

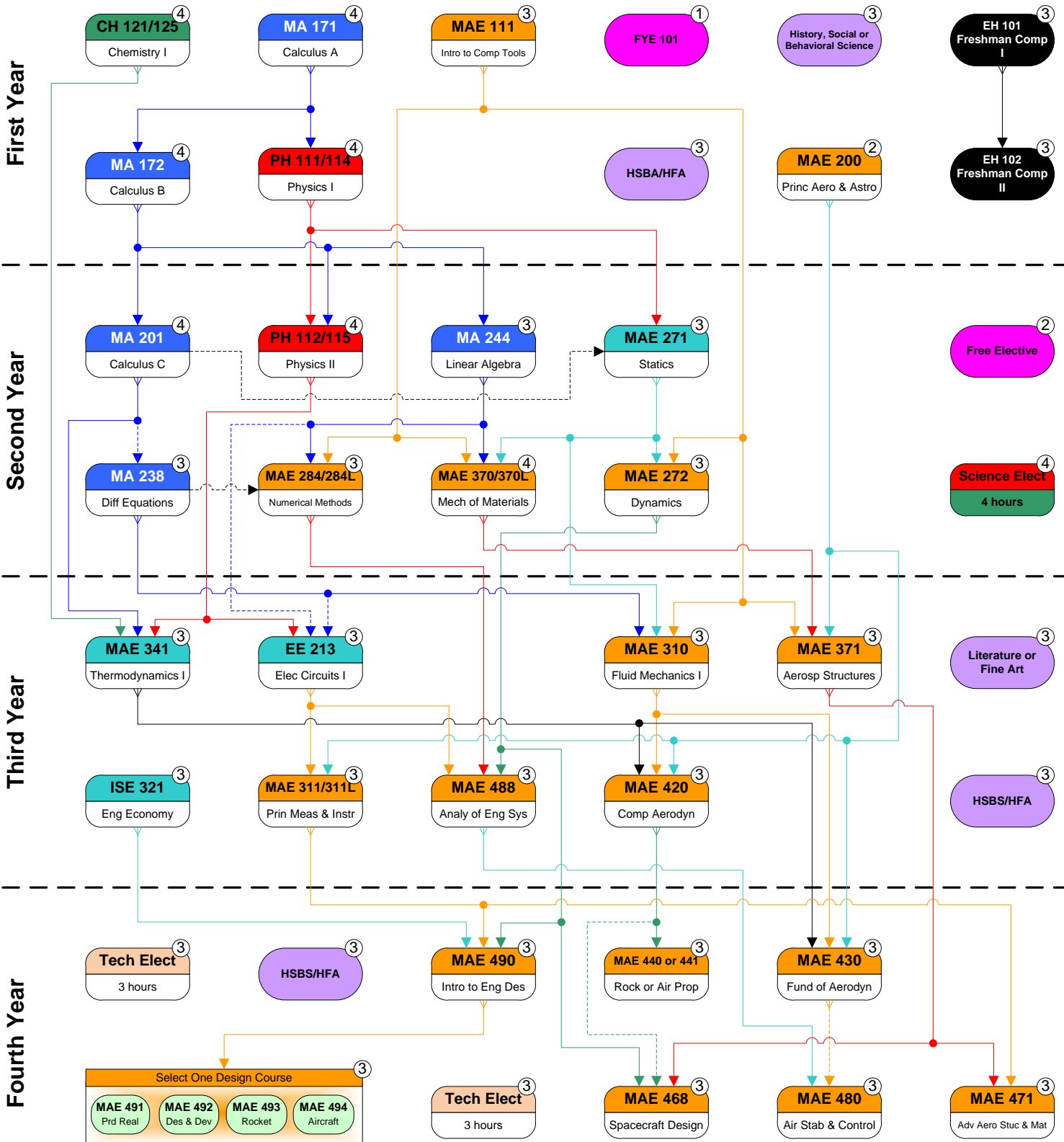
Student A#				Student Name (Last, First MI)			Offered: F=Fall S=Spring M=Summer
Semester, Transfer or AP	Grade	Course Number	Cr Hrs	Course Title	Prerequisites, Corequisites and/or Prerequisites with Concurrency		
English - 6 hours							
		EH 101	3	Freshman Composition I	Placement		FSM
		EH 102	3	Freshman 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		FSM
		PH 114	1	General Physics Lab I	Prereq w/Con: PH 111		FSM
		PH 112	3	General Physics w/Calculus II	MA 172, PH 111		FSM
		PH 115	1	General Physics Lab II	Prereq w/Con: PH 112		FSM
Science Elective - 4 hours							
			3		Choose from CH 123/126 or PH 113/116		FSM
			1				
History, Social & Behavioral Sciences, Humanities & Fine Arts - 15 hours							
			3	HSBS	Choose 3 hours: History, Social or Behavior Science		FSM
			3	HFA	Choose 3 hours: Literature or Fine Art		FSM
			3		Choose 3 hour courses of HSBS/HFA that you have met prerequisites, from ARH, ARS*, CM, EH, ECN*, FL, GS, GY, HY, MU, PHL, PSC, PY, SOC, WS		
			3				
			3				
General Education Electives - 3 hours							
					Choose up to 3 hours of electives (Ex. FYE 101): Any courses that you have met prerequisites, and are not remedial coursework for Engineering curriculum.		
Engineering Core - 12 hours							
		MAE 271	3	Statics	PH 111, Prereq w/Con: MA 201		FSM
		MAE 341	3	Thermodynamics I	MA 201, CH 121, CH 125, PH 112		FSM
		EE 213	3	Electrical Circuit Analysis I	PH 112, Prereq w/Con: MA 238 & (MA 244 or CHE 244)		FSM
		ISE 321	3	Engineering Economy	Sophomore Standing		FSM
**	Class has required lab section			Aerospace Engineering Option - 52 hours			
		MAE 111	3	Intro to Computational Tools	Prereq w/Con: MA 113 or Level II Placement		FSM
		MAE 200	3	Principles of Aeronautics & Astronautics	Prereq w/Con: MA 113 or Level II Placement		FS
		MAE 272	3	Dynamics	MAE/CE 271 & (MAE 111 or CPE 112)		FSM
**		MAE 284	3	Numerical Methods	MA 244 & (MAE 111 or CPE 112); Prereq w/Con: MA 238 & Coreq: MAE 284L		FSM
**		MAE 310	3	Fluid Mechanics I	MA 238, MAE/CE 271 & (MAE 111 or CPE 112 or CHE 198)		FSM
**		MAE 311	3	Principles of Measurement & Instrumentation	EE 213 & (MAE 100 or 200), Coreq: MAE 311L		FSM
**		MAE 370	4	Mechanics of Materials	MAE/CE 271, MA 244 & (MAE 111 or CPE 112), Coreq: MAE 370L		FSM
		MAE 371	3	Aerospace Structures	MAE 111, MAE 200, MAE/CE 370		FS
		MAE 420	3	Compressible Aerodynamics	MAE 200, MAE 310, MAE 341		SM
		MAE 430	3	Fundamentals of Aerodynamics	MAE 200, MAE 310, MAE 341		FM
Select One		MAE 440	3	Rocket Propulsion I	MAE 420		FM*
		MAE 441	3	Airbreathing Propulsion	MAE 420		FM*
		MAE 468	3	Elements of Spacecraft Design	MAE/CE 272, MAE 371, Prereq w/Con: MAE 420		FS
		MAE 471	3	Advanced Aero Structure & Materials	MAE 311, MAE 371		FS
		MAE 480	3	Aircraft Stability & Control	Prereq w/Con: MAE 430 & 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	MAE/CE 272, MAE 311, ISE 321		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 or above Science or Engineering course.		
			3				

* 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.

