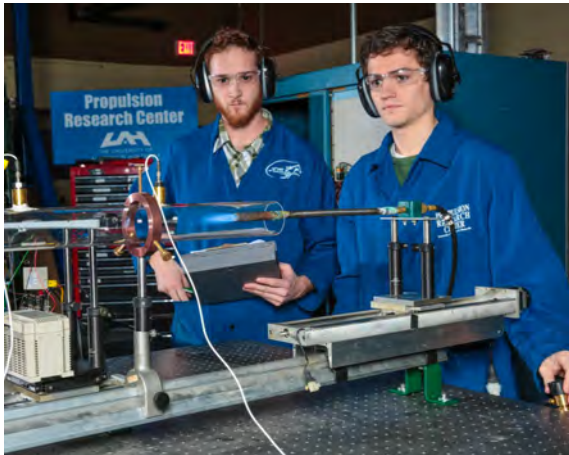




THE UNIVERSITY OF ALABAMA IN HUNTSVILLE



Aerospace Engineering

Aerospace Engineers concentrate mainly on four areas of technology: aerodynamics, structures and materials, propulsion and flight mechanics which allows them to develop extraordinary machines. They design, develop and test aircraft, spacecraft, and missiles, and supervise the manufacturing of these products. They develop new technologies for use in aviation, defense systems, and space exploration, and can

specialize in a particular type of aerospace product, such as commercial aircraft, military fighter jets, spacecraft, or missiles and rockets.



Highlights

- Huntsville, Alabama has the #1 concentration of Aerospace engineering jobs in the United States.
- Also known as the "Rocket City," Huntsville is deeply rooted in our nation's aerospace industry.
- Students co-op with Boeing, GE, NASA, and many more.
- Average median salary in 2012: \$103,720.



"The work I have done at NASA is exciting and challenging. This experience has inspired me to pursue a career supporting space exploration, and also allows me to work on interesting projects like the Hexacopter in this photo."

Adam Dzuibanek // Decatur, Alabama
Senior, Aerospace **ENGINEERING**

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Academic Checksheet



Aerospace Engineering 2015/2016 (128 Hours)

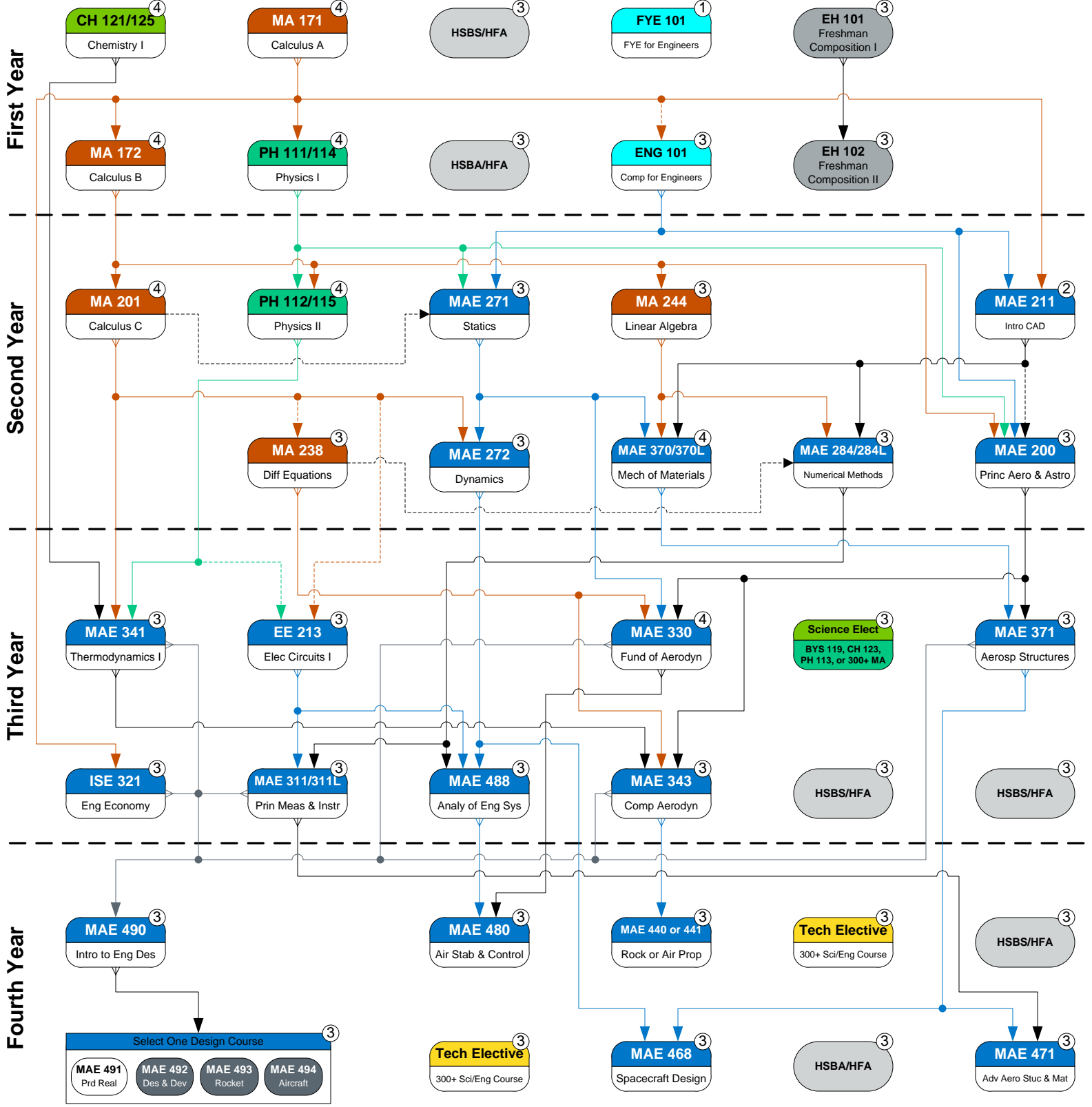
Student A#				Student Name (Last, First MI)			Offered: F=Fall S=Spr M=Sum
Semester, Transfer or AP	Grade	Course Number	Cr Hrs	Course Title	Prerequisites, Corequisites and/or Prerequisites with Concurrency		
English - 6 hours							
		EH 101	3	Freshman Composition I	Placement		FSM
		EH 102	3	Freshman Composition II	EH 101		FSM
Mathematics - 18 hours							
		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
Chemistry - 4 hours							
		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
Physics - 8 hours							
		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
Science Elective - 3 or 4 hours							
			3		BYS 119, CH 123, PH 113, or 300/400 MA course		FSM
History, Social & Behavioral Sciences, Humanities & Fine Arts - 18 hours							
			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: http://www.uah.edu/images/colleges/engineering/CUE2%20Files/Forms/HSBS_HFA_Requirements_05202014.pdf		FSM
			3	Sequence Course (HY or EH)			FSM
			3	HSBS/HFA			FSM
First-Year Engineering - 4 hours							
		FYE 101	1	First-Year Experience for Engineers	None		FS
		ENG 101	3	Computing for Engineers	Prereq w/Con: MA 171		SM
**	Class has required lab section			Aerospace Engineering Option - 61 hours			
		MAE 200	3	Principles of Aeronautics & Astronautics	ENG 101, MA 172, PH 111, Prereq w/Con MAE 211		FS
		MAE 211	2	Introduction to Computer Aided Design	ENG 101, MA 171		FSM
		EE 213	3	Electrical Circuit Analysis I	Prereq w/Con: PH 112, MA 201		FSM
		MAE 271	3	Statics	ENG 101, PH 111, Prereq w/Con: MA 201		FSM
		MAE 272	3	Dynamics	MA 201, MAE/CE 271		FSM
**		MAE 284	3	Numerical Methods	MA 244, MAE 211; Prereq w/Con: MA 238 & Coreq: MAE 284L		FSM
**		MAE 311	3	Principles of Measurement & Instrumentation	EE 213, MAE 284; Coreq MAE 311L		FSM
		ISE 321	3	Engineering Economy	MA 171		FSM
		MAE 330	4	Fundamentals of Aerodynamics	MAE 200, MAE 271, MA 238		FM
		MAE 341	3	Thermodynamics I	MA 201, CH 121, CH 125, PH 112		FSM
**		MAE 343	3	Compressible Aerodynamics	MAE 200, MA 238, MAE 341		FS
**		MAE 370	4	Mechanics of Materials	MAE/CE 271, MA 244 & (MAE 211 or CE 111), Coreq: MAE 370L		FSM
		MAE 371	3	Aerospace Structures	MAE 200, MAE/CE 370		FS
Select One		MAE 440	3	Rocket Propulsion I	MAE 343		FM*
		MAE 441	3	Airbreathing Propulsion	MAE 343		FM*
		MAE 468	3	Elements of Spacecraft Design	MAE/CE 272, MAE 371		FS
		MAE 471	3	Advanced Aero Structure & Materials	MAE 311, MAE 371		FS
		MAE 480	3	Aircraft Stability & Control	MAE 330, MAE 488		FS
		MAE 488	3	Analysis of Engineering Systems	EE 213, MAE/CE 272, MAE 284		FSM
		MAE 490	3	Intro to Engineering Design	ISE 321 & MAE 311, 341 & (MAE 310, 364, & 378) or (MAE 330, 343, & 371)		FSM
Select One		MAE 491	3	Product Realization	MAE 490 & Senior Standing		FS
		MAE 492	3	Mission Design & Development	MAE 490 & Senior Standing		S
		MAE 493	3	Rocket Design	MAE 490 & Senior Standing		S
		MAE 494	3	Aircraft Design	MAE 490 & Senior Standing		S
Technical Elective - 6 hours							
			3		300+ Level Science or Engineering course		
			3		May not take both MA 385 & ISE 390, or MAE 310 for credit		

* These courses are offered in alternating summers. Please consult the MAE 5 year plan.
All prerequisite classes must be completed with a "C-" or higher grade.
The Catalog is the final authority for all degree requirements.

Academic Flowchart



Aerospace Engineering 2015/2016 (128 Hours)



Legend Updated: 5/7/15	Mathematics	First-Year Engineering	Freshman Composition	Credit Hours
	Physics	Aerospace Engineering Option	History, Social & Behavioral Science Humanity & Fine Art	Prerequisite
	Chemistry / Biology	Technical Elective	Offered only in semester listed	Prereq w/concurrency

Mechanical and Aerospace 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
MAE 100 ** Intro to Mech Eng	Y	1	N	0	N	N	N	N	N	N
MAE 111 Intro to Comp Tools	Y	2	Y	2	N	N	N	N	N	N
MAE 115 Machining	Y	2	Y	2	Y	Y	Y	Y	Y	Y
MAE 200 Principles of Aero/Astro	Y	1	Y	1	Y	Y	Y	Y	Y	Y
MAE 211 Intro to Comp Tools	N	0	N	0	Y	Y	Y	Y	Y	Y
MAE 271 Statics	Y	4	Y	3	Y	Y	Y	Y	Y	Y
MAE 272 Dynamics	Y	2	Y	2	Y	Y	Y	Y	Y	Y
MAE 284 ** Numerical Methods	Y	1	Y	1	Y	Y	Y	Y	Y	Y
MAE 310 Fluid Mechanics I	Y	2	E	2	Y	E	Y	E	Y	E
MAE 311 ** Prin of Measurement/Instr	E	1	Y	1	E	Y	E	Y	E	Y
MAE 330 Fund of Aerodynamics	N	0	N	0	Y	N	Y	N	Y	N



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MAE 341 Thermodynamics I	Y	3	E	3	Y	E	Y	E	Y	E
MAE 342 Thermodynamics II	E	1	Y	1	E	Y	E	Y	E	Y
MAE 343 Compress. Aerodynamics	N	0	N	0	N	Y	N	Y	N	Y
MAE 364 ** Kinematics/Dyn of Mach	E	2	Y	2	E	Y	E	Y	E	Y
MAE 370 ** Mechanics of Materials	Y	2	Y	2	Y	Y	Y	Y	Y	Y
MAE 371 Aerospace Structures	Y	1	E	1	Y	E	Y	E	Y	E
MAE 378 Materials/Manuf Processes	E	1	Y	1	E	Y	E	Y	E	Y
MAE 420 Compress. Aerodynamics	N	0	Y	1	N	N	N	N	N	N
MAE 430 Fund of Aerodynamics	Y	1	N	0	N	N	N	N	N	N
MAE 440 Rocket Propulsion I	Y	1	N	0	Y	N	Y	N	Y	N
MAE 441 Airbreathing Propulsion	Y	1	N	0	Y	N	Y	N	Y	N
MAE 450 ** Intro to Heat/ Mass Transfer	Y	2	E	2	Y	E	Y	E	Y	E
MAE 455 Design of Thermal Systems	N	0	Y	1	N	Y	N	Y	N	Y



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MAE 461 Vibrations of Elastic Sys	Y	1	D	0	D	D	D	D	D	D
MAE 463 Intermediate Dynamics	N	0	D	0	D	D	D	D	D	D
MAE 466 Mech/Design of Mach Elmts	Y	1	N	0	Y	N	Y	N	Y	N
MAE 468 Spacecraft Design	Y	1	Y	1	E	Y	E	Y	E	Y
MAE 471 Adv Aerospace Structures	Y	1	Y	1	E	Y	E	Y	E	Y
MAE 474 Appl Mechanics of Solids	N	0	D	0	D	D	D	D	D	D
MAE 476 Mech/Fab of Compos Mats	N	0	D	0	D	D	D	D	D	D
MAE 477 Exp Tech in Solid Mech	N	0	D	0	D	D	D	D	D	D
MAE 480 Aircraft Stability/Control	Y	1	E	1	Y	E	Y	E	Y	E
MAE 488 Analysis of Eng Systems	Y	2	Y	1	E	Y	E	Y	E	Y
MAE 489 Comp-Aided Eng Analysis	Y	1	E	2	Y	E	Y	E	Y	E
MAE 490 Intro to Eng Design	Y	4	E	2	Y	E	Y	E	Y	E
MAE 491 Product Realization	Y	1	Y	1	E	Y	E	Y	E	Y



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MAE 492 Mission Dev/Design	Y	1	Y	1	E	Y	E	Y	E	Y
MAE 493 Rocket Design	N	0	Y	1	N	Y	N	Y	N	Y
MAE 494 Aircraft Design	N	0	Y	1	N	Y	N	Y	N	Y

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.



