



THE UNIVERSITY OF
ALABAMA IN HUNTSVILLE



Mechanical Engineering

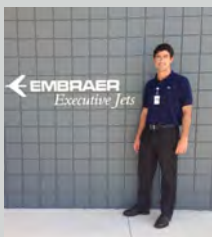
Mechanical Engineering is a broad field that traditionally comprises three primary subfields: energy, mechanisms and machinery, and manufacturing. The work done by mechanical engineers includes the designs, construction, and use of systems for the conservation of energy available from natural sources (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

**GO.
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BE.**

Academic Checksheet



Mechanical Engineering 2015/2016 (128 Hours)

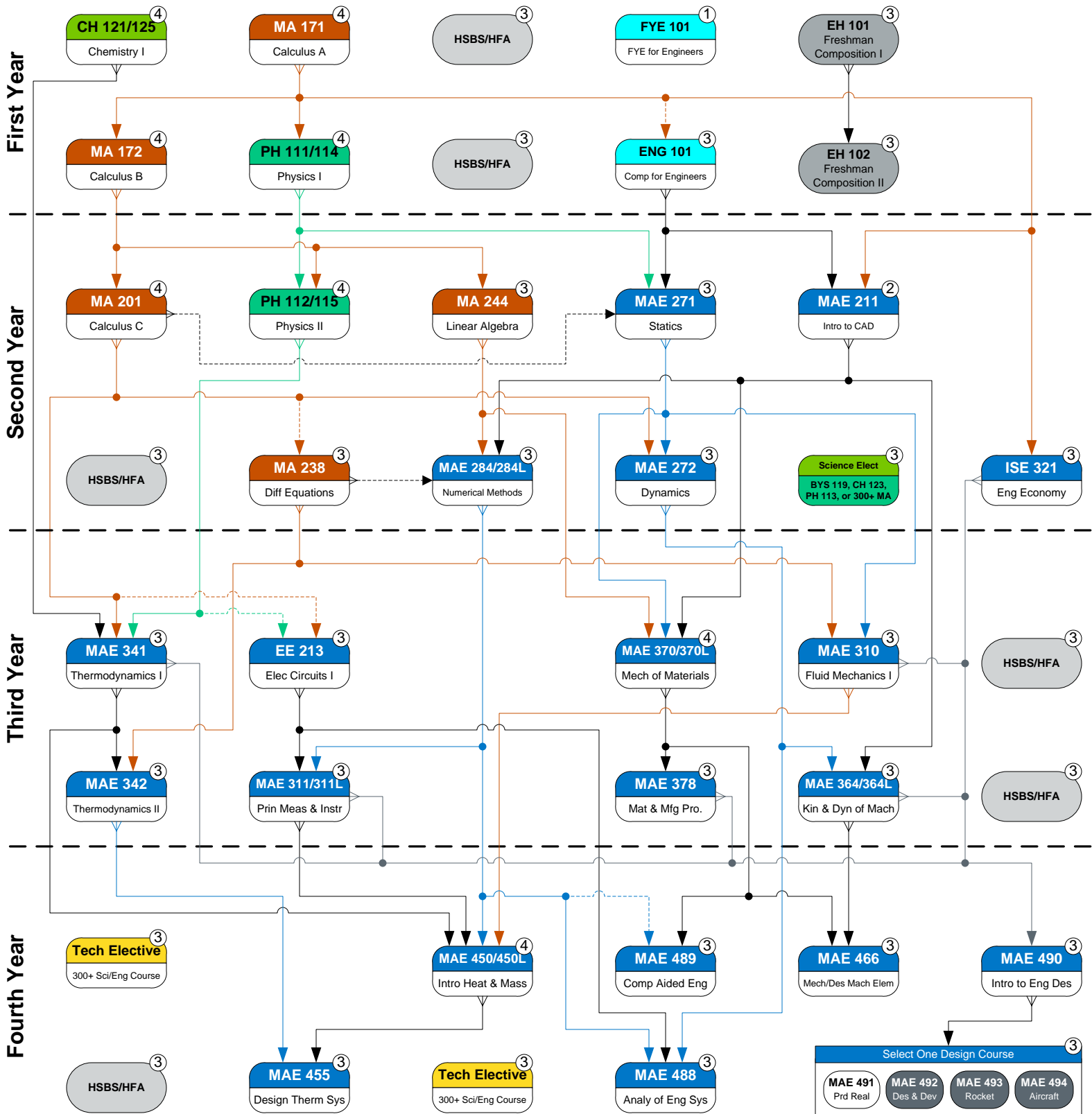
Student A#				Student Name (Last, First MI)		Offered:
Semester, Transfer or AP	Grade	Course Number	Cr Hrs	Course Title	Prerequisites, Corequisites and/or Prerequisites with Concurrency	F=Fall S=Spr M=Sum
English - 6 hours						
		EH 101	3	Freshman Composition I	Placement	FSM
		EH 102	3	Freshman Composition 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.



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