Aerospace Engineering Program 2013/2014 (129 Hours)



Legend




- Freshman Comp
- Mathematics
- Chemistry / Biology
- Physics
- Engineering Core
- History, Social, Behavior Science/Humanity & Fine Art
- Free Elective
- Aerospace Eng. Option
- Electives
- 3 Credit Hours
- Prerequisite
- Prereq w/concurrency



Department Mechanical & Aerospace	Prepared by Jacob Kerstiens	Date 8/8/13
Program Aerospace Engineering	Approved by	Date

College of Engineering Pathways

Aerospace Engineering 2013-2014 Plan

	Curriculum Pathway	Research Pathway	Internship Pathway	Co-op Pathway		
Milestone Year-1						
<input type="checkbox"/> 35 hours completed including: MA 171, CH 121/125, MAE 111, HSBS/HFA, FYE 101, EH 101 MA 172, PH 111/114, MAE 200, HSBS/HFA, EH 102			<input type="checkbox"/> Meet with Faculty to discuss pathway choices <input type="checkbox"/> Meet with Career Development <input type="checkbox"/> Attend Career Services Workshop on Resume <input type="checkbox"/> Outline Resume <input type="checkbox"/> Participate in Career Fair			
Milestone Year-2						
<input type="checkbox"/> 68 hours completed including: MA 201, PH 112/115, MA 244, MAE 271, Free Elec MA 238, MAE 284, Sci Elec, MAE 272, MAE 370			<input type="checkbox"/> Meet with Faculty for Undergraduate research opportunities <input type="checkbox"/> Attend Career Services Workshop on Interviews <input type="checkbox"/> Professional Resume <input type="checkbox"/> Attend Career Fair <input type="checkbox"/> Co-op/Internship Offer (Summer Start)			
<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>Research Pathway</p> </div> <div style="text-align: center;">  <p>Internship Pathway</p> </div> <div style="text-align: center;">  <p>Co-op Pathway</p> </div> </div>						
Milestone Year-3						
Research Pathway <input type="checkbox"/> 98 hours completed including: MAE 341, EE 213, MAE 371, MAE 310, HSBS/HFA MAE 420, MAE 311, MAE 488, ISE 321, HSBS/HFA <input type="checkbox"/> Undergraduate Research <input type="checkbox"/> Attend JUMP Information Session		Internship Pathway <input type="checkbox"/> 98 hours completed from Curriculum Pathway <input type="checkbox"/> Summer Internship		Co-op Pathway <input type="checkbox"/> Obtain Faculty Mentor <input type="checkbox"/> 65 hours completed including: Work Semester (Summer) MAE 341, EE 213, MAE 310, MAE 371, HSBS/HFA (Fall) Work Semester (Spring) EE 420, MAE 311, ISE 321, HSBS/HFA (Summer) <input type="checkbox"/> 2 Semesters of Co-op		
Milestone Year-4						
Research Pathway <input type="checkbox"/> 128 hours completed including: MAE 490, MAE 430, MAE 440, MAE 441, Tech Elec, HSBS/HFA MAE 49x, MAE 471, MAE 468, MAE 480, Tech Elec <input type="checkbox"/> Undergraduate Research Complete <input type="checkbox"/> Senior Design Complete <input type="checkbox"/> Degree Complete <input type="checkbox"/> Begin Career or Graduate School		Internship Pathway <input type="checkbox"/> 128 hours completed from Curriculum Pathway <input type="checkbox"/> Summer Internship <input type="checkbox"/> Senior Design Complete <input type="checkbox"/> Degree Complete <input type="checkbox"/> Begin Career or Graduate School		Co-op Pathway <input type="checkbox"/> 89 hours completed including: Work Semester (Fall) MAE 490, MAE 471, MAE 468, Tech Elec (Spring) MAE 488, MAE 430, MAE 440 MAE 441, HSBS/HFA (Summer) <input type="checkbox"/> Experiential Learning complete <input type="checkbox"/> Decision on Industry or Graduate School		
Milestone Year-5						
				Co-op Pathway <input type="checkbox"/> 128 hours completed including: MAE 49x, Tech Elec, MAE 480 (Fall) <input type="checkbox"/> Senior Design Complete <input type="checkbox"/> Degree Complete <input type="checkbox"/> Begin Career or Graduate School		

Required	
Recommended	

Student A#				Student Name (Last, First MI)			Offered: F=Fall S=Spring M=Summer		
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		FSM		
		PH 114	1	General Physics Lab I	Prereq w/Con: PH 111		FSM		
		PH 112	3	General Physics w/Calculus II	MA 172, PH 111		FSM		
		PH 115	1	General Physics Lab II	Prereq w/Con: PH 112		FSM		
Biology - 4 hours									
		BYS 119	4	Principles of Biology	None		FSM		
History, Social & Behavioral Sciences, Humanities & Fine Arts - 15 hours									
			3	HSBS	Choose 3 hours: History, Social or Behavior Science		FSM		
			3	HFA	Choose 3 hours: Literature or Fine Art		FSM		
			3		Choose 3 hour courses of HSBS/HFA that you have met prerequisites, from ARH, ARS*, CM, EH, ECN*, FL, GS, GY, HY, MU, PHL, PSC, PY, SOC, WS				
			3						
			3						
General Education Electives - 3 hours									
					Choose up to 3 hours of electives (Ex. FYE 101): Any courses that you have met prerequisites, and are not remedial coursework for Engineering curriculum.				
Engineering Core - 12 hours									
		CE 271	3	Statics	PH 111, Prereq w/Con: MA 201		FSM		
		ISE 321	3	Engineering Economy	Sophomore Standing		FSM		
		MAE 310	3	Fluid Mechanics I	MA 238, MAE/CE 271 & (MAE 111 or CPE 112 or CHE 198)		FSM		
		MAE 341	3	Thermodynamics I	MA 201, CH 121, CH 125, PH 112		FSM		
**	Class has required lab section			Civil Engineering Option - 52 hours					
		CE 101	1	Prelude to Civil Engineering	None		F		
**		CPE 112	3	Intro to Computer Programming in Engineering	MA 113, MA 115 or Level III Placement, Coreq: CPE 112L		FSM		
		CE 111	2	Civil Engineering Graphics	MA 112 or Level II Placement, Freshman CE Standing		FS		
		CE 272	3	Dynamics	CPE 112, CE/MAE 271		FSM		
		CE 284	2	Surveying	Prereq w/Con: CE 111, or Instr/Advsr Approval		F		
		CE 321	3	Transportation Engineering & Design	CE 284, MA 171		S		
**		CE 370	4	Mechanics of Materials	CPE 112, CE/MAE 271, Coreq: CE 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		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									
Select One Concentration	Struct			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	
	Environ				CE 457	3	Hydrology	MAE 310	F
					CE 411	3	Intro to Geographical Information Systems	Senior Standing or Instructor Approval	F
	Transp				CE 420	3	Urban Transportation Planning	CE 321	F
Gen				CE	3				
				CE	3	Choose from CE 411, CE 412, CE 420, CE 456, CE 457, CE 458, CE 473, CE 481, CE 487			