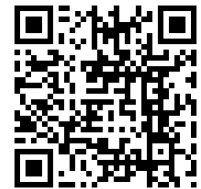
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Civil & Environmental Engineering

Civil Engineering is considered the oldest and broadest of all the engineering fields and comprises many areas of specialization including: structural, water resources, environmental, construction, transportation, and geotechnical engineering. Civil engineers are involved in a wide spectrum of activities including: design, supervision and construction of roads, buildings, airports, tunnels, dams, and bridges; traffic planning; soil improvement; water and wastewater treatment; air and water

pollution control; environmental remediation; earthquake engineering; wind engineering; hazard mitigation; and advanced construction materials, to name a few. Many civil engineers hold supervisory positions from project manager of a construction site to city engineer designing roads and traffic pathways.



Highlights

- Four Concentrations: Environmental & Water Resource, Structural Engineering & Mechanics, Transportation, and General.
- Students co-op at Brasfield & Gorrie, Southern Company, U.S. Army, and many more.
- Average median salary in 2012: \$79,340.



"As a Co-Op for International Paper working in the environmental division, I am not only able to work in a field that pertains to my major, I am also gaining knowledge and valuable work experience not obtainable from inside the classroom alone. I am looking forward to my next two semesters here!"

Erica McDonald // New Hope, Alabama
Junior, **CIVIL ENGINEERING**

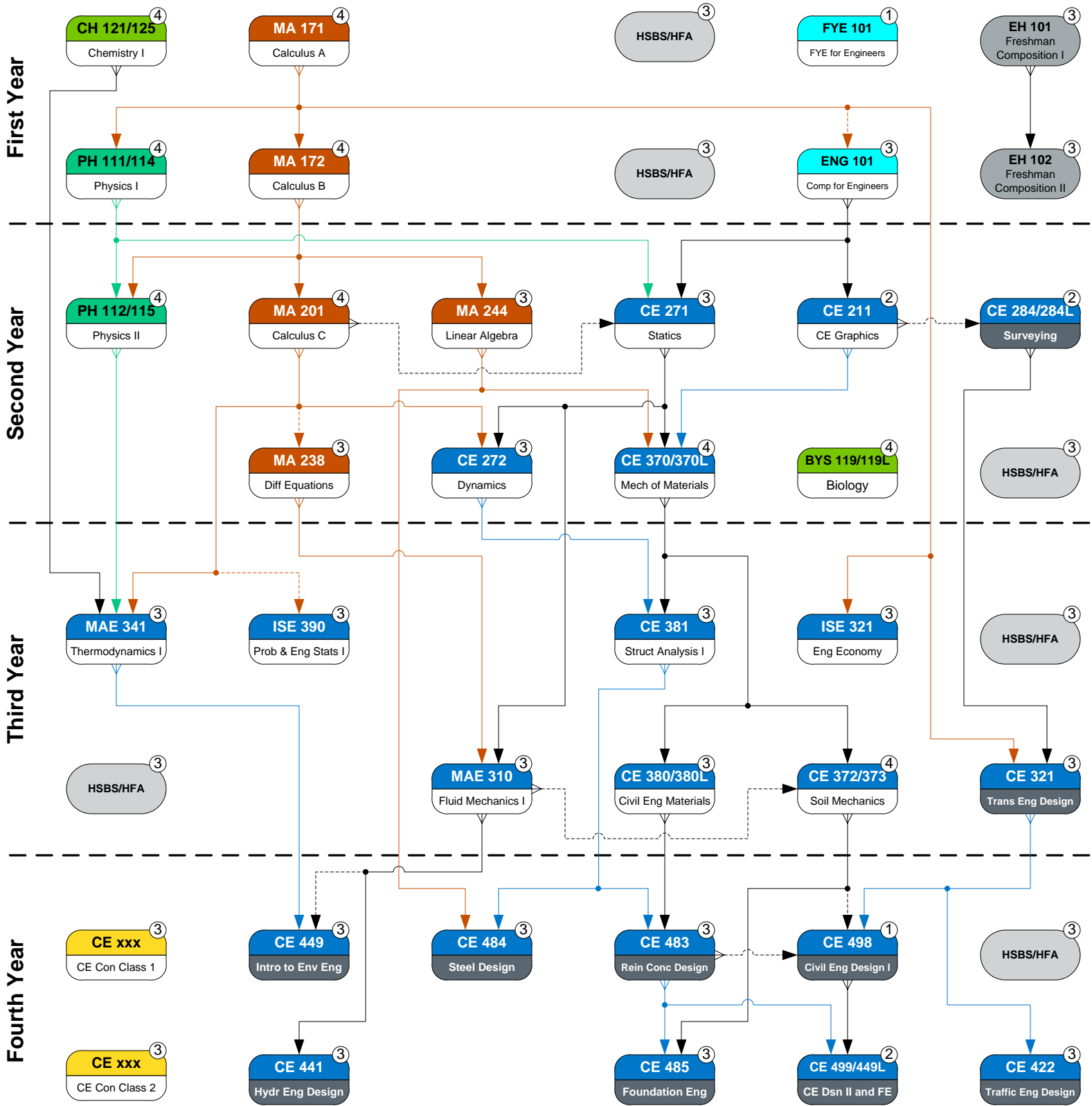
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Student A#				Student Name (Last, First MI)		Offered:
Semester, Transfer or AP	Grade	Course Number	Cr Hrs	Course Title	Prerequisites, Corequisites and/or Prerequisites with Concurrency	F=Fall S=Spr M=Sum
English - 6 hours						
		EH 101	3	Freshman Composition I	Placement	FSM
		EH 102	3	Freshman Composition II	EH 101	FSM
Mathematics - 18 hours						
		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
Chemistry - 4 hours						
		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
Physics - 8 hours						
		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
Biology - 4 hours						
		BYS 119	4	Principles of Biology	None	FSM
History, Social & Behavioral Sciences, Humanities & Fine Arts - 18 hours						
			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: http://www.uah.edu/images/colleges/engineering/CUE2%20Files/Forms/HSBS_HFA_Requirements_05202014.pdf	FSM
			3	Sequence Course (HY or EH)		FSM
			3	HSBS/HFA		FSM
First-Year Engineering - 4 hours						
		FYE 101	1	First-Year Experience for Engineers	None	FS
		ENG 101	3	Computing for Engineers	Prereq w/Con: MA 171	SM
**	Class has required lab section			Civil Engineering Option - 60 hours		
		CE 211	2	Civil Engineering Graphics	ENG 101	FS
		CE 271	3	Statics	ENG 101, PH 111, Prereq w/Con: MA 201	FSM
		CE 272	3	Dynamics	MA 201, MAE/CE 271	FSM
**		CE 284	2	Surveying	Prereq w/Con: CE 211, or Instr/Advsr Approval	F
		MAE 310	3	Fluid Mechanics I	MA 238, MAE/CE 271	FSM
		CE 321	3	Transportation Engineering & Design	CE 284, MA 171	S
		ISE 321	3	Engineering Economy	MA 171	FSM
		MAE 341	3	Thermodynamics I	MA 201, CH 121, CH 125, PH 112	FSM
**		CE 370	4	Mechanics of Materials	MAE/CE 271, MA 244 & (MAE 211 or CE 211), Coreq: MAE 370L	FSM
		CE 372	3	Soil Mechanics	CE/MAE 370, Prereq w/Con: MAE 310	FS
		CE 373	1	Soil Mechanics Lab	Coreq: CE 372	FS
		CE 380	3	Civil Engineering Materials	CE/MAE 370, Coreq: CE 380L	FS
		CE 381	3	Structural Analysis I	CE/MAE 272, CE/MAE 370	FM
		ISE 390	3	Probability & Engineering Statistics I	Prereq w/Con: MA 201	FSM
		CE 422	3	Traffic Engineering Design	CE 321	S
		CE 441	3	Hydraulic Engineering Design	MAE 310	S
		CE 449	3	Intro to Environmental Engineering	MAE 341, Prereq w/Con: MAE 310	F
		CE 483	3	Reinforced Concrete Design	CE 380, CE 381	F
		CE 484	3	Steel Design	CE 381, MA 244	F
		CE 485	3	Foundation Engineering	CE 372, CE 483	S
		CE 498	1	Civil Engineering Design I	CE 321, Prereq w/Con: CE 372 and CE 483, Senior Standing	F
**		CE 499	2	Civil Engineering Design II	CE 483, CE 498 Coreq: CE 499L (FE Review)	S
Civil Engineering Electives - 6 hours						
		CE 481	3	Structural Analysis II	CE 381	S
		CE 487	3	Bridge Design	CE 483	S
		CE 456	3	Water Quality Control Processes	CE 449	S
		CE 457	3	Hydrology	MAE 310	F
		CE 411	3	Intro to Geographical Information Systems	Senior Standing or Instructor Approval	F
		CE 420	3	Urban Transportation Planning	CE 321	F
		CE	3	Choose from CE 411, CE 412, CE 420, CE 456, CE 457, CE 458, CE 473, CE 481, CE 487		

All prerequisite classes must be completed with a "C-" or higher grade.
The Catalog is the final authority for all degree requirements.

Academic Flowchart

Civil Engineering 2015/2016 (129 Hours)



Legend Updated: 5/7/15	Mathematics	First-Year Engineering	Freshman Composition	Credit Hours
	Physics	Civil Engineering Option	History, Social & Behavioral Science Humanity & Fine Art	Prerequisite
	Chemistry / Biology	Engineering Electives	Offered only in semester listed	Prereq w/concurrency

Civil 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
CE 101 Prelude to Civil Eng	N	0	N	0	N	N	N	N	N	N
CE 111 Civil Engineering Graphics	Y	1	Y	1	N	N	N	N	N	N
CE 211 Civil Engineering Graphics	N	0	N	0	Y	Y	Y	Y	Y	Y
CE 271 Statics	Y	1	Y	1	Y	Y	Y	Y	Y	Y
CE 272 Dynamics	Y	2	Y	2	Y	Y	Y	Y	Y	Y
CE 284** Surveying	Y	1	N	0	Y	N	Y	N	Y	N
CE 321 Transportation Eng/Design	N	0	Y	1	N	Y	N	Y	N	Y
CE 370** Mechanics of Materials	Y	2	Y	2	E	Y	E	Y	E	Y
CE 372 Soil Mechanics	E	1	Y	1	E	Y	E	Y	E	Y
CE 373 Soil Mechanics Lab	E	2	Y	2	E	Y	E	Y	E	Y
CE 380** Civil Engineering Materials	E	1	Y	1	E	Y	E	Y	E	Y



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CE 381 Structural Analysis I	Y	1	N	0	Y	N	Y	N	Y	N
CE 411 Intro to Geo Info Systems	Y	1	N	0	Y	N	Y	N	Y	N
CE 412 Advanced CE Graphics	N	0	D	0	D	D	D	D	D	D
CE 420 Urban Trans Planning	Y	1	N	0	Y	N	Y	N	Y	N
CE 422 Traffic Engineering Design	N	0	Y	1	N	Y	N	Y	N	Y
CE 441 Hydraulic Engineering Design	N	0	Y	1	N	Y	N	Y	N	Y
CE 449 Intro to Environmental Eng	Y	1	N	0	Y	N	Y	N	Y	N
CE 456 Water Quality Ctrl Proc	N	0	Y	1	N	Y	N	Y	N	Y
CE 457 Hydrology	Y	1	N	0	Y	N	Y	N	Y	N
CE 458 Environmental Eng Design	N	0	D	0	D	D	D	D	D	D
CE 471 Advanced Soil Mechanics	N	0	D	0	D	D	D	D	D	D
CE 472 Soil Dynamics	N	0	D	0	D	D	D	D	D	D
CE 473 Earth Structures Eng	N	0	D	0	D	D	D	D	D	D



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CE 474 Applied Mechanics of Solids	N	0	D	0	D	D	D	D	D	D
CE 481 Structural Analysis II	N	0	Y	1	N	Y	N	Y	N	Y
CE 483 Reinforced Concrete Design	Y	1	N	0	Y	N	Y	N	Y	N
CE 484 Steel Design	Y	1	N	0	Y	N	Y	N	Y	N
CE 485 Foundation Engineering	N	0	Y	1	N	Y	N	Y	N	Y
CE 487 Bridge Design	N	0	Y	1	N	Y	N	Y	N	Y
CE 498 Civil Engineering Design I	Y	1	N	0	Y	N	Y	N	Y	N
CE 499** Civil Engineering Design II	N	0	Y	1	N	Y	N	Y	N	Y

Legend

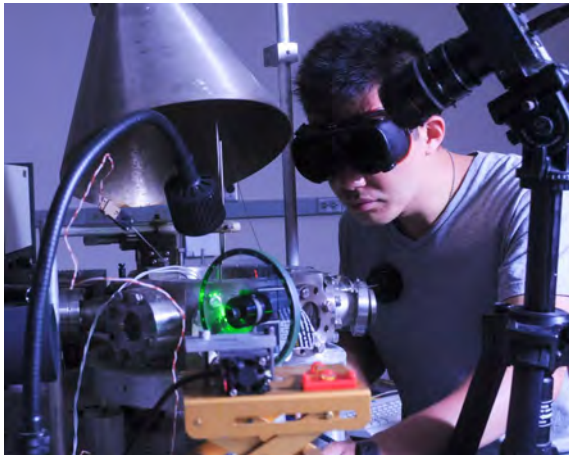
Y	Course will be offered in designated term.
E	Course will likely be offered in designated term, but availability will be determined by faculty availability and budget.
N	Course will not be offered in designated term.
D	Course may be made available given appropriate demand or interest.

