
		PH 111	3	General Physics w/Calculus I	MA 171, Coreq: 114	FSM
		PH 114	1	General Physics Lab I	Coreq: PH 111	FSM
		PH 112	3	General Physics w/Calculus II	MA 172, PH 111, Coreq: 115	FSM
		PH 115	1	General Physics Lab II	Coreq: PH 112	FSM
<b>Science Elective - 3 hours</b>						
			3		BYS 119, CH 123, PH 113, or 300/400 MA course	
<b>History, Social &amp; Behavioral Sciences, Humanities &amp; Fine Arts - 18 hours</b>						
			3	History	HY 103, HY 104, HY 221, or HY 222	FSM
			3	Literature	EH 207 or EH 208	FSM
			3	Fine Art	ARH 100, ARH 101, ARH 103, CM 122, MU 100, or ARS 160	FSM
			3	Social & Behavioral Science	For more information on HSBS/HFA Requirements: <a href="http://www.uah.edu/images/colleges/engineering/CUE2%20Files/Forms/HSBS_HFA_Requirements_05202014.pdf">http://www.uah.edu/images/colleges/engineering/CUE2%20Files/Forms/HSBS_HFA_Requirements_05202014.pdf</a>	FSM
			3	Sequence Course (HY or EH)		FSM
			3	HSBS/HFA		FSM
<b>First-Year Engineering - 4 hours</b>						
		FYE 101	1	First-Year Experience for Engineers	None	FS
		ENG 101	3	Computing for Engineers	Prereq w/Con: MA 171	SM
**	<b>Class has required lab section Industrial &amp; System Engineering Option - 54 hours</b>					
		ISE 224	3	Intro to Industrial & Systems Engineering	ENG 101	F
Select One		CE 211	2	Civil Engineering Graphics	ENG 101	FS
		MAE 211	2	Introduction to Computer Aided Design	ENG 101, MA 171	FSM
		MAE 271	3	Statics	ENG 101, PH 111, Prereq w/Con: MA 201	FSM
		EE 213	3	Electrical Circuit Analysis I	Prereq w/Con: PH 112, MA 201	FSM
		ISE 321	3	Engineering Economy	MA 171	FSM
		ISE 324	3	Work Design	ISE 390	F
		ISE 327	3	Management Systems Analysis	ISE 390	S
		ISE 340	3	Operations Research	Prereq w/Con: ISE 390	F
		MAE 341	3	Thermodynamics I	MA 201, CH 121, CH 125, PH 112	FSM
**		MAE 370	4	Mechanics of Materials	MAE/CE 271, MA 244 & (MAE 211 or CE 111), Coreq: MAE 370L	FSM
		ISE 390	3	Probability & Engineering Statistics I	Prereq w/Con: MA 201	FSM
		ISE 391	3	Probability & Engineering Statistics II	ISE 390	S
		ISE 423	3	Statistical Quality Control	Prereq w/Con: ISE 391	S
		ISE 428	3	Systems Analysis & Design I	ISE 224, ISE 321, ISE 340, ISE 391, Instructor Approval	F
		ISE 429	3	Systems Analysis & Design II	ISE 428	S
		ISE 430	3	Manufacturing Systems and Facilities Design	ISE 324 or MAE 378	F
		ISE 433	3	Production & Inventory Control Systems	ISE 390	S
		ISE 447	3	Intro to Systems Simulation	ENG 101, ISE 391	F
<b>Industrial &amp; Systems Engineering Electives - 9 hours</b>						
			3	Choose from MA 385, ISE 402, ISE 403, ISE 426, ISE 437, or other upper-level courses approved by the Department.		
			3	May select a maximum of 6 hours from the following: EH 301, ACC 211, MKT 301, MGT 363, or MGT 462.		
<b>Technical Elective - 3 hours</b>						
			3	200+ Level Science or Engineering course		

All prerequisite classes must be completed with a "C-" or higher grade.

The Catalog is the final authority for all degree requirements.

# Academic Flowchart



<b>Legend</b> Updated: 5/6/15	Mathematics	First Year Engineering	Freshman Composition	Credit Hours
	Physics	Industrial & Systems Engineering Option	History, Social & Behavioral Science Humanity & Fine Art	Prerequisite
	Chemistry / Biology	Electives	Offered only in semester listed	Prereq w/concurrency

**Industrial and Systems Engineering Department: 4-Year Rolling Class Schedule, Fall 2015 - Spring 2019\***

	Fall 2015	Anticipated Sections	Spring 2016	Anticipated Sections	Fall 2016	Spring 2017	Fall 2017	Spring 2018	Fall 2018	Spring 2019
<b>ISE 124</b> Intro to ISE	Y	1	N	0	N	N	N	N	N	N
<b>ISE 224</b> Intro to ISE	N	0	N	0	Y	N	Y	N	Y	N
<b>ISE 321</b> Engineering Economy	Y	1	E	1	Y	E	Y	E	Y	E
<b>ISE 324</b> Work Design	Y	1	N	0	Y	N	Y	N	Y	N
<b>ISE 327</b> Management Sys Analysis	N	0	Y	1	N	Y	N	Y	N	Y
<b>ISE 340</b> Operations Research	Y	1	N	0	Y	N	Y	N	Y	N
<b>ISE 390</b> Probability/Eng Statistics I	Y	2	E	2	Y	E	Y	E	Y	E
<b>ISE 391</b> Probability/Eng Statistics II	N	0	Y	1	N	Y	N	Y	N	Y
<b>ISE 402</b> Industrial/Org Psychology	Y	1	N	0	Y	N	Y	N	Y	N
<b>ISE 403</b> Human Factors Psychology	N	0	Y	1	N	Y	N	Y	N	Y
<b>ISE 423</b> Statistical Quality Control	N	0	Y	1	N	Y	N	Y	N	Y



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<b>ISE 426</b> Design/Analysis of Exper	N	0	Y	1	N	Y	N	Y	N	Y
<b>ISE 428</b> Systems Analysis/Design I	Y	1	N	0	Y	N	Y	N	Y	N
<b>ISE 429</b> Systems Analysis/Design II	Y	1	Y	1	N	Y	N	Y	N	Y
<b>ISE 430</b> Manuf Sys/Facilities Des	Y	1	N	0	Y	N	Y	N	Y	N
<b>ISE 433</b> Prodn/Inventory Cntrl Sys	N	0	Y	1	N	Y	N	Y	N	Y
<b>ISE 437</b> Electronics Manufacturing	N	0	N	0	D	D	D	D	D	D
<b>ISE 447</b> Intro to Sys Simulation	Y	1	N	0	Y	N	Y	N	Y	N

**Legend**

Y	Course will be offered in designated term.
E	Course will likely be offered in designated term, but availability will be determined by faculty availability and budget.
N	Course will not be offered in designated term.
D	Course may be made available given appropriate demand or interest.

\* UAH College of Engineering will make every effort to adhere to the class plan schedule, but it reserves the right to make necessary adjustments based on budget and faculty availability.

\*\* Course has a required lab section.



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[uah.edu/engineering](http://uah.edu/engineering)