Civil Engineering Program 2013/2014 (128 Hours)

UAHuntsville

All prerequisite classes must be completed with a "C" or higher grade.
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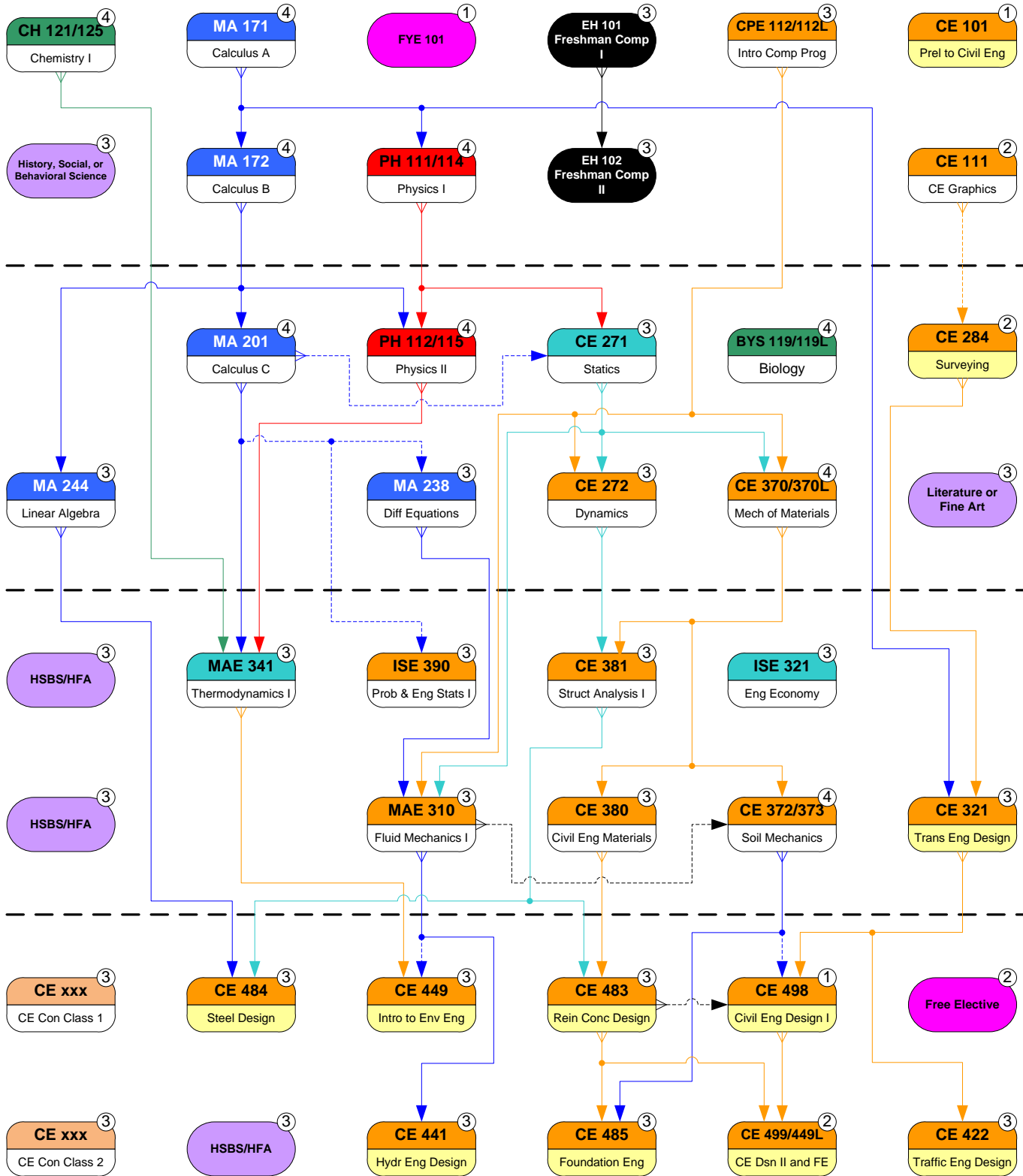
Civil Engineering Program 2013/2014 (128 Hours)

First Year

Second Year

Third Year

Fourth Year



Legend




- Freshman Comp
- Mathematics
- Chemistry / Biology Core
- Physics
- History, Social, Behavior Science/Humanity & Fine Art
- Free Electives
- Engineering Core
- Civil Engineering Option
- Electives
- Offered only in that semester
- History, Social, Behavior Science/Humanity & Fine Art
- 3 Credit Hours
- Prerequisite
- Prereq w/concurrency



Department	Prepared by	Date
Civil & Environmental	Jacob Kerstiens	8/8/13
Program	Approved by	Date
Civil Engineering		