* 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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Optical Engineering

Optical Engineers design and build devices that make like do something useful. Optical engineers advance technology by designing flat panel display systems, designing optical fiber communications, and designing laser systems for image processing and space propulsion. They also develop applications for nanotechnology and microelectric and mechanical systems (MEMS—tiny machines built on semiconductor chips). Optical

engineers will find employment in laboratories, hospitals, and universities to do research—producing breakthroughs with laser and other technology. Military and defense related firms will demand optical engineers to develop laser controlled weapon systems and improve MEMS technology.



Highlights

- Specialize in photonics, optical systems, and lasers.
- First accredited Optical Engineering program in the United States, est. 1991.
- Students work at NASA, AMRDEC, Dynetics, and other research facilities.
- Average median salary in 2012: \$84,676.



"Not only am I given challenging tasks, but I have also interacted with prominent employees, which has given me more determination to succeed. Co-Op has been a great experience and I would recommend it to anyone!"

Martez Taylor // Gadsden, Alabama
Junior, Electrical ENGINEERING

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Academic Checksheet



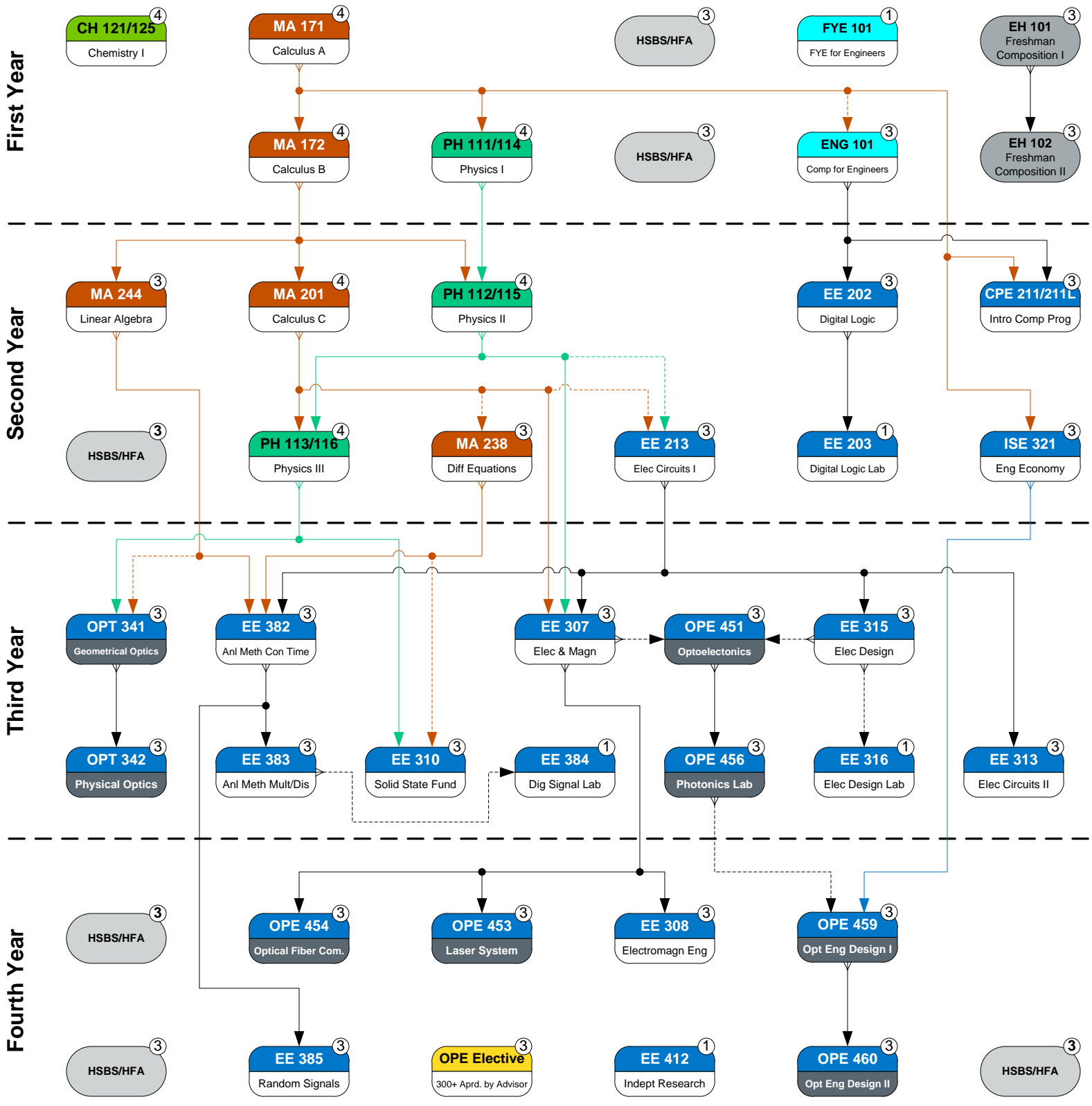
Optical Engineering 2015/2016 (129 Hours)

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
English - 6 hours						
		EH 101	3	Freshman Composition I	Placement	FSM
		EH 102	3	Freshman Composition II	EH 101	FSM
Mathematics - 18 hours						
		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
Chemistry - 4 hours						
		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
Physics - 12 hours						
		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
		PH 113	3	General Physics w/Calculus III	MA 201, PH 112, Coreq: 116	FSM
		PH 116	1	General Physics Lab III	Coreq: PH 113	FSM
History, Social & Behavioral Sciences, Humanities & Fine Arts - 18 hours						
			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: http://www.uah.edu/images/colleges/engineering/CUE2%20Files/Forms/HSBS_HFA_Requirements_05202014.pdf	FSM
			3	Sequence Course (HY or EH)		FSM
			3	HSBS/HFA		FSM
			3	HSBS/HFA		FSM
First-Year Engineering - 4 hours						
		FYE 101	1	First-Year Experience for Engineers	None	FS
		ENG 101	3	Computing for Engineers	Prereq w/Con: MA 171	SM
Optical Engineering Option - 61 hours						
**		CPE 211	3	Intro to Computer Programming in Engineering	ENG 101, MA 171	FSM
**		EE 202	3	Intro to Digital Logic Design	ENG 101	FSM
		EE 203	1	Digital Logic Design Lab	EE 202	FSM
		EE 213	3	Electrical Circuit Analysis I	Prereq w/Con: PH 112, MA 201	FSM
		EE 307	3	Electricity and Magnetism	PH 112, MA 201, EE 213	FSM
		EE 308	3	Electromagnetic Engineering	EE 307	FS
		EE 310	3	Solid State Fundamentals	PH 113, Prereq w/Con: MA 238	FS
		EE 313	3	Electrical Circuit Analysis II	EE 213	FSM
		EE 315	3	Introduction to Electronic Analysis and Design	EE 213	FSM
		EE 316	1	Electronic Measurements & Devices Design Lab	Prereq w/Con: EE 315	FS
		ISE 321	3	Engineering Economy	MA 171	FSM
		OPT 341	3	Geometrical Optics	PH 113, Prereq w/Con: (PH 305 or MA 244)	F
		OPT 342	3	Physical Optics	OPT 341	S
		EE 382	3	Analytical Meth for Continuous Time Sys	EE 213, MA 238, MA 244	FSM
		EE 383	3	Analytical Meth for Mult and Discr Time Sys	EE 382	FSM
		EE 384	1	Digital Signal Processing Laboratory	CPE 381 or Prereq w/Con:EE 383	FS
		EE 385	3	Random Signals and Noise	CPE 381 or EE 382	FSM
		EE 412	1	Independent Research	Senior Standing	FSM
		OPE 451	3	Optoelectronics	Prereq w/Con: EE 307, EE 315	F
		OPE 453	3	Laser Systems	EE 307	F
		OPE 454	3	Optical Fiber Communications	EE 307 or PH 432	F
		OPE 456	3	Photonics Lab	OPE 451	S
		OPE 459	3	Optical Engineering Design I	ISE 321, Prereq w/Con: OPE 456	F
		OPE 460	3	Optical Engineering Design II	OPE 459	S
Optical Engineering Elective - 3 hours						
			3		300+ Level course approved by advisor	

All prerequisite classes must be completed with a "C" or higher grade.
The Catalog is the final authority for all degree requirements.

Academic Flowchart

Optical Engineering 2015/2016 (129 Hours)



Legend
Updated: 5/6/15

Mathematics	First Year Engineering	Freshman Composition	Credit Hours
Physics	Optical Engineering Option	History, Social & Behavioral Science	Prerequisite
Chemistry / Biology	Engineering Elective	Offered only in semester listed	Prereq w/concurrency

Electrical and Computer 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
CPE 112** Intro to Comp Prog in Eng	Y	1	Y	1	N	N	N	N	N	N
CPE 211** Intro to Comp Prog in Eng	N	0	N	0	Y	Y	Y	Y	Y	Y
CPE 212 Fund of Software Eng	Y	1	Y	1	Y	Y	Y	Y	Y	Y
CPE 221 Computer Organization	Y	1	Y	1	Y	Y	Y	Y	Y	Y
CPE 322 Digital Hardware Design	N	0	Y	1	N	Y	N	Y	N	Y
CPE 323 Intro Embedded Comp Sys	Y	1	E	1	Y	E	Y	E	Y	E
CPE 324 Digital Hardware Des Lab	N	0	Y	4	N	Y	N	Y	N	Y
CPE 325 Embedded Comp Sys Lab	Y	5	E	6	Y	E	Y	E	Y	E
CPE 353 Software Design/Eng	Y	2	N	0	Y	N	Y	N	Y	N
CPE 381 Fund of Signals/Systems	Y	1	Y	1	E	Y	E	Y	E	Y
CPE 412 Intro to Parallel Prog	Y	1	N	0	Y	N	Y	N	Y	N



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CPE 423 Hardwr/Softwr Co-Design	Y	1	N	0	N	N	Y	N	N	N
CPE 426 Modeling/Synthesis	N	0	D	1	D	D	D	D	D	D
CPE 427** VLSI Design I	N	0	N	0	Y	N	N	N	Y	N
CPE 428** VLSI Design II	N	0	D	0	D	D	D	D	D	D
CPE 431 Intro to Comp Architecture	Y	2	N	0	Y	N	Y	N	Y	N
CPE 434 Operating Systems	Y	1	Y	0	N	Y	N	Y	N	Y
CPE 435 Operating Systems Lab	Y	2	Y	0	N	Y	N	Y	N	Y
CPE 436 Internals of Mod Oper Sys	N	0	N	0	N	Y	N	N	N	Y
CPE 438 Real Time/Embedded Sys	N	0	D	0	D	D	D	D	D	D
CPE 448 Intro to Comp Networks	Y	1	Y	1	E	Y	E	Y	E	Y
CPE 449** Intro to Info Assurance Eng	Y	1	N	0	Y	N	Y	N	Y	N
CPE 453 Senior Software Studio	N	0	Y	1	N	Y	N	Y	N	Y
CPE 495 Comp Eng Design I	Y	1	N	0	Y	N	Y	N	Y	N



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CPE 496 Comp Eng Design II	N	0	Y	2	N	Y	N	Y	N	Y
EE 100** Fund Elec/Comp/Opt Eng	Y	1	Y	1	N	N	N	N	N	N
EE 202 Intro to Digital Logic Des	Y	2	Y	2	Y	Y	Y	Y	Y	Y
EE 203 Digital Logic Design Lab	Y	3	Y	4	Y	Y	Y	Y	Y	Y
EE 213 Electrical Circuit Analysis I	Y	4	Y	4	Y	Y	Y	Y	Y	Y
EE 223 Design/Analysis using Comp	N	0	N	0	N	Y	Y	Y	Y	Y
EE 307 Electricity/Magnetism	Y	1	E	1	Y	E	Y	E	Y	E
EE 308 Electromagnetic Eng	Y	1	Y	1	E	Y	E	Y	E	Y
EE 310 Solid State Fundamentals	Y	1	E	1	Y	E	Y	E	Y	E
EE 313 Electrical Circuit Analysis II	Y	1	E	1	Y	E	D	D	D	D
EE 315 Intro Elec Analysis/Design	Y	1	E	1	Y	E	Y	E	Y	E
EE 316 Electronic Meas/Devices Design Lab	Y	5	Y	5	E	Y	E	Y	E	Y
EE 382 Analytical Meth Contin Time Sys	Y	1	E	1	Y	E	Y	E	Y	E



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EE 383 Analytical Meth Multi/Discr Time Sys	Y	1	Y	1	E	Y	E	Y	E	Y
EE 384 Digital Signal Processing Lab	Y	3	Y	2	E	Y	E	Y	E	Y
EE 385 Random Signals/Noise	Y	1	Y	1	E	Y	E	Y	E	Y
EE 386 Intro to Control/Robotic Systems	Y	1	Y	1	E	Y	E	Y	E	Y
EE 401 Digital Signal Proc Architectures	N	0	D	0	D	D	D	D	D	D
EE 411 Electric Power Systems	Y	1	Y	1	N	Y	N	Y	N	Y
EE 414 Analog and Digital Filter Design	N	0	Y	1	N	Y	N	Y	N	Y
EE 416 Electronics II	N	0	Y	1	N	Y	N	Y	N	Y
EE 423 Communication Sys/Simulation	Y	1	N	0	N	N	Y	N	N	N
EE 424 Intro to Data Comm Networks	Y	1	N	0	Y	N	Y	N	Y	N
EE 426 Communication Theory	N	0	Y	1	N	Y	N	Y	N	Y
EE 427** VLSI Design I	N	0	D	0	D	D	D	D	D	D
EE 428** VLSI Design II	N	0	D	0	D	D	D	D	D	D



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EE 436 Digital Electronics	Y	1	N	0	Y	N	Y	N	Y	N
EE 437 Electr Manufacturing Processes	N	0	N	0	N	N	N	N	N	N
EE 451 Optoelectronics	Y	1	N	0	Y	N	Y	N	Y	N
EE 453 Laser Systems	Y	1	N	0	Y	N	Y	N	Y	N
EE 454 Optical Fiber Communications	N	0	Y	1	N	Y	N	Y	N	Y
EE 486 Intro to Modern Control Systems	N	0	D	0	D	D	D	D	D	D
EE 494 EE Design Projects	Y	2	Y	2	E	Y	E	Y	E	Y
OPE 441 Optical Systems Design	N	0	D	0	D	D	D	D	D	D
OPE 442 Interference and Diffraction	N	0	D	0	D	D	D	D	D	D
OPE 451 Optoelectronics	Y	1	N	0	Y	N	Y	N	Y	N
OPE 453 Laser Systems	Y	1	N	0	Y	N	Y	N	Y	N
OPE 454 Optical Fiber Communications	N	0	Y	1	N	Y	N	Y	N	Y
OPE 456 Photonics Lab	N	0	Y	1	N	Y	N	Y	N	Y



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OPE 459 Optical Engineering Design I	Y	1	N	0	Y	N	Y	N	Y	N
OPE 460 Optical Engineering Design II	Y	1	Y	1	N	Y	N	Y	N	Y

Legend

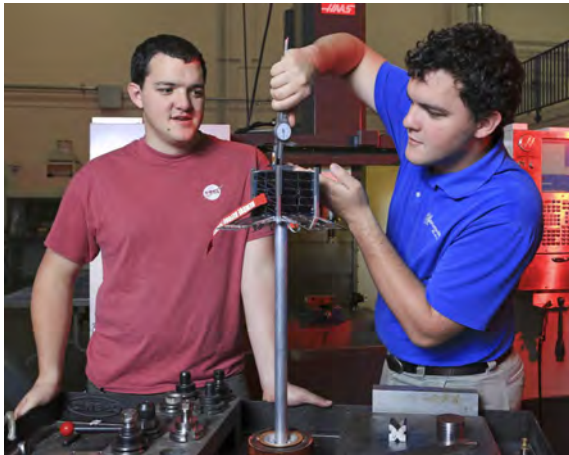
Y	Course will be offered in designated term.
E	Course will likely be offered in designated term, but availability will be determined by faculty availability and budget.
N	Course will not be offered in designated term.
D	Course may be made available given appropriate demand or interest.

* 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.



THE UNIVERSITY OF ALABAMA IN HUNTSVILLE



Mechanical Engineering

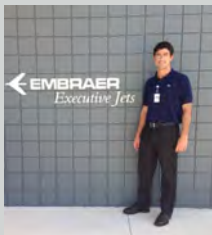
Mechanical Engineering is a broad field that traditionally comprises three primary subfields: energy, mechanisms and machinery, and manufacturing. The work done by mechanical engineers includes the designs, construction, and use of systems for the conservation of energy available from natural sources (water, fossil fuels, nuclear fuels, solar radiation) to other forms of useful energy (for transportation, heat, light,

power). Mechanical engineers also engage in the design and production of machines to lighten the burden of servile human work and to do work otherwise beyond human capability. They process materials into useful products with creative planning, developing, and operation of systems using energy, machines, and resources.



Highlights

- Huntsville, Alabama has the #9 concentration of mechanical engineering jobs in the United States.
- College of Engineering's largest program.
- Students co-op with BMW Manufacturing, EMBRAER Jets, Northrop Grumman, and many more.
- Average median salary in 2012: \$80,580.



"This opportunity at Embraer enriched my academic experience. I am proud to have chosen to study engineering. After all as the company motto says: 'Global Presence is our Frontier!'"

Bruno Frietas de Medeiros // Sao Jose Dos Campos , Brazil
Senior, Mechanical ENGINEERING

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Academic Checksheet



Mechanical Engineering 2015/2016 (128 Hours)

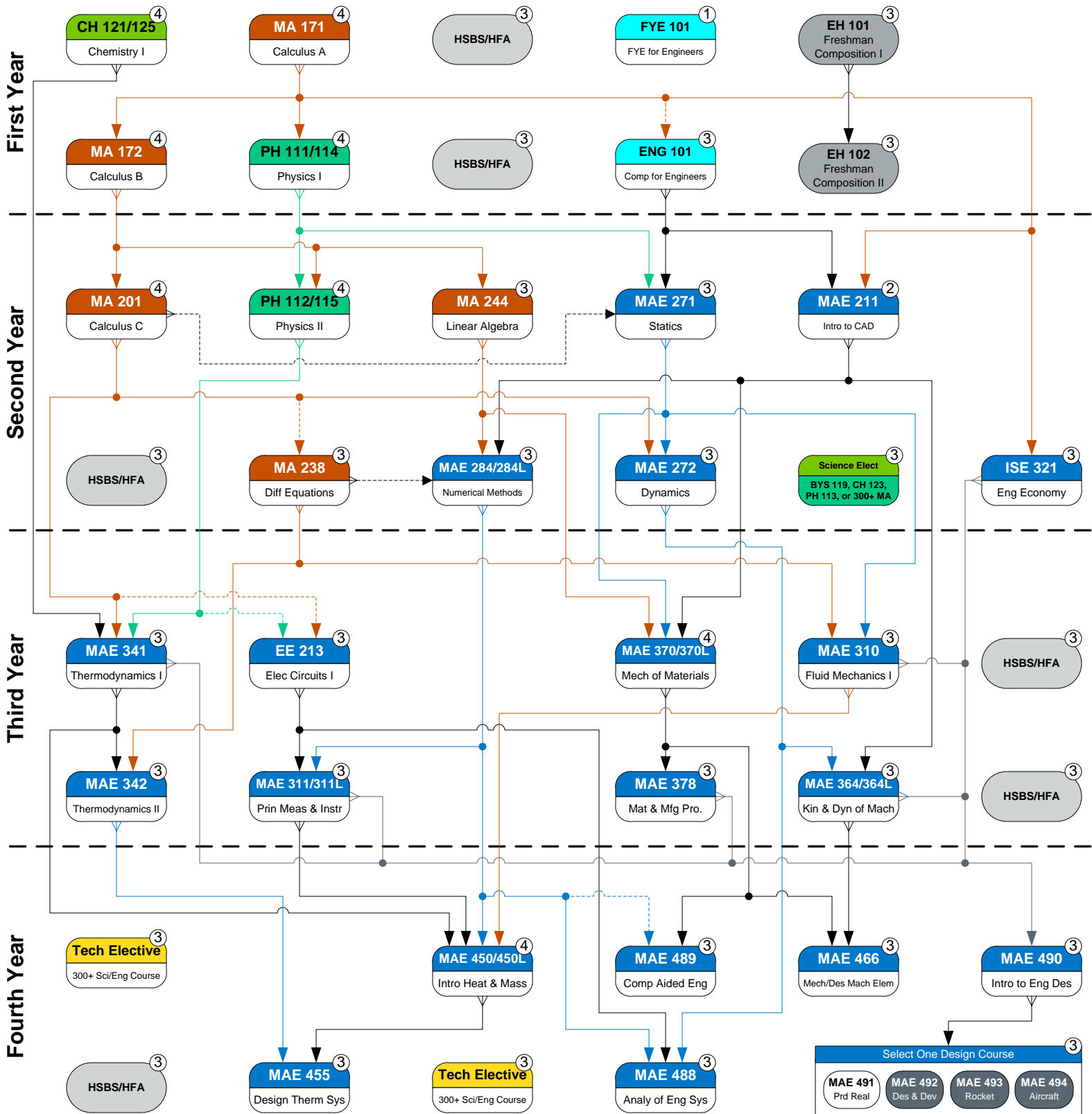
Student A#				Student Name (Last, First MI)		Offered:
Semester, Transfer or AP	Grade	Course Number	Cr Hrs	Course Title	Prerequisites, Corequisites and/or Prerequisites with Concurrency	F=Fall S=Spr M=Sum
English - 6 hours						
		EH 101	3	Freshman Composition I	Placement	FSM
		EH 102	3	Freshman Composition II	EH 101	FSM
Mathematics - 18 hours						
		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
Chemistry - 4 hours						
		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
Physics - 8 hours						
		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
Science Elective - 3 or 4 hours						
			3		BYS 119, CH 123, PH 113, or 300/400 MA course	FSM
History, Social & Behavioral Sciences, Humanities & Fine Arts - 18 hours						
			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: http://www.uah.edu/images/colleges/engineering/CUE2%20Files/Forms/HSBS_HFA_Requirements_05202014.pdf	FSM
			3	Sequence Course (HY or EH)		FSM
			3	HSBS/HFA		FSM
First-Year Engineering - 4 hours						
		FYE 101	1	First-Year Experience for Engineers	None	FS
		ENG 101	3	Computing for Engineers	Prereq w/Con: MA 171	SM
**	Class has required lab section			Mechanical Engineering Option - 61 hours		
		MAE 211	2	Introduction to Computer Aided Design	ENG 101, MA 171	FSM
		EE 213	3	Electrical Circuit Analysis I	Prereq w/Con: PH 112, MA 201	FSM
		MAE 271	3	Statics	ENG 101, PH 111, Prereq w/Con: MA 201	FSM
		MAE 272	3	Dynamics	MA 201, MAE/CE 271	FSM
**		MAE 284	3	Numerical Methods	MA 244, MAE 211; Prereq w/Con: MA 238 & Coreq: MAE 284L	FSM
		ISE 321	3	Engineering Economy	MA 171	FSM
		MAE 310	3	Fluid Mechanics I	MA 238, MAE/CE 271	FSM
**		MAE 311	3	Principles of Measurement & Instrumentation	EE 213, MAE 284; Coreq MAE 311L	FSM
		MAE 341	3	Thermodynamics I	MA 201, CH 121, CH 125, PH 112	FSM
		MAE 342	3	Thermodynamics II	MA 238, MAE 341	FSM
**		MAE 364	3	Kinematics & Dynamics of Machines	MAE 211, MAE 272; Coreq MAE 364L	FS
**		MAE 370	4	Mechanics of Materials	MAE/CE 271, MA 244 & (MAE 211 or CE 111), Coreq: MAE 370L	FSM
		MAE 378	3	Materials & Manufacturing Processes	MAE/CE 370	FSM
**		MAE 450	4	Intro to Heat and Mass Transfer	MAE 284, MAE 311, MAE 341 & (MAE 310 or MAE 330); Coreq: MAE 450L	FS
		MAE 455	3	Design of Thermal Systems	MAE 342, MAE 450, Recommended: MAE 490	SM
		MAE 466	3	Mechanics & Design of Machine Elements	MAE 364, MAE/CE 370	FM
		MAE 488	3	Analysis of Engineering Systems	EE 213, MAE/CE 272, MAE 284	FSM
		MAE 489	3	Computer-Aided Engineering Analysis	MAE/CE 370; Prereq w/Con: MAE 284	FS
		MAE 490	3	Intro to Engineering Design	ISE 321 & MAE 311, 341 & (MAE 310, 364, & 378) or (MAE 330, 343, & 371)	FSM
Select One		MAE 491	3	Product Realization	MAE 490 & Senior Standing	FS
		MAE 492	3	Mission Design & Development	MAE 490 & Senior Standing	S
		MAE 493	3	Rocket Design	MAE 490 & Senior Standing	S
		MAE 494	3	Aircraft Design	MAE 490 & Senior Standing	S
Technical Elective - 6 hours						
			3		300+ Level Science or Engineering course	
			3		May not take both MA 385 & ISE 390, or MAE 343 for credit	

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

The Catalog is the final authority for all degree requirements.