College of Engineering Pathways

Aerospace Engineering 2013-2014 Plan

	Curriculum Pathway	Research Pathway	Internship Pathway	Co-op Pathway		
Milestone Year-1						
<input type="checkbox"/> 35 hours completed including: MA 171, CH 121/125, MAE 111, HSBS/HFA, FYE 101, EH 101			<input type="checkbox"/> Meet with Faculty to discuss pathway choices <input type="checkbox"/> Meet with Career Development <input type="checkbox"/> Attend Career Services Workshop on Resume <input type="checkbox"/> Outline Resume <input type="checkbox"/> Participate in Career Fair			
MA 172, PH 111/114, MAE 200, HSBS/HFA, EH 102						
Milestone Year-2						
<input type="checkbox"/> 68 hours completed including: MA 201, PH 112/115, MA 244, MAE 271, Free Elec			<input type="checkbox"/> Meet with Faculty for Undergraduate research opportunities <input type="checkbox"/> Attend Career Services Workshop on Interviews <input type="checkbox"/> Professional Resume <input type="checkbox"/> Attend Career Fair <input type="checkbox"/> Co-op/Internship Offer (Summer Start)			
MA 238, MAE 284, Sci Elec, MAE 272, MAE 370						
<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>Research Pathway</p> </div> <div style="text-align: center;">  <p>Internship Pathway</p> </div> <div style="text-align: center;">  <p>Co-op Pathway</p> </div> </div>						
Milestone Year-3						
Research Pathway <input type="checkbox"/> 98 hours completed including: MAE 341, EE 213, MAE 371, MAE 310, HSBS/HFA MAE 420, MAE 311, MAE 488, ISE 321, HSBS/HFA <input type="checkbox"/> Undergraduate Research <input type="checkbox"/> Attend JUMP Information Session		Internship Pathway <input type="checkbox"/> 98 hours completed from Curriculum Pathway <input type="checkbox"/> Summer Internship		Co-op Pathway <input type="checkbox"/> Obtain Faculty Mentor <input type="checkbox"/> 65 hours completed including: Work Semester (Summer) MAE 341, EE 213, MAE 310, MAE 371, HSBS/HFA (Fall) Work Semester (Spring) EE 420, MAE 311, ISE 321, HSBS/HFA (Summer) <input type="checkbox"/> 2 Semesters of Co-op		
Milestone Year-4						
Research Pathway <input type="checkbox"/> 128 hours completed including: MAE 490, MAE 430, MAE 440, MAE 441, Tech Elec, HSBS/HFA MAE 49x, MAE 471, MAE 468, MAE 480, Tech Elec <input type="checkbox"/> Undergraduate Research Complete <input type="checkbox"/> Senior Design Complete <input type="checkbox"/> Degree Complete <input type="checkbox"/> Begin Career or Graduate School		Internship Pathway <input type="checkbox"/> 128 hours completed from Curriculum Pathway <input type="checkbox"/> Summer Internship <input type="checkbox"/> Senior Design Complete <input type="checkbox"/> Degree Complete <input type="checkbox"/> Begin Career or Graduate School		Co-op Pathway <input type="checkbox"/> 89 hours completed including: Work Semester (Fall) MAE 490, MAE 471, MAE 468, Tech Elec (Spring) MAE 488, MAE 430, MAE 440 MAE 441, HSBS/HFA (Summer) <input type="checkbox"/> Experiential Learning complete <input type="checkbox"/> Decision on Industry or Graduate School		
Milestone Year-5						
				Co-op Pathway <input type="checkbox"/> 128 hours completed including: MAE 49x, Tech Elec, MAE 480 (Fall) <input type="checkbox"/> Senior Design Complete <input type="checkbox"/> Degree Complete <input type="checkbox"/> Begin Career or Graduate School		

Required	
Recommended	

Student A#				Student Name (Last, First MI)			Offered: F=Fall S=Spring M=Summer
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		FSM
		PH 114	1	General Physics Lab I	Prereq w/Con: PH 111		FSM
		PH 112	3	General Physics w/Calculus II	MA 172, PH 111		FSM
		PH 115	1	General Physics Lab II	Prereq w/Con: PH 112		FSM
Biology - 3 hours							
		BYS 311	3	Intro to Molecular Biological Systems	CH 331		S
History, Social & Behavioral Sciences, Humaities & Fine Arts - 15 hours							
			3	HSBS	Choose 3 hours: History, Social or Behavior Science		FSM
			3	HFA	Choose 3 hours: Literature or Fine Art		FSM
			3		Choose 3 hour courses of HSBS/HFA that you have met prerequisites,		
			3		from ARH, ARS*, CM, EH, ECN*, FL, GS, GY, HY, MU, PHL, PSC, PY, SOC, WS		
General Education Electives - 3 hours							
					Choose up to 3 hours of electives (Ex. FYE 101): Any courses that you have met prerequisites, and are not remedial coursework for Engineering curriculum.		
Engineering Core - 12 hours							
		CHE 244	3	Intro to Chemical Engineering Systems	CH 123, PH 111, Prereq w/Con: CHE 198		S
		CHE 294	3	Nature & Properties of Materials	CH 121, PH 111		FM
		EE 213	3	Electrical Circuit Analysis I	PH 112, Prereq w/Con: MA 238 & (MA 244 or CHE 244)		FSM
		MAE 271	3	Statics	PH 111, Prereq w/Con: MA 201		FSM
Chemical Engineering Option - 40 hours							
		CHE 197	2	Intro to Chemical Engineering Processes	Level II Math Placement or Coreq: MA 112		F
		CHE 198	2	Computational Tools for Chemical Engineers	CHE 197, Prereq w/Con: MA 113		S
		CHE 295	1	Nature & Properties of Materials Lab	Prereq w/Con: CHE 294		FM
		CHE 342	3	Transport Phenomena	CHE 244, Prereq w/Con: MAE 310		S
		CHE 344	3	Chemical Engineering Thermodynamics	CHE 244, CH 341		SM
		MAE 310	3	Fluid Mechanics I	MA 238, MAE/CE 271 & (MAE 111 or CPE 112 or CHE 198)		FSM
		CHE 347	3	Quantitative Modeling for Chemical Engrs	CHE 198, CHE 244, MA 238		FM
		CHE 439	3	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							
Select One Concentration Materials Engineering Biotechnology		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.
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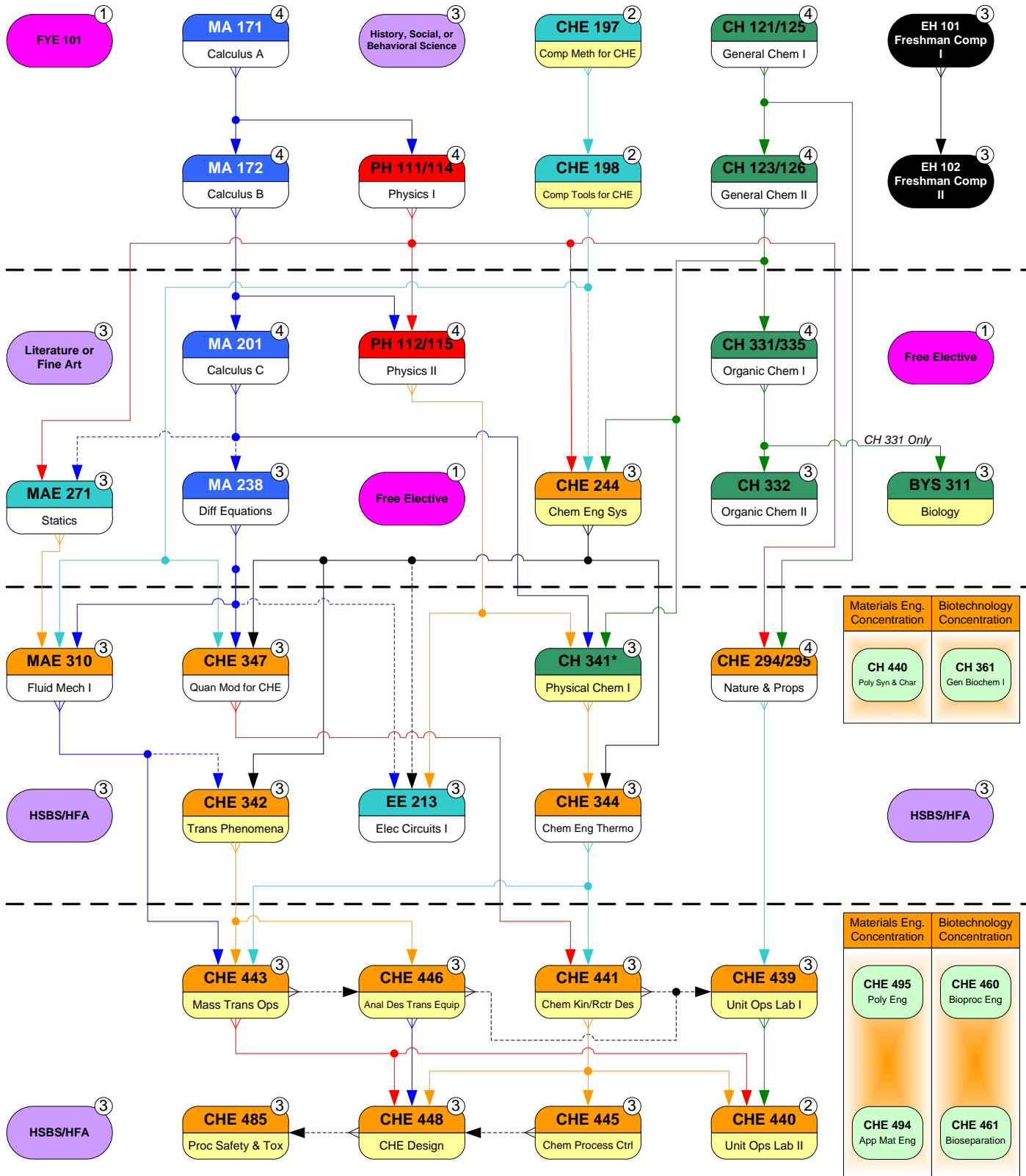
Chemical Engineering Program 2013/2014 (129 Hours)