Academic Flowchart

Mechanical Engineering 2015/2016 (128 Hours)



Legend
Updated: 5/7/15

Mathematics	First-Year Engineering	Freshman Composition	Credit Hours
Physics	Mechanical Engineering Option	History, Social & Behavioral Science Humanity & Fine Art	Prerequisite
Chemistry / Biology	Technical Elective	Offered only in semester listed	Prereq w/concurrency

Mechanical and Aerospace 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
MAE 100 ** Intro to Mech Eng	Y	1	N	0	N	N	N	N	N	N
MAE 111 Intro to Comp Tools	Y	2	Y	2	N	N	N	N	N	N
MAE 115 Machining	Y	2	Y	2	Y	Y	Y	Y	Y	Y
MAE 200 Principles of Aero/Astro	Y	1	Y	1	Y	Y	Y	Y	Y	Y
MAE 211 Intro to Comp Tools	N	0	N	0	Y	Y	Y	Y	Y	Y
MAE 271 Statics	Y	4	Y	3	Y	Y	Y	Y	Y	Y
MAE 272 Dynamics	Y	2	Y	2	Y	Y	Y	Y	Y	Y
MAE 284 ** Numerical Methods	Y	1	Y	1	Y	Y	Y	Y	Y	Y
MAE 310 Fluid Mechanics I	Y	2	E	2	Y	E	Y	E	Y	E
MAE 311 ** Prin of Measurement/Instr	E	1	Y	1	E	Y	E	Y	E	Y
MAE 330 Fund of Aerodynamics	N	0	N	0	Y	N	Y	N	Y	N



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MAE 341 Thermodynamics I	Y	3	E	3	Y	E	Y	E	Y	E
MAE 342 Thermodynamics II	E	1	Y	1	E	Y	E	Y	E	Y
MAE 343 Compress. Aerodynamics	N	0	N	0	N	Y	N	Y	N	Y
MAE 364 ** Kinematics/Dyn of Mach	E	2	Y	2	E	Y	E	Y	E	Y
MAE 370 ** Mechanics of Materials	Y	2	Y	2	Y	Y	Y	Y	Y	Y
MAE 371 Aerospace Structures	Y	1	E	1	Y	E	Y	E	Y	E
MAE 378 Materials/Manuf Processes	E	1	Y	1	E	Y	E	Y	E	Y
MAE 420 Compress. Aerodynamics	N	0	Y	1	N	N	N	N	N	N
MAE 430 Fund of Aerodynamics	Y	1	N	0	N	N	N	N	N	N
MAE 440 Rocket Propulsion I	Y	1	N	0	Y	N	Y	N	Y	N
MAE 441 Airbreathing Propulsion	Y	1	N	0	Y	N	Y	N	Y	N
MAE 450 ** Intro to Heat/ Mass Transfer	Y	2	E	2	Y	E	Y	E	Y	E
MAE 455 Design of Thermal Systems	N	0	Y	1	N	Y	N	Y	N	Y



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MAE 461 Vibrations of Elastic Sys	Y	1	D	0	D	D	D	D	D	D
MAE 463 Intermediate Dynamics	N	0	D	0	D	D	D	D	D	D
MAE 466 Mech/Design of Mach Elmts	Y	1	N	0	Y	N	Y	N	Y	N
MAE 468 Spacecraft Design	Y	1	Y	1	E	Y	E	Y	E	Y
MAE 471 Adv Aerospace Structures	Y	1	Y	1	E	Y	E	Y	E	Y
MAE 474 Appl Mechanics of Solids	N	0	D	0	D	D	D	D	D	D
MAE 476 Mech/Fab of Compos Mats	N	0	D	0	D	D	D	D	D	D
MAE 477 Exp Tech in Solid Mech	N	0	D	0	D	D	D	D	D	D
MAE 480 Aircraft Stability/Control	Y	1	E	1	Y	E	Y	E	Y	E
MAE 488 Analysis of Eng Systems	Y	2	Y	1	E	Y	E	Y	E	Y
MAE 489 Comp-Aided Eng Analysis	Y	1	E	2	Y	E	Y	E	Y	E
MAE 490 Intro to Eng Design	Y	4	E	2	Y	E	Y	E	Y	E
MAE 491 Product Realization	Y	1	Y	1	E	Y	E	Y	E	Y



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MAE 492 Mission Dev/Design	Y	1	Y	1	E	Y	E	Y	E	Y
MAE 493 Rocket Design	N	0	Y	1	N	Y	N	Y	N	Y
MAE 494 Aircraft Design	N	0	Y	1	N	Y	N	Y	N	Y

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.



THE UNIVERSITY OF
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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

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Academic Checksheet

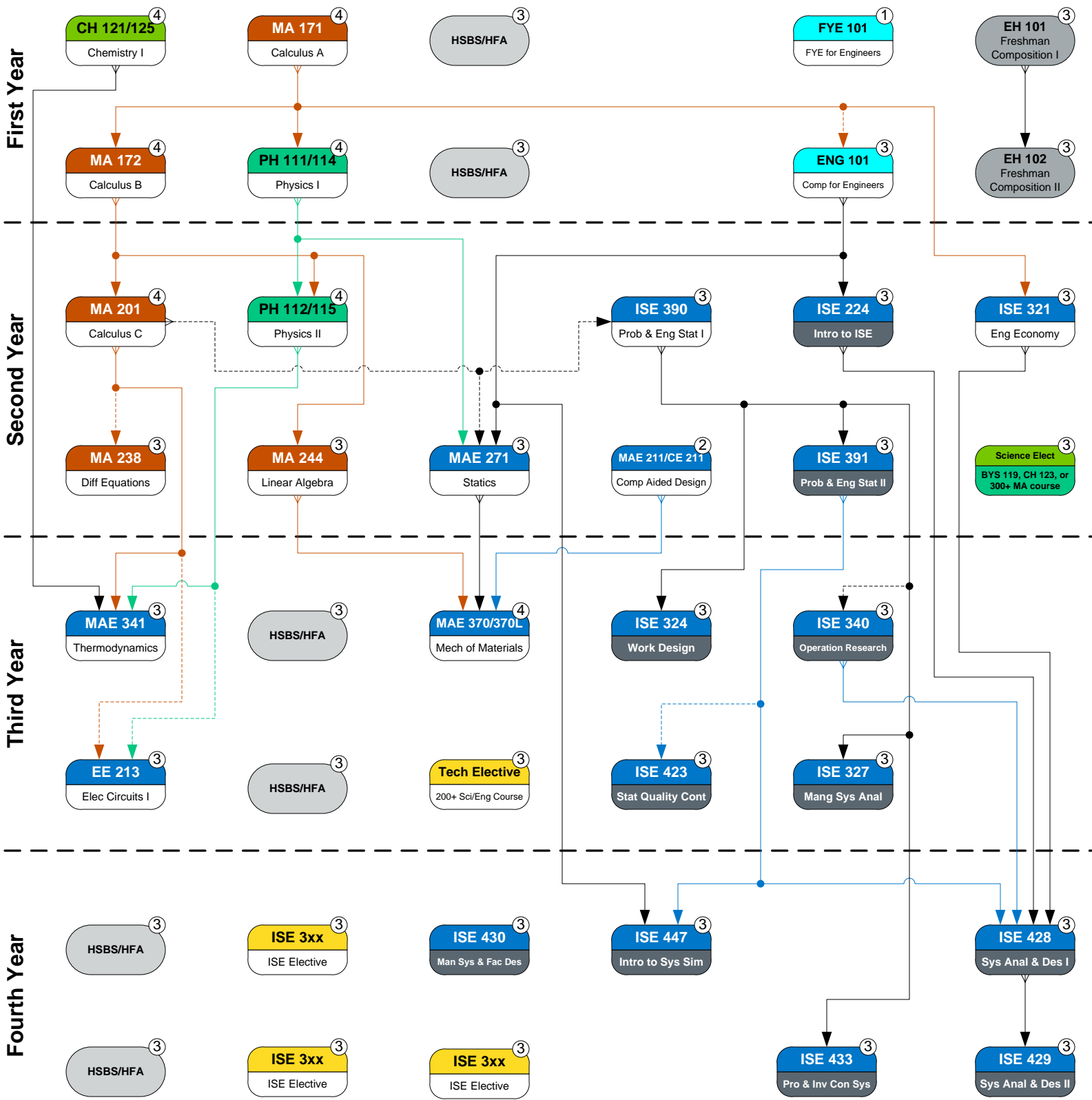


Industrial & Systems Engineering 2015/2016 (127 Hours)

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
English - 6 hours							
		EH 101	3	Freshman Composition I	Placement		FSM
		EH 102	3	Freshman Composition II	EH 101		FSM
Mathematics - 18 hours							
		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
Chemistry - 4 hours							
		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
Physics - 8 hours							
		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
Science Elective - 3 hours							
			3		BYS 119, CH 123, PH 113, or 300/400 MA course		
History, Social & Behavioral Sciences, Humanities & Fine Arts - 18 hours							
			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: http://www.uah.edu/images/colleges/engineering/CUE2%20Files/Forms/HSBS_HFA_Requirements_05202014.pdf		FSM
			3	Sequence Course (HY or EH)			FSM
			3	HSBS/HFA			FSM
First-Year Engineering - 4 hours							
		FYE 101	1	First-Year Experience for Engineers	None		FS
		ENG 101	3	Computing for Engineers	Prereq w/Con: MA 171		SM
**	Class has required lab section			Industrial & System Engineering Option - 54 hours			
		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
Industrial & Systems Engineering Electives - 9 hours							
			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.			
Technical Elective - 3 hours							
			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



Legend 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
ISE 124 Intro to ISE	Y	1	N	0	N	N	N	N	N	N
ISE 224 Intro to ISE	N	0	N	0	Y	N	Y	N	Y	N
ISE 321 Engineering Economy	Y	1	E	1	Y	E	Y	E	Y	E
ISE 324 Work Design	Y	1	N	0	Y	N	Y	N	Y	N
ISE 327 Management Sys Analysis	N	0	Y	1	N	Y	N	Y	N	Y
ISE 340 Operations Research	Y	1	N	0	Y	N	Y	N	Y	N
ISE 390 Probability/Eng Statistics I	Y	2	E	2	Y	E	Y	E	Y	E
ISE 391 Probability/Eng Statistics II	N	0	Y	1	N	Y	N	Y	N	Y
ISE 402 Industrial/Org Psychology	Y	1	N	0	Y	N	Y	N	Y	N
ISE 403 Human Factors Psychology	N	0	Y	1	N	Y	N	Y	N	Y
ISE 423 Statistical Quality Control	N	0	Y	1	N	Y	N	Y	N	Y



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ISE 426 Design/Analysis of Exper	N	0	Y	1	N	Y	N	Y	N	Y
ISE 428 Systems Analysis/Design I	Y	1	N	0	Y	N	Y	N	Y	N
ISE 429 Systems Analysis/Design II	Y	1	Y	1	N	Y	N	Y	N	Y
ISE 430 Manuf Sys/Facilities Des	Y	1	N	0	Y	N	Y	N	Y	N
ISE 433 Prodn/Inventory Cntrl Sys	N	0	Y	1	N	Y	N	Y	N	Y
ISE 437 Electronics Manufacturing	N	0	N	0	D	D	D	D	D	D
ISE 447 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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Electrical Engineering

Electrical Engineers design, develop, and supervise the manufacturing of electrical and electronic equipment. Some of the areas include designing power systems for factories, designing communication networks for voice, data, and pictures, alternative energy sources, designing microprocessors, designing ground-based radar systems, improving semiconductor manufacturing processes, and designing broadcast and wireless

communication systems. Electrical engineers are responsible for development of a wide range of technologies, from portable music players to global positioning systems (GPS). Electrical engineers also test equipment, solve operating problems, and estimate the time and cost of engineering projects.



Highlights

- Huntsville, Alabama has the #2 concentration of Electrical Engineering jobs in the United States.
- NSF and local company sponsored labs.
- Students co-op at Boeing, Raytheon, Mercedes-Benz US International, and many more.
- Average median salary in 2012: \$89,630.



"I hope everyone at Synapse knows how grateful I am to be there. Not only am I surrounded by people who are extraordinary engineers, but these same people have also become my role models, my teachers, and my friends."

Ashley Monroe // Madison, Alabama
Senior, **ELECTRICAL ENGINEERING**

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Academic Checksheet



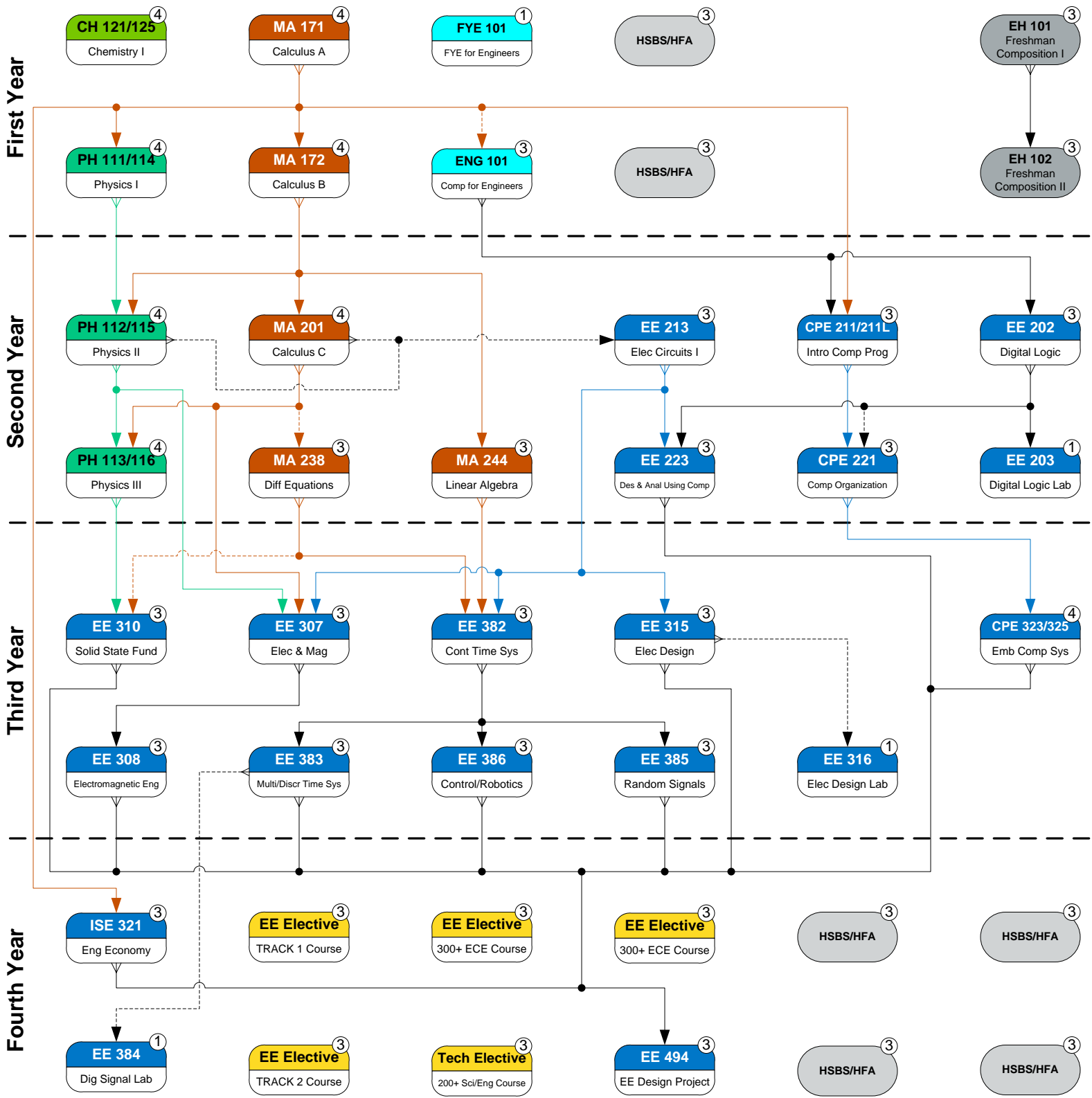
Electrical Engineering 2015/2016 (129 Hours)

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
English - 6 hours						
		EH 101	3	Freshman Composition I	Placement	FSM
		EH 102	3	Freshman Composition II	EH 101	FSM
Mathematics - 18 hours						
		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
Chemistry - 4 hours						
		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
Physics - 12 hours						
		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
		PH 113	3	General Physics w/Calculus III	MA 201, PH 112, Coreq: 116	FSM
		PH 116	1	General Physics Lab III	Coreq: PH 113	FSM
History, Social & Behavioral Sciences, Humanities & Fine Arts - 18 hours						
			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: http://www.uah.edu/images/colleges/engineering/CUE2%20Files/Forms/HSBS_HFA_Requirements_05202014.pdf	FSM
			3	Sequence Course (HY or EH)		FSM
			3	HSBS/HFA		FSM
			3			FSM
First-Year Engineering - 4 hours						
		FYE 101	1	First-Year Experience for Engineers	None	FS
		ENG 101	3	Computing for Engineers	Prereq w/Con: MA 171	SM
**	Class has required lab section			Electrical Engineering Option - 52 hours		
		EE 202	3	Intro to Digital Logic Design	ENG 101	FSM
		EE 203	1	Digital Logic Design Lab	EE 202	FSM
**		CPE 211	3	Intro to Computer Programming in Engineering	ENG 101, MA 171	FSM
		EE 213	3	Electrical Circuit Analysis I	Prereq w/Con: PH 112, MA 201	FSM
		CPE 221	3	Computer Organization	CPE 211, Prereq w/Con: EE 202	FSM
		EE 223	3	Design and Analysis using Computing	EE 202, EE 213	FS
		EE 307	3	Electricity and Magnetism	PH 112, MA 201, EE 213	FSM
		EE 308	3	Electromagnetic Engineering	EE 307	FS
		EE 310	3	Solid State Fundamentals	PH 113, Prereq w/Con: MA 238	FS
		EE 315	3	Introduction to Electronic Analysis and Design	EE 213	FSM
		EE 316	1	Electronic Measurements & Devices Design Lab	Prereq w/Con: EE 315	FS
		ISE 321	3	Engineering Economy	MA 171	FSM
		CPE 323	3	Intro to Embedded Computer Systems	CPE 221, Coreq: CPE 325	FS
		CPE 325	1	Lab Component of Intro of CE 323	Coreq: CPE 323	FS
		EE 382	3	Analytical Meth for Continuous Time Sys	EE 213, MA 238, MA 244	FSM
		EE 383	3	Analytical Meth for Mult and Discr Time Sys	EE 382	FSM
		EE 384	1	Digital Signal Processing Laboratory	CPE 381 or Prereq w/Con: EE 383	FS
		EE 385	3	Random Signals and Noise	CPE 381 or EE 382	FSM
		EE 386	3	Introduction to Control and Robotic Systems	CPE 381 or EE 382	FSM
		EE 494	3	EE Design Projects	EE 223, EE 308, EE 310, EE 315, EE 383, EE 385, EE 386, CPE 323, ISE 321	FS
Electrical Engineering Electives - 12 hours						
			3	T1	Track: _____	
			3	T2	(Must take a 2 course track in one area.)	
			3		300+ Level ECE course	
			3		300+ Level ECE course (May take CPE 212 for credit)	
Technical Elective - 3 hours						
			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

Electrical Engineering 2015/2016 (129 Hours)



Legend Updated: 5/7/15	Mathematics	First-Year Engineering	Freshman Composition	Credit Hours
	Physics	Electrical Engineering Option	History, Social & Behavioral Science Humanity & Fine Art	Prerequisite
	Chemistry	Engineering Electives		Prereq w/concurrency

Electrical and Computer 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
CPE 112** Intro to Comp Prog in Eng	Y	1	Y	1	N	N	N	N	N	N
CPE 211** Intro to Comp Prog in Eng	N	0	N	0	Y	Y	Y	Y	Y	Y
CPE 212 Fund of Software Eng	Y	1	Y	1	Y	Y	Y	Y	Y	Y
CPE 221 Computer Organization	Y	1	Y	1	Y	Y	Y	Y	Y	Y
CPE 322 Digital Hardware Design	N	0	Y	1	N	Y	N	Y	N	Y
CPE 323 Intro Embedded Comp Sys	Y	1	E	1	Y	E	Y	E	Y	E
CPE 324 Digital Hardware Des Lab	N	0	Y	4	N	Y	N	Y	N	Y
CPE 325 Embedded Comp Sys Lab	Y	5	E	6	Y	E	Y	E	Y	E
CPE 353 Software Design/Eng	Y	2	N	0	Y	N	Y	N	Y	N
CPE 381 Fund of Signals/Systems	Y	1	Y	1	E	Y	E	Y	E	Y
CPE 412 Intro to Parallel Prog	Y	1	N	0	Y	N	Y	N	Y	N



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CPE 423 Hardwr/Softwr Co-Design	Y	1	N	0	N	N	Y	N	N	N
CPE 426 Modeling/Synthesis	N	0	D	1	D	D	D	D	D	D
CPE 427** VLSI Design I	N	0	N	0	Y	N	N	N	Y	N
CPE 428** VLSI Design II	N	0	D	0	D	D	D	D	D	D
CPE 431 Intro to Comp Architecture	Y	2	N	0	Y	N	Y	N	Y	N
CPE 434 Operating Systems	Y	1	Y	0	N	Y	N	Y	N	Y
CPE 435 Operating Systems Lab	Y	2	Y	0	N	Y	N	Y	N	Y
CPE 436 Internals of Mod Oper Sys	N	0	N	0	N	Y	N	N	N	Y
CPE 438 Real Time/Embedded Sys	N	0	D	0	D	D	D	D	D	D
CPE 448 Intro to Comp Networks	Y	1	Y	1	E	Y	E	Y	E	Y
CPE 449** Intro to Info Assurance Eng	Y	1	N	0	Y	N	Y	N	Y	N
CPE 453 Senior Software Studio	N	0	Y	1	N	Y	N	Y	N	Y
CPE 495 Comp Eng Design I	Y	1	N	0	Y	N	Y	N	Y	N



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CPE 496 Comp Eng Design II	N	0	Y	2	N	Y	N	Y	N	Y
EE 100** Fund Elec/Comp/Opt Eng	Y	1	Y	1	N	N	N	N	N	N
EE 202 Intro to Digital Logic Des	Y	2	Y	2	Y	Y	Y	Y	Y	Y
EE 203 Digital Logic Design Lab	Y	3	Y	4	Y	Y	Y	Y	Y	Y
EE 213 Electrical Circuit Analysis I	Y	4	Y	4	Y	Y	Y	Y	Y	Y
EE 223 Design/Analysis using Comp	N	0	N	0	N	Y	Y	Y	Y	Y
EE 307 Electricity/Magnetism	Y	1	E	1	Y	E	Y	E	Y	E
EE 308 Electromagnetic Eng	Y	1	Y	1	E	Y	E	Y	E	Y
EE 310 Solid State Fundamentals	Y	1	E	1	Y	E	Y	E	Y	E
EE 313 Electrical Circuit Analysis II	Y	1	E	1	Y	E	D	D	D	D
EE 315 Intro Elec Analysis/Design	Y	1	E	1	Y	E	Y	E	Y	E
EE 316 Electronic Meas/Devices Design Lab	Y	5	Y	5	E	Y	E	Y	E	Y
EE 382 Analytical Meth Contin Time Sys	Y	1	E	1	Y	E	Y	E	Y	E



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EE 383 Analytical Meth Multi/Discr Time Sys	Y	1	Y	1	E	Y	E	Y	E	Y
EE 384 Digital Signal Processing Lab	Y	3	Y	2	E	Y	E	Y	E	Y
EE 385 Random Signals/Noise	Y	1	Y	1	E	Y	E	Y	E	Y
EE 386 Intro to Control/Robotic Systems	Y	1	Y	1	E	Y	E	Y	E	Y
EE 401 Digital Signal Proc Architectures	N	0	D	0	D	D	D	D	D	D
EE 411 Electric Power Systems	Y	1	Y	1	N	Y	N	Y	N	Y
EE 414 Analog and Digital Filter Design	N	0	Y	1	N	Y	N	Y	N	Y
EE 416 Electronics II	N	0	Y	1	N	Y	N	Y	N	Y
EE 423 Communication Sys/Simulation	Y	1	N	0	N	N	Y	N	N	N
EE 424 Intro to Data Comm Networks	Y	1	N	0	Y	N	Y	N	Y	N
EE 426 Communication Theory	N	0	Y	1	N	Y	N	Y	N	Y
EE 427** VLSI Design I	N	0	D	0	D	D	D	D	D	D
EE 428** VLSI Design II	N	0	D	0	D	D	D	D	D	D



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EE 436 Digital Electronics	Y	1	N	0	Y	N	Y	N	Y	N
EE 437 Electr Manufacturing Processes	N	0	N	0	N	N	N	N	N	N
EE 451 Optoelectronics	Y	1	N	0	Y	N	Y	N	Y	N
EE 453 Laser Systems	Y	1	N	0	Y	N	Y	N	Y	N
EE 454 Optical Fiber Communications	N	0	Y	1	N	Y	N	Y	N	Y
EE 486 Intro to Modern Control Systems	N	0	D	0	D	D	D	D	D	D
EE 494 EE Design Projects	Y	2	Y	2	E	Y	E	Y	E	Y
OPE 441 Optical Systems Design	N	0	D	0	D	D	D	D	D	D
OPE 442 Interference and Diffraction	N	0	D	0	D	D	D	D	D	D
OPE 451 Optoelectronics	Y	1	N	0	Y	N	Y	N	Y	N
OPE 453 Laser Systems	Y	1	N	0	Y	N	Y	N	Y	N
OPE 454 Optical Fiber Communications	N	0	Y	1	N	Y	N	Y	N	Y
OPE 456 Photonics Lab	N	0	Y	1	N	Y	N	Y	N	Y



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OPE 459 Optical Engineering Design I	Y	1	N	0	Y	N	Y	N	Y	N
OPE 460 Optical Engineering Design II	Y	1	Y	1	N	Y	N	Y	N	Y

Legend

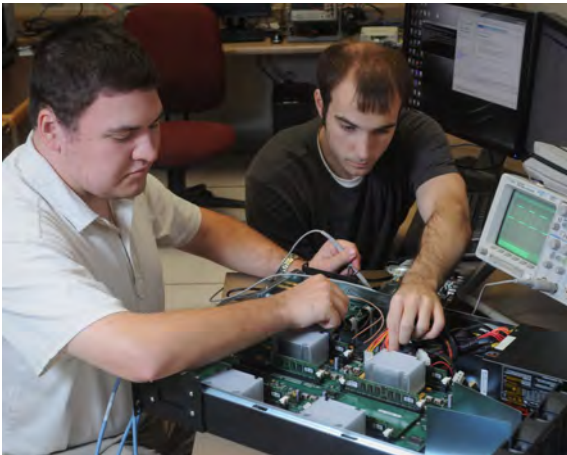
Y	Course will be offered in designated term.
E	Course will likely be offered in designated term, but availability will be determined by faculty availability and budget.
N	Course will not be offered in designated term.
D	Course may be made available given appropriate demand or interest.

* 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.



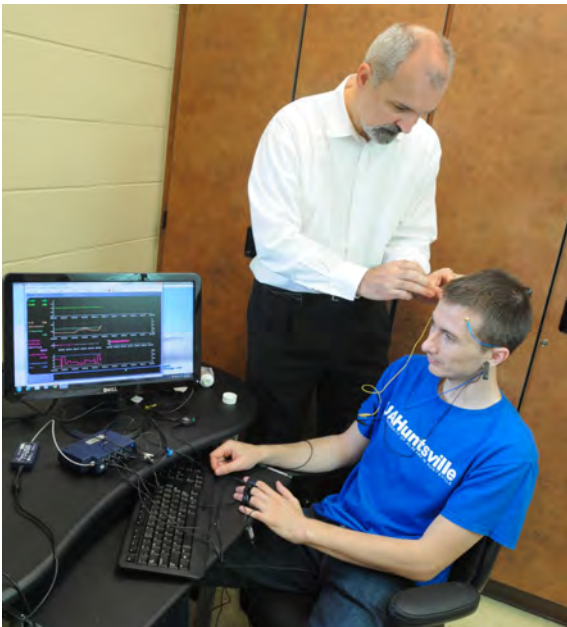
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Computer Engineering

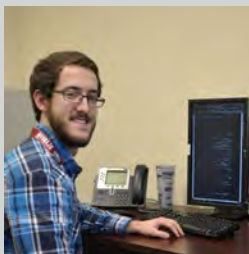
Computer Engineers design systems which have both hardware and software components. Computer hardware engineers research, design, develop, test, and oversee the manufacture and installation of computer hardware including computer chips, circuit boards, keyboards, router, and printers. They also develop circuit boards for use in commercial, military, and space applications. Computer software engineers develop

graphical user interfaces, write simulation software, develop parallel processing algorithms, design new data-compression devices, and work in multimedia to name some examples.



Highlights

- Huntsville, Alabama has the #5 concentration of Computer Engineering jobs in the United States.
- Program feature both hardware and software design.
- Students co-op with ADTRAN, Lockheed Martin, Missile Defense Agency, and many more.
- Average median salary in 2012: \$100,920.



"Because I work part-time while taking classes at UAH, I have literally been able to learn something new at school and then apply it the next day at work. Similarly, my work experience has not only given me a stronger appreciation for my coursework, but also has allowed me to develop engineering skills that I will continue to use for the rest of my life."