First Year

Second Year

Third Year

Fourth Year



* Important for scheduling curriculum completion.


Legend	Freshman Comp	Free Elective
	Mathematics	Engineering Core
	Chemistry / Biology Core	Chemical Eng. Option
	Physics	Offered only in that semester
	History, Social, Behavior Science/Humanity & Fine Art	Credit Hours
	Prerequisite	Prereq w/concurrency



Department	Prepared by	Date
Chemical & Materials	Jacob Kerstiens	8/8/13
Program	Approved by	Date
Chemical Engineering		

College of Engineering Pathways

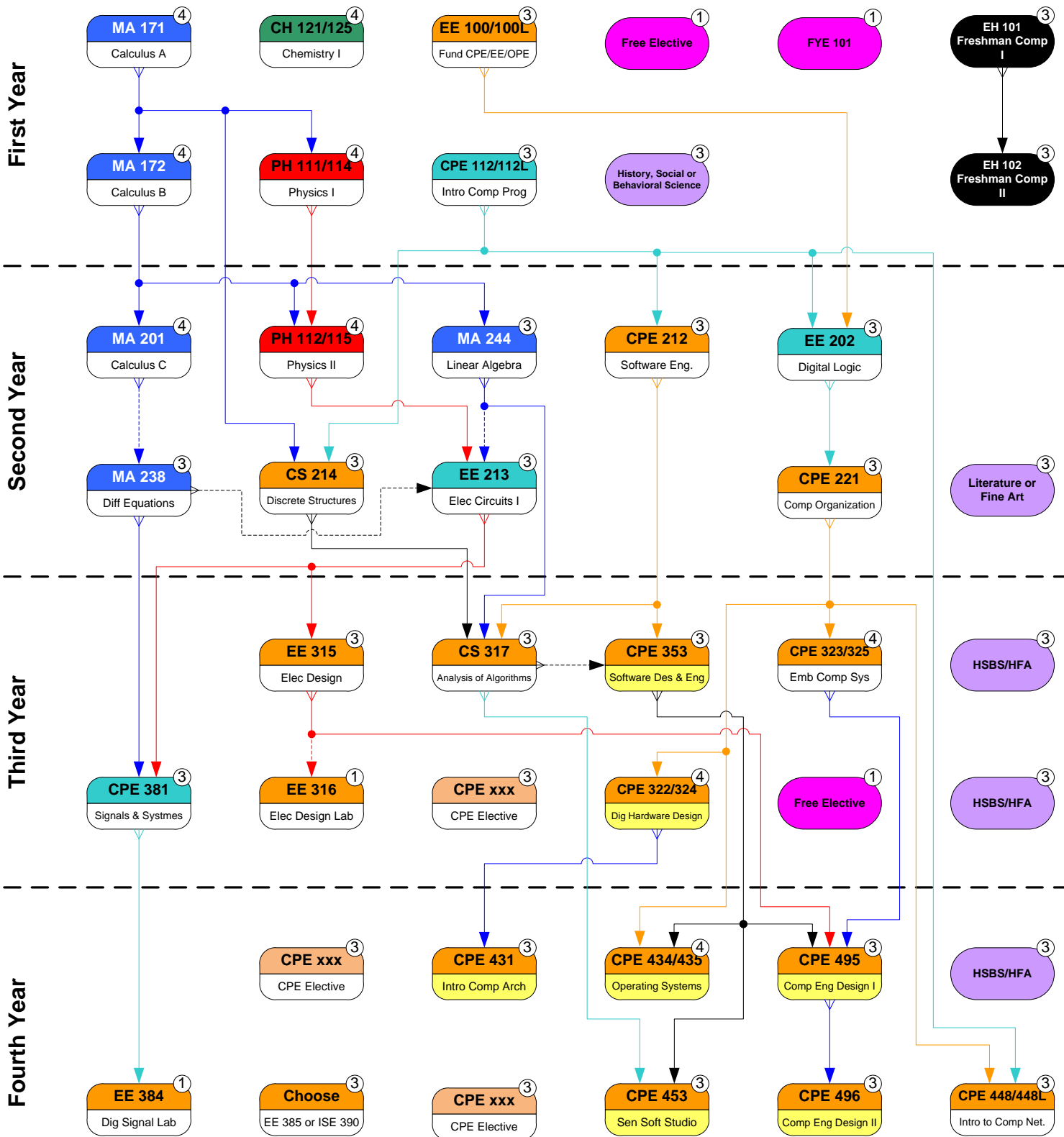
Chemical Engineering 2013-2014 Plan

	Curriculum Pathway	Research Pathway	Internship Pathway	Co-op Pathway					
Milestone Year-1									
<input type="checkbox"/> 34 hours completed including: MA 171, CH 121/125, CHE 197, HSBS/HFA, FYE 101, EH 101			<input type="checkbox"/> Meet with Faculty to discuss pathway choices <input type="checkbox"/> Meet with Career Development <input type="checkbox"/> Attend Career Services Workshop on Resume <input type="checkbox"/> Outline Resume <input type="checkbox"/> Participate in Career Fair						
MA 172, PH 111/114, CHE 198, CH 123/126, EH 102									
Milestone Year-2									
<input type="checkbox"/> 64 hours completed including: MA 201, PH 112/115, CH 331/335, HSBS/HFA MA 238, CH 332, MAE 271 BYS 311, CHE 244			<input type="checkbox"/> Meet with Faculty for Undergraduate research opportunities <input type="checkbox"/> Attend Career Services Workshop on Interviews <input type="checkbox"/> Professional Resume <input type="checkbox"/> Attend Career Fair <input type="checkbox"/> Co-op/Internship Offer (Summer Start)						
									
Milestone Year-3									
Research Pathway <input type="checkbox"/> 99 hours completed including: MAE 310, CHE 347, CH 341, CHE 294, CHE 295, CHE Conc 1 EE 213, CHE 342, CHE 344, HSBS/HFA, HSBS/HFA, Free Elec <input type="checkbox"/> Undergraduate Research <input type="checkbox"/> Attend JUMP Information Session		Internship Pathway <input type="checkbox"/> 99 hours completed from Curriculum Pathway <input type="checkbox"/> Summer Internship		Co-op Pathway <input type="checkbox"/> Obtain Faculty Mentor <input type="checkbox"/> 90 hours completed including: Work Semester (Summer) CHE 347, CH 341, CHE 294, CHE 295, CHE Conc 1 (Fall) Work Semester (Spring) MAE 310, CHE 344, HSBS/HFA (Summer) <input type="checkbox"/> 2 Semesters of Co-op					
Milestone Year-4									
Research Pathway <input type="checkbox"/> 128 hours completed including: CHE 443, CHE 446, CHE 441, CHE 439, CHE Conc 2 CHE 485, CHE 448, CHE 445 CHE 440, CHE Conc 3, HSBS/HFA <input type="checkbox"/> Undergraduate Research Complete <input type="checkbox"/> Senior Design Complete <input type="checkbox"/> Degree Complete <input type="checkbox"/> Begin Career or Graduate School		Internship Pathway <input type="checkbox"/> 128 hours completed from Curriculum Pathway <input type="checkbox"/> Summer Internship <input type="checkbox"/> Senior Design Complete <input type="checkbox"/> Degree Complete <input type="checkbox"/> Begin Career or Graduate School		Co-op Pathway <input type="checkbox"/> 100 hours completed including: Work Semester (Fall) CHE 342, EE 213, Free Elec, HSBS/HFA, HSBS/HFA (Spring) Work Semester (Summer) <input type="checkbox"/> Experiential Learning complete <input type="checkbox"/> Decision on Industry or Graduate School					
Milestone Year-5									
				Co-op Pathway <input type="checkbox"/> 129 hours completed including: CHE 433, CHE 446, CHE 441 CHE 439, CHE Conc 2 CHE 485, CHE 448, CHE 445, CHE 440, HSBS/HFA, CHE Conc 3 <input type="checkbox"/> Senior Design Complete <input type="checkbox"/> Degree Complete <input type="checkbox"/> Begin Career or Graduate School					
		<table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>Required</td> <td style="background-color: yellow;"></td> </tr> <tr> <td>Recommended</td> <td style="background-color: lightblue;"></td> </tr> </table>		Required		Recommended			
Required									
Recommended									

Student A#				Student Name (Last, First MI)			Offered: F=Fall S=Spring M=Summer
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		FSM
		PH 114	1	General Physics Lab I	Prereq w/Con: PH 111		FSM
		PH 112	3	General Physics w/Calculus II	MA 172, PH 111		FSM
		PH 115	1	General Physics Lab II	Prereq w/Con: PH 112		FSM
History, Social & Behavioral Sciences, Humanities & Fine Arts - 15 hours							
			3	HSBS	Choose 3 hours: History, Social or Behavior Science		FSM
			3	HFA	Choose 3 hours: Literature or Fine Art		FSM
			3		Choose 3 hour courses of HSBS/HFA that you have met prerequisites, from ARH, ARS*, CM, EH, ECN*, FL, GS, GY, HY, MU, PHL, PSC, PY, SOC, WS		
			3				
			3				
General Education Electives - 3 hours							
					Choose up to 3 hours of electives (Ex. FYE 101): Any courses that you have met prerequisites, and are not remedial coursework for Engineering curriculum.		
**	Class has required lab section			Engineering Core - 12 hours			
**		CPE 112	3	Intro to Computer Programming in Engineering	MA 113, MA 115 or Level III Placement, Coreq: CPE 112L		FSM
		EE 202	3	Intro to Digital Logic Design	CPE 112, EE 100		FSM
		EE 213	3	Electrical Circuit Analysis I	PH 112, Prereq w/Con: MA 238 & (MA 244 or CHE 244)		FSM
		CPE 381	3	Fundamentals of Signals & Sys for Comp Engrs	EE 213, MA 238		FS
Computer Science - 6 hours							
		CS 214	3	Intro to Discrete Structures	CPE 112, MA 171		FSM
		CS 317	3	Design & Analysis of Algorithms	CS 214, CPE 212, MA 244		FSM
**	Class has required lab section			Computer Engineering Option - 47 hours			
**		EE 100	3	Fund of Computer, Electrical & Optical Eng	Prereq w/Con: MA 112, Coreq: EE 100L		FSM
		CPE 212	3	Fundamentals of Software Engineering	CPE 112		FS
		CPE 221	3	Computer Organization	EE 202		FSM
		CPE 322	3	Digital Hardware Design Fundamentals	CPE 221, Coreq: CPE 324		S
		CPE 324	1	Digital Hardware Design Lab	Coreq: CPE 322		S
		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 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
		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 324		F
		CPE 434	3	Operating Systems	CPE/EE 221, CPE 353, Coreq: CPE 435		F
		CPE 435	1	Operating Systems Lab	Coreq: CPE 434		F
		CPE 448	3	Introduction to Computer Networks	CPE 112, CPE 221		FS
		CPE 453	3	Senior Software Studio	CS 317, CPE 353		S
		CPE 495	3	Computer Engineering Design I	CPE 323, CPE 353, EE 315		F
		CPE 496	3	Computer Engineering Design II	CPE 495		S
Computer Engineering Electives - 9 hours							
			3				
			3		300 - level or above approved by advisor.		
			3				

All prerequisite classes must be completed with a "C" or higher grade.
The Catalog is the final authority for all degree requirements.
Updated: 7/11/2013

Computer Engineering Program 2013/2014 (128 Hours)



Legend	Freshman Comp	Free Electives
	Mathematics	Engineering Core
	Chemistry	Computer Eng Option
	Physics	Offered that Semester Only
	History, Social, Behavior Science/Humanity & Fine Art	Electives
	Prerequisite	Prereq w/concurrency