Caleb Stewart // Madison, Alabama
Senior, Computer ENGINEERING

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Academic Checksheet



Computer Engineering 2015/2016 (129 Hours)

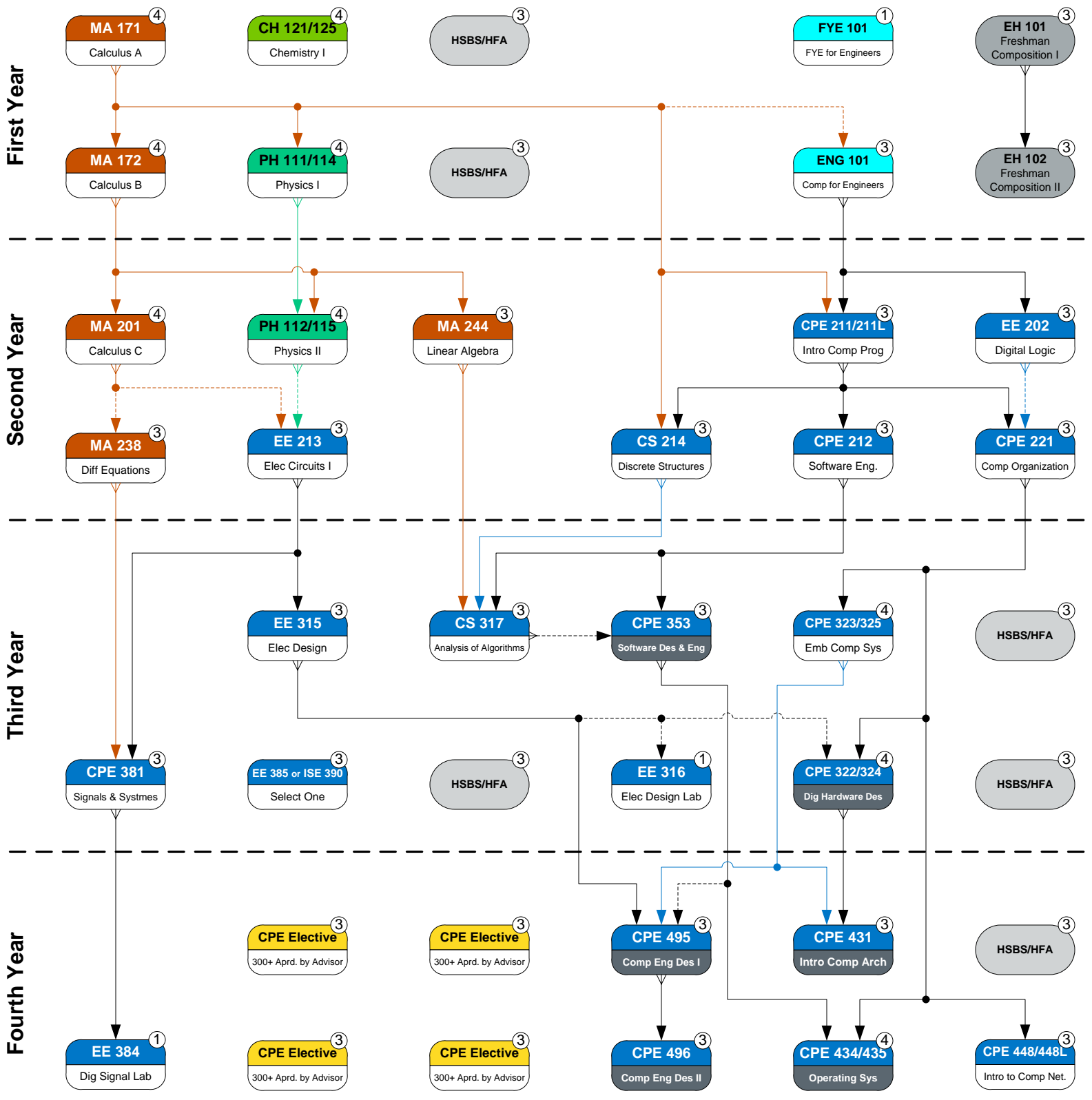
Student A#				Student Name (Last, First MI)			Offered:
Semester, Transfer or AP	Grade	Course Number	Cr Hrs	Course Title	Prerequisites, Corequisites and/or Prerequisites with Concurrency		F=Fall S=Spr M=Sum
English - 6 hours							
		EH 101	3	Freshman Composition I	Placement		FSM
		EH 102	3	Freshman Composition II	EH 101		FSM
Mathematics - 18 hours							
		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
Chemistry - 4 hours							
		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
Physics - 8 hours							
		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
History, Social & Behavioral Sciences, Humanities & Fine Arts - 18 hours							
			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: http://www.uah.edu/images/colleges/engineering/CUE2%20Files/Forms/HSBS_HFA_Requirements_05202014.pdf		FSM
			3	Sequence Course (HY or EH)			FSM
			3	HSBS/HFA			FSM
Computer Science - 6 hours							
		CS 214	3	Intro to Discrete Structures	MA 171, CPE 211		FSM
		CS 317	3	Design & Analysis of Algorithms	CS 214, CPE 212, MA 244		FSM
First-Year Engineering - 4 hours							
		FYE 101	1	First-Year Experience for Engineers	None		FS
		ENG 101	3	Computing for Engineers	Prereq w/Con: MA 171		SM
**	Class has required lab section			Computer Engineering Option - 53 hours			
		EE 202	3	Intro to Digital Logic Design	ENG 101		FSM
**		CPE 211	3	Intro to Computer Programming in Engineering	ENG 101, MA 171		FSM
		CPE 212	3	Fundamentals of Software Engineering	CPE 211		FS
		EE 213	3	Electrical Circuit Analysis I	Prereq w/Con: PH 112, MA 201		FSM
		CPE 221	3	Computer Organization	CPE 211, Prereq w/Con: EE 202		FSM
		EE 315	3	Introduction to Electronic Analysis and Design	EE 213		FSM
		EE 316	1	Electronic Measurements & Devices Design Lab	Prereq w/Con: EE 315		FS
		CPE 322	3	Digital Hardware Design Fundamentals	CPE 221, Prereq w/Con: EE 315, Coreq: CPE 324		S
		CPE 324	1	Digital Hardware Design Lab	Coreq: CPE 322		S
		CPE 323	3	Intro to Embedded Computer Systems	CPE 221, Coreq: CPE 325		FS
		CPE 325	1	Lab Component of Intro of CE 323	Coreq: CPE 323		FS
		CPE 353	3	Software Design & Engineering	CPE 212, Prereq w/Con: CS 317		F
		CPE 381	3	Fundamentals of Signals & Sys for Comp Engrs	EE 213, MA 238		FS
		EE 384	1	Digital Signal Processing Laboratory	CPE 381 or Prereq w/Con:EE 383		FS
Select One		EE 385	3	Random Signals and Noise	CPE 381 or EE 382		FSM
		ISE 390	3	Probability & Engineering Statistics I	Prereq w/Con: MA 201		FSM
		CPE 431	3	Intro to Computer Architecture	CPE 322, CPE 323		F
		CPE 434	3	Operating Systems	CPE 221, CPE 353, Coreq: CPE 435		S
		CPE 435	1	Operating Systems Lab	Coreq: CPE 434		S
**		CPE 448	3	Introduction to Computer Networks	CPE 221, Coreq: CPE 448L		FS
		CPE 495	3	Computer Engineering Design I	EE 315, CPE 323, Prereq w/Con: CPE 353		F
		CPE 496	3	Computer Engineering Design II	CPE 495		S
Computer Engineering Electives - 12 hours							
			3		300+ Level course approved by advisor		
			3		List of Approved CPE Electives:		
			3		http://www.uah.edu/images/colleges/engineering/CUE2%20Files/Forms/CPE-Electives_20150415.pdf		
			3				

All prerequisite classes must be completed with a "C-" or higher grade.
The Catalog is the final authority for all degree requirements.

Academic Flowchart



Computer Engineering 2015/2016 (129 Hours)



Legend
Updated: 5/6/15

■ Mathematics	■ First Year Engineering	■ Freshman Comp	③ Credit Hours
■ Physics	■ Computer Engineering Option	■ History, Social & Behavioral Science Humanity & Fine Art	→ Prerequisite
■ Chemistry / Biology	■ Engineering Electives	■ Offered only in semester listed	- - - - -> Prereq w/concurrency

Electrical and Computer 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
CPE 112** Intro to Comp Prog in Eng	Y	1	Y	1	N	N	N	N	N	N
CPE 211** Intro to Comp Prog in Eng	N	0	N	0	Y	Y	Y	Y	Y	Y
CPE 212 Fund of Software Eng	Y	1	Y	1	Y	Y	Y	Y	Y	Y
CPE 221 Computer Organization	Y	1	Y	1	Y	Y	Y	Y	Y	Y
CPE 322 Digital Hardware Design	N	0	Y	1	N	Y	N	Y	N	Y
CPE 323 Intro Embedded Comp Sys	Y	1	E	1	Y	E	Y	E	Y	E
CPE 324 Digital Hardware Des Lab	N	0	Y	4	N	Y	N	Y	N	Y
CPE 325 Embedded Comp Sys Lab	Y	5	E	6	Y	E	Y	E	Y	E
CPE 353 Software Design/Eng	Y	2	N	0	Y	N	Y	N	Y	N
CPE 381 Fund of Signals/Systems	Y	1	Y	1	E	Y	E	Y	E	Y
CPE 412 Intro to Parallel Prog	Y	1	N	0	Y	N	Y	N	Y	N



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CPE 423 Hardwr/Softwr Co-Design	Y	1	N	0	N	N	Y	N	N	N
CPE 426 Modeling/Synthesis	N	0	D	1	D	D	D	D	D	D
CPE 427** VLSI Design I	N	0	N	0	Y	N	N	N	Y	N
CPE 428** VLSI Design II	N	0	D	0	D	D	D	D	D	D
CPE 431 Intro to Comp Architecture	Y	2	N	0	Y	N	Y	N	Y	N
CPE 434 Operating Systems	Y	1	Y	0	N	Y	N	Y	N	Y
CPE 435 Operating Systems Lab	Y	2	Y	0	N	Y	N	Y	N	Y
CPE 436 Internals of Mod Oper Sys	N	0	N	0	N	Y	N	N	N	Y
CPE 438 Real Time/Embedded Sys	N	0	D	0	D	D	D	D	D	D
CPE 448 Intro to Comp Networks	Y	1	Y	1	E	Y	E	Y	E	Y
CPE 449** Intro to Info Assurance Eng	Y	1	N	0	Y	N	Y	N	Y	N
CPE 453 Senior Software Studio	N	0	Y	1	N	Y	N	Y	N	Y
CPE 495 Comp Eng Design I	Y	1	N	0	Y	N	Y	N	Y	N



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CPE 496 Comp Eng Design II	N	0	Y	2	N	Y	N	Y	N	Y
EE 100** Fund Elec/Comp/Opt Eng	Y	1	Y	1	N	N	N	N	N	N
EE 202 Intro to Digital Logic Des	Y	2	Y	2	Y	Y	Y	Y	Y	Y
EE 203 Digital Logic Design Lab	Y	3	Y	4	Y	Y	Y	Y	Y	Y
EE 213 Electrical Circuit Analysis I	Y	4	Y	4	Y	Y	Y	Y	Y	Y
EE 223 Design/Analysis using Comp	N	0	N	0	N	Y	Y	Y	Y	Y
EE 307 Electricity/Magnetism	Y	1	E	1	Y	E	Y	E	Y	E
EE 308 Electromagnetic Eng	Y	1	Y	1	E	Y	E	Y	E	Y
EE 310 Solid State Fundamentals	Y	1	E	1	Y	E	Y	E	Y	E
EE 313 Electrical Circuit Analysis II	Y	1	E	1	Y	E	D	D	D	D
EE 315 Intro Elec Analysis/Design	Y	1	E	1	Y	E	Y	E	Y	E
EE 316 Electronic Meas/Devices Design Lab	Y	5	Y	5	E	Y	E	Y	E	Y
EE 382 Analytical Meth Contin Time Sys	Y	1	E	1	Y	E	Y	E	Y	E



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EE 383 Analytical Meth Multi/Discr Time Sys	Y	1	Y	1	E	Y	E	Y	E	Y
EE 384 Digital Signal Processing Lab	Y	3	Y	2	E	Y	E	Y	E	Y
EE 385 Random Signals/Noise	Y	1	Y	1	E	Y	E	Y	E	Y
EE 386 Intro to Control/Robotic Systems	Y	1	Y	1	E	Y	E	Y	E	Y
EE 401 Digital Signal Proc Architectures	N	0	D	0	D	D	D	D	D	D
EE 411 Electric Power Systems	Y	1	Y	1	N	Y	N	Y	N	Y
EE 414 Analog and Digital Filter Design	N	0	Y	1	N	Y	N	Y	N	Y
EE 416 Electronics II	N	0	Y	1	N	Y	N	Y	N	Y
EE 423 Communication Sys/Simulation	Y	1	N	0	N	N	Y	N	N	N
EE 424 Intro to Data Comm Networks	Y	1	N	0	Y	N	Y	N	Y	N
EE 426 Communication Theory	N	0	Y	1	N	Y	N	Y	N	Y
EE 427** VLSI Design I	N	0	D	0	D	D	D	D	D	D
EE 428** VLSI Design II	N	0	D	0	D	D	D	D	D	D



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EE 436 Digital Electronics	Y	1	N	0	Y	N	Y	N	Y	N
EE 437 Electr Manufacturing Processes	N	0	N	0	N	N	N	N	N	N
EE 451 Optoelectronics	Y	1	N	0	Y	N	Y	N	Y	N
EE 453 Laser Systems	Y	1	N	0	Y	N	Y	N	Y	N
EE 454 Optical Fiber Communications	N	0	Y	1	N	Y	N	Y	N	Y
EE 486 Intro to Modern Control Systems	N	0	D	0	D	D	D	D	D	D
EE 494 EE Design Projects	Y	2	Y	2	E	Y	E	Y	E	Y
OPE 441 Optical Systems Design	N	0	D	0	D	D	D	D	D	D
OPE 442 Interference and Diffraction	N	0	D	0	D	D	D	D	D	D
OPE 451 Optoelectronics	Y	1	N	0	Y	N	Y	N	Y	N
OPE 453 Laser Systems	Y	1	N	0	Y	N	Y	N	Y	N
OPE 454 Optical Fiber Communications	N	0	Y	1	N	Y	N	Y	N	Y
OPE 456 Photonics Lab	N	0	Y	1	N	Y	N	Y	N	Y



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OPE 459 Optical Engineering Design I	Y	1	N	0	Y	N	Y	N	Y	N
OPE 460 Optical Engineering Design II	Y	1	Y	1	N	Y	N	Y	N	Y

Legend

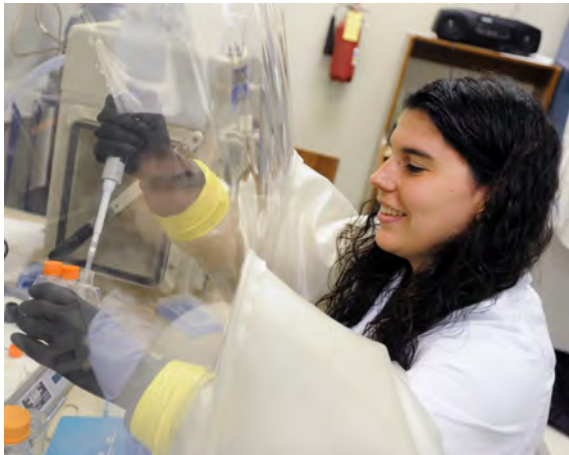
Y	Course will be offered in designated term.
E	Course will likely be offered in designated term, but availability will be determined by faculty availability and budget.
N	Course will not be offered in designated term.
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** Course has a required lab section.