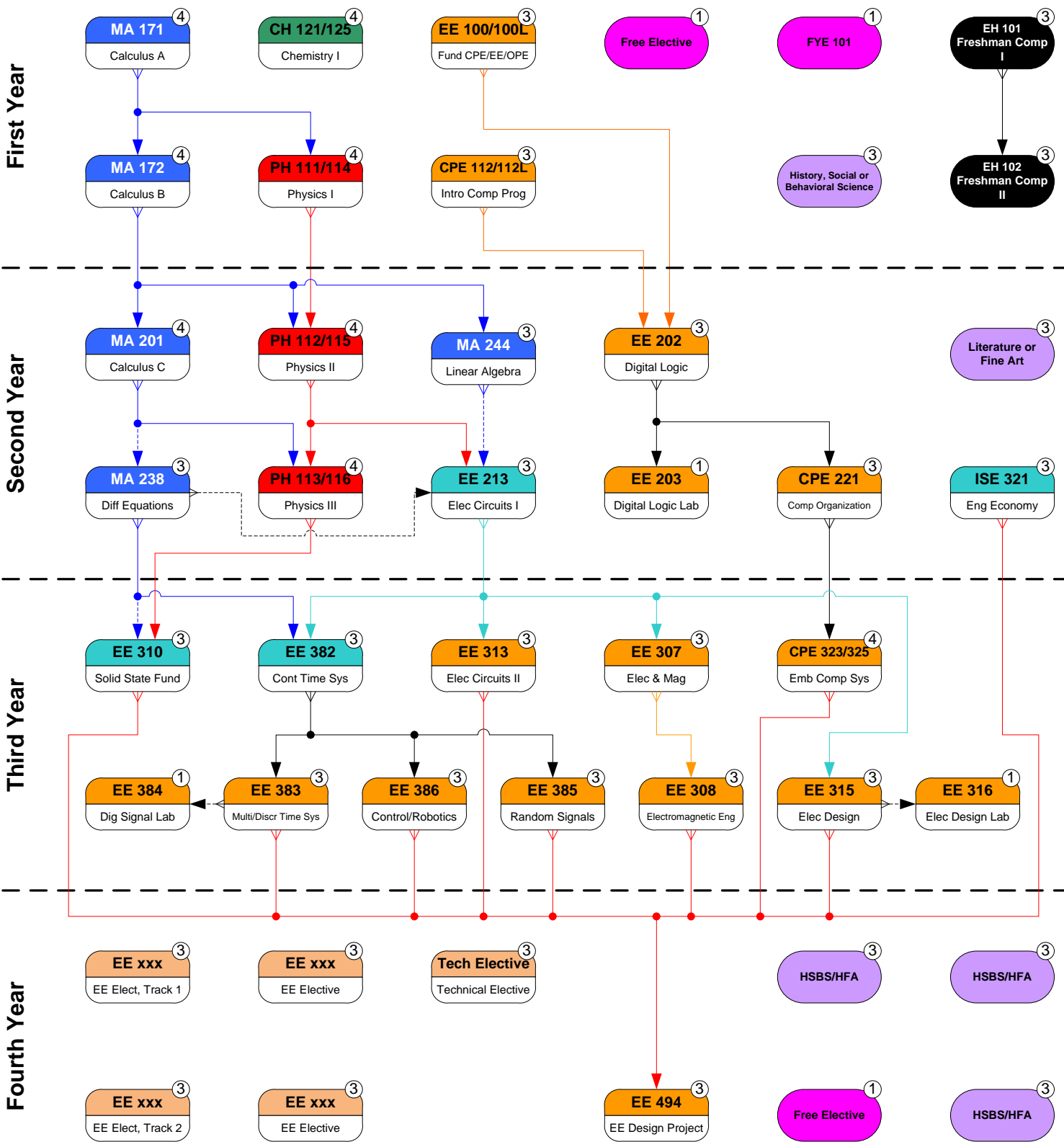


Department	Prepared by	Date
Electrical & Computer	Jacob Kerstiens	8/8/13
Program	Approved by	Date
Computer Engineering		

Student A#				Student Name (Last, First MI)			Offered: F=Fall S=Spring M=Summer
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 - 12 hours							
		PH 111	3	General Physics w/Calculus I	MA 171		FSM
		PH 114	1	General Physics Lab I	Prereq w/Con: PH 111		FSM
		PH 112	3	General Physics w/Calculus II	MA 172, PH 111		FSM
		PH 115	1	General Physics Lab II	Prereq w/Con: PH 112		FSM
		PH 113	3	General Physics w/Calculus III	MA 201, PH 112		FSM
		PH 116	1	General Physics Lab III	Prereq w/Con: PH 113		FSM
History, Social & Behavioral Sciences, Humanities & Fine Arts - 15 hours							
			3	HSBS	Choose 3 hours: History, Social or Behavior Science		FSM
			3	HFA	Choose 3 hours: Literature or Fine Art		FSM
			3		Choose 3 hour courses of HSBS/HFA that you have met prerequisites, from ARH, ARS*, CM, EH, ECN*, FL, GS, GY, HY, MU, PHL, PSC, PY, SOC, WS		
General Education Electives - 3 hours							
					Choose up to 3 hours of electives (Ex. FYE 101): Any courses that you have met prerequisites, and are not remedial coursework for Engineering curriculum.		
Engineering Core - 12 hours							
		EE 213	3	Electrical Circuit Analysis I	PH 112, Prereq w/Con: MA 238 & (MA 244 or CHE 244)		FSM
		ISE 321	3	Engineering Economy	Sophomore Standing		FSM
		EE 310	3	Solid State Fundamentals	PH 113, Prereq w/Con: MA 238		FS
		EE 382	3	Analytical Meth for Continuous Time Sys	EE 213, MA 238		FSM
Electrical Engineering Option - 43 hours							
**		EE 100	3	Fund of Computer, Electrical & Optical Eng	Prereq w/Con: MA 112, Coreq: EE 100L		FSM
**		CPE 112	3	Intro to Computer Programming in Engineering	MA 113, MA 115 or Level III Placement, Coreq: CPE 112L		FSM
**		EE 202	3	Intro to Digital Logic Design	CPE 112, EE 100		FSM
		EE 203	1	Digital Logic Design Lab	EE 202		FSM
		CPE 221	3	Computer Organization	EE 202		FSM
		EE 307	3	Electricity and Magnetism	EE 213		FSM
		EE 308	3	Electromagnetic Engineering	EE 307		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
		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 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 308, EE 310, EE 313, 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 or above ECE course only		
			3		300 - level or above ECE course only		
Technical Elective - 3 hours							
			3		200 - level or above 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.*

Electrical Engineering Program 2013/2014 (128 Hours)



Legend

- Freshman Comp
- Mathematics
- Chemistry
- Physics
- History, Social & Behavioral Science, Humanities & Fine Arts
- Free Electives
- Engineering Core
- Electrical Eng. Option
- Electives
- ③ Credit Hours
- Prerequisite
- Prereq w/concurrency



Department	Electrical & Computer	Prepared by	Jacob Kerstiens	Date	8/8/13
Program	Electrical Engineering	Approved by		Date	