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Chemical Engineering

Chemical Engineers apply the principles of chemistry and engineering to solve problems involving the production or use of chemicals, thereby building a bridge between science and manufacturing. They work in petrochemical (refining petroleum products), biotechnical (improving agriculture and food production), materials (nanotechnology and catalysis) and pharmaceutical (mass production of medicine) fields to deliver products safely and economically on a mass scale. Chemical engineers apply principles of

physics, mathematics, and mechanical and electrical engineering. They must be aware of all aspects of chemical manufacturing, how it affects the environment, the safety of workers and customers, and takes measures to safeguard those areas.



Highlights

- Specialization in either Materials or Biotechnology.
- Small program with unique faculty relationships.
- Students co-op with 3M, Nucor Steel, Southern Company, and many more.
- Average median salary in 2012: \$94,350.



“This photo was taken in the wiring department. I was working on a prototype wiring harness and making modifications to the engineering drawings. The tasks that I am given are challenging and meaningful. I can honestly say that I enjoy going to work each day.”

Jonathan Savory // Decatur, Alabama
Senior, Chemical **ENGINEERING**

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BE.**

Academic Checksheet



Chemical Engineering 2015/2016 (129 Hours)

Student A#				Student Name (Last, First MI)		Offered: F=Fall S=Spr M=Sum
Semester, Transfer or AP	Grade	Course Number	Cr Hrs	Course Title	Prerequisites, Corequisites and/or Prerequisites with Concurrency	
English - 6 hours						
		EH 101	3	Freshman Composition I	Placement	FSM
		EH 102	3	Freshman Composition II	EH 101	FSM
Mathematics - 15 hours						
		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
Chemistry - 18 hours						
		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
		CH 123	3	General Chemistry II	CH 121, Prereq w/Con: CH 126	FSM
		CH 126	1	General Chemistry Lab II	Coreq: CH 123	FSM
		CH 331	3	Organic Chemistry I	CH 123, CH 126	FSM
		CH 335	1	Organic Chemistry Lab I	Prereq w/Con: CH 331	FSM
		CH 332	3	Organic Chemistry II	CH 331	FSM
		CH 341	3	Physical Chemistry I	CH 123, MA 201, PH 112	F
Physics - 8 hours						
		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
Biology - 3 hours						
		BYS 311	3	Intro to Molecular Biological Systems	CH 331	S
History, Social & Behavioral Sciences, Humanities & Fine Arts - 18 hours						
			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: http://www.uah.edu/images/colleges/engineering/CUE2%20Files/Forms/HSBS_HFA_Requirements_05202014.pdf	FSM
			3	Sequence Course (HY or EH)		FSM
			3	HSBS/HFA		FSM
First-Year Engineering - 4 hours						
		FYE 101	1	First-Year Experience for Engineers	None	FS
		ENG 101	3	Computing for Engineers	Prereq w/Con: MA 171	SM
Chemical Engineering Option - 40 hours						
		CHE 201	2	Intro to Chemical Engineering Processes	ENG 101	FS
		EE 213	3	Electrical Circuit Analysis I	Prereq w/Con: PH 112, MA 201	FSM
		CHE 244	3	Intro to Chemical Engineering Systems	PH 111, CH 123, CHE 201, MA 201	S
		MAE 271	3	Statics	ENG 101, PH 111, Prereq w/Con: MA 201	FSM
		CHE 294	3	Nature & Properties of Materials	CH 121, PH 111	F
		CHE 295	1	Nature & Properties of Materials Lab	Prereq w/Con: CHE 294	F
		CHE 342	3	Transport Phenomena	CH 341, Prereq w/Con: CHE 244, MAE 310	S
		CHE 344	3	Chemical Engineering Thermodynamics	CH 341, Prereq w/Con: CHE 244	S
		MAE 310	3	Fluid Mechanics I	MA 238, MAE/CE 271	FSM
		CHE 347	3	Quantitative Modeling for Chemical Engrs	Prereq w/Con: CHE 201, MA 238	F
		CHE 439	2	Unit Operations Lab I	CHE 295, Prereq w/Con: CHE 441, CHE 446	F
		CHE 440	2	Unit Operations Lab II	CHE 439, CHE 441, CHE 443	S
		CHE 441	3	Chemical Kinetics & Reactor Design	CHE 344, CHE 347	F
		CHE 443	3	Mass Transfer Operations	CHE 342, CHE 344, MAE 310	F
		CHE 445	3	Chemical Process Control	CHE 441	S
		CHE 446	3	Analysis & Design of Transport Equipment	CHE 342, Prereq w/Con: CHE 443	F
		CHE 448	3	Chemical Engineering Design	CHE 441, CHE 443, CHE 446, Prereq w/Con: CHE 445	S
		CHE 485	3	Process Safety and Toxicology	Prereq w/Con: CHE 448	S
Chemical Engineering Electives - 9 hours						
		CH 361	3	General Biochemistry I	BYS 311, CH 332, CH 335	FSM
		CHE 460	3	Introduction to Bioprocess Engineering	CH 361	F
		CHE 461	3	Bioseparations	CHE 460	S
		CH 440	3	Polymer Synthesis & Characterization	CH 331	F
		CHE 494	3	Applied Materials Engineering	CHE 294, CHE 344	S
		CHE 495	3	Polymer Engineering	CH 341, CH 440	F

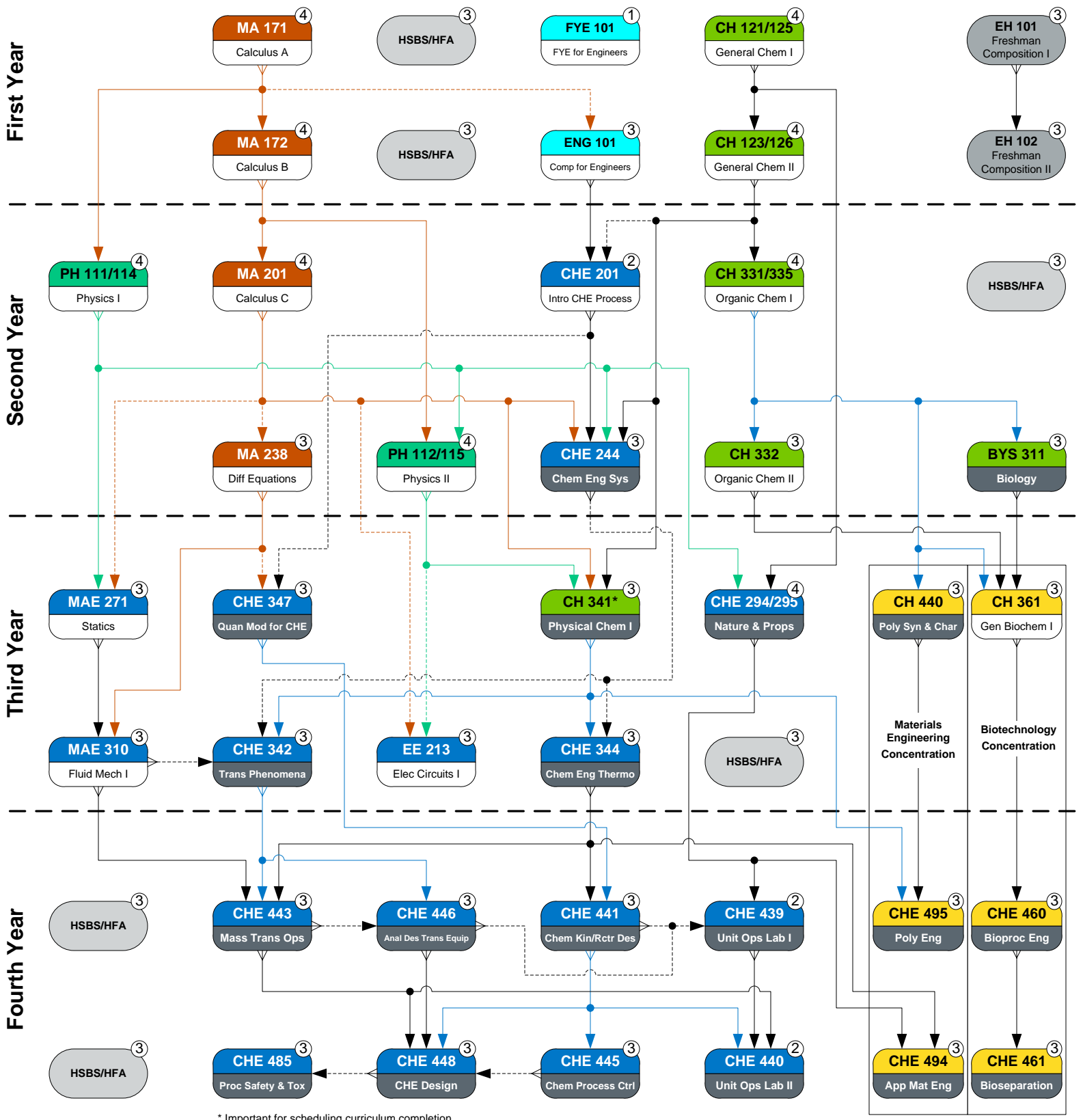
All prerequisite classes must be completed with a "C-" or higher grade.

The Catalog is the final authority for all degree requirements.

Updated: 5/7/2015

Academic Flowchart

Chemical Engineering 2015/2016 (130 Hours)



* Important for scheduling curriculum completion.

Legend Updated: 5/5/15	Mathematics	First Year Engineering	Freshman Comp	Credit Hours
	Physics	Chemical Engineering Option	History, Social & Behavioral Science Humanity & Fine Art	Prerequisite
	Chemistry / Biology	Concentration Electives	Offered only in semester listed	Prereq w/concurrency

Chemical 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
CHE 197 Intro to Chem Eng Pro	Y	1	N	0	N	N	N	N	N	N
CHE 198 Comp Tools for ChEng	N	0	Y	1	N	N	N	N	N	N
CHE 201 Intro to Chem Eng Pro	N	0	N	0	Y	Y	Y	Y	Y	Y
CHE 244 Intro to CHE Systems	N	0	Y	1	N	Y	N	Y	N	Y
CHE 294 Nature/Prop of Materials	Y	1	N	0	Y	N	Y	N	Y	N
CHE 295 Nature/Prop of Matrls Lab	Y	3	N	0	Y	N	Y	N	Y	N
CHE 342 Transport Phenomena	N	0	Y	1	N	Y	N	Y	N	Y
CHE 344 Chem Eng Thermo	N	0	Y	1	N	Y	N	Y	N	Y
CHE 347 Quantitative Modeling	Y	1	N	0	Y	N	Y	N	Y	N
CHE 439 Unit Operations I	Y	2	N	0	Y	N	Y	N	Y	N
CHE 440 Unit Operations II	N	0	Y	3	N	Y	N	Y	N	Y



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CHE 441 Chem Kinetics/Reactor Des	Y	1	N	0	Y	N	Y	N	Y	N
CHE 443 Mass Transfer Operations	Y	1	N	0	Y	N	Y	N	Y	N
CHE 445 Chemical Process Control	N	0	Y	1	N	Y	N	Y	N	Y
CHE 446 Analy/Des of Trans Equip	Y	1	N	0	Y	N	Y	N	Y	N
CHE 448 Chemical Eng Design	N	0	Y	1	N	Y	N	Y	N	Y
CHE 460 Intro to Bioprocess Eng	Y	1	N	0	Y	N	Y	N	Y	N
CHE 461 Bioprocess Eng	N	0	Y	1	N	Y	N	Y	N	Y
CHE 485 Process Safety/Toxicology	N	0	Y	1	N	Y	N	Y	N	Y
CHE 494 Applied Materials Engineering	N	0	Y	1	N	Y	N	Y	N	Y
CHE 495 Polymer Engineering	Y	1	N	0	Y	N	Y	N	Y	N

Legend

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Center for Undergraduate Engineering Education

Engineering Building 157

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