College of Engineering Pathways

Electrical Engineering 2013-2014 Plan

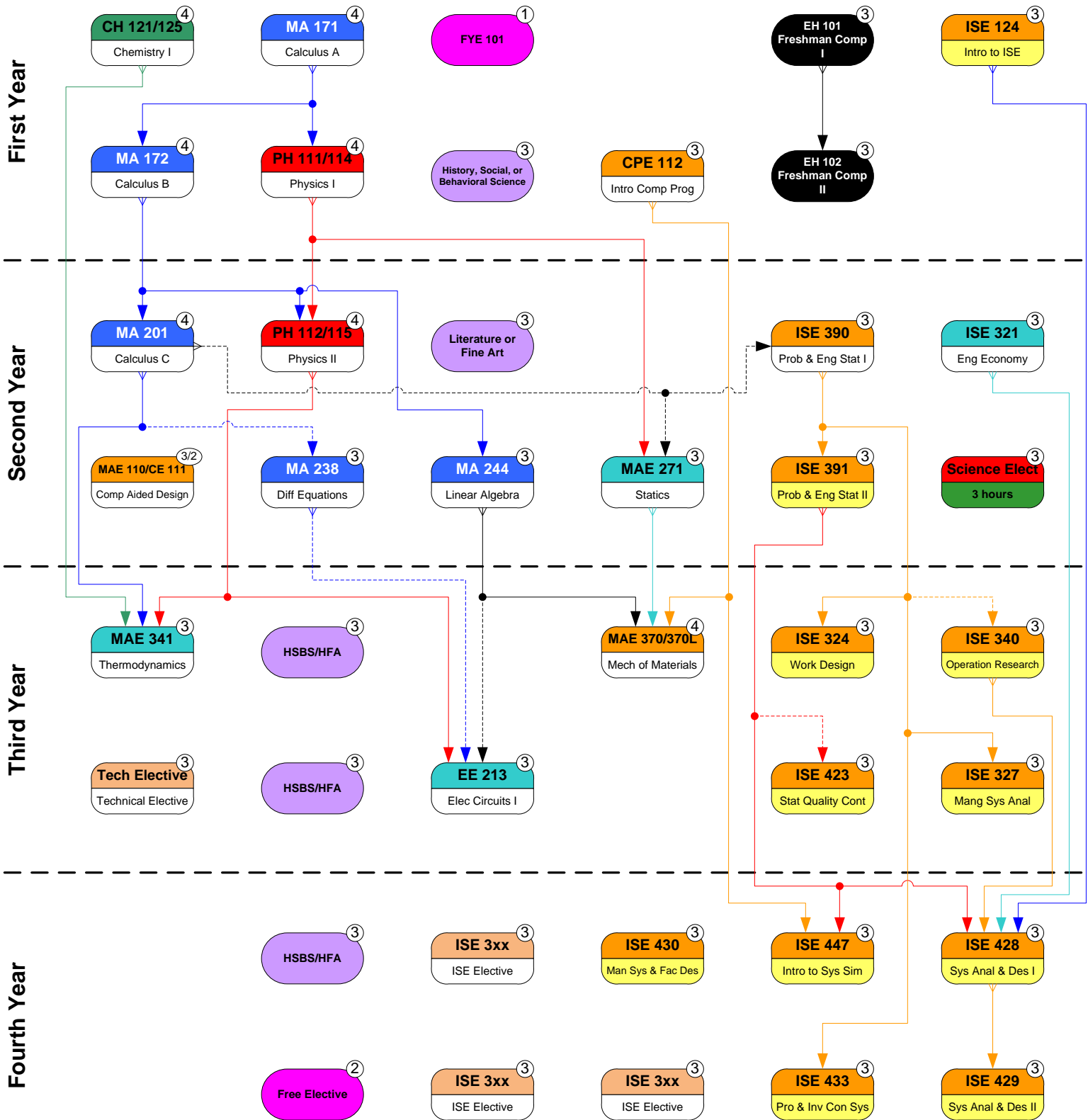
	Curriculum Pathway	Research Pathway	Internship Pathway	Co-op Pathway	
Milestone Year-1					
<input type="checkbox"/> 33 hours completed including: MA 171, CH 121/125, EE 100, HSBS/HFA, FYE 101, EH 101, Free Elec		<input type="checkbox"/> Meet with Faculty to discuss pathway choices <input type="checkbox"/> Meet with Career Development <input type="checkbox"/> Attend Career Services Workshop on Resume <input type="checkbox"/> Outline Resume <input type="checkbox"/> Participate in Career Fair			
MA 172, PH 111/114, CPE 112, HSBS/HFA, EH 102					
Milestone Year-2					
<input type="checkbox"/> 67 hours completed including: MA 201, PH 112/115, MA 244, EE 202, HSBS/HFA		<input type="checkbox"/> Meet with Faculty for Undergraduate research opportunities <input type="checkbox"/> Attend Career Services Workshop on Interviews <input type="checkbox"/> Professional Resume <input type="checkbox"/> Attend Career Fair <input type="checkbox"/> Co-op/Internship Offer (Summer Start)			
MA 238, PH 113/116, EE 213, CPE 221, EE 203, ISE 321					
Milestone Year-3					
Research Pathway <input type="checkbox"/> 100 hours completed including: EE 310, EE 382, EE 313, EE 307, CPE 323, CPE 325 EE 315, EE 383, EE 386, EE 385, EE 308, EE 384, EE 316 <input type="checkbox"/> Undergraduate Research <input type="checkbox"/> Attend JUMP Information Session		Internship Pathway <input type="checkbox"/> 100 hours completed from Curriculum Pathway <input type="checkbox"/> Summer Internship		Co-op Pathway <input type="checkbox"/> Obtain Faculty Mentor <input type="checkbox"/> 96 hours completed including: Work Semester (Summer) EE 310, EE 382, EE 313, EE 307, CPE 323, CPE 325 (Fall) Work Semester (Spring) EE 315, EE 383, EE 386, EE 385, EE 316 (Summer) <input type="checkbox"/> 2 Semesters of Co-op	
Milestone Year-4					
Research Pathway <input type="checkbox"/> 128 hours completed including: EE Track 1, EE Elec, Tech Elec, HSBS/HFA, HSBS/HFA EE Track 2, EE Elec, EE 494, HSBS/HFA, Free Elec <input type="checkbox"/> Undergraduate Research Complete <input type="checkbox"/> Senior Design Complete <input type="checkbox"/> Degree Complete <input type="checkbox"/> Begin Career or Graduate School		Internship Pathway <input type="checkbox"/> 128 hours completed from Curriculum Pathway <input type="checkbox"/> Summer Internship <input type="checkbox"/> Senior Design Complete <input type="checkbox"/> Degree Complete <input type="checkbox"/> Begin Career or Graduate School		Co-op Pathway <input type="checkbox"/> 112 hours completed including: Work Semester (Fall) EE 308, EE 384, EE Elec, EE Elec Tech Elec, HSBS/HFA (Spring) Work Semester (Summer) <input type="checkbox"/> Experiential Learning complete <input type="checkbox"/> Decision on Industry or Graduate School	
Milestone Year-5					
				Co-op Pathway <input type="checkbox"/> 128 hours completed including: EE 494, EE Elec, EE Elec, HSBS/HFA, Free Elec (Fall) <input type="checkbox"/> Senior Design Complete <input type="checkbox"/> Degree Complete <input type="checkbox"/> Begin Career or Graduate School	

Required	
Recommended	

Student A#				Student Name (Last, First MI)		Offered: F=Fall S=Spring M=Summer
Semester, Transfer or	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	FSM
		PH 114	1	General Physics Lab I	Prereq w/Con: PH 111	FSM
		PH 112	3	General Physics w/Calculus II	MA 172, PH 111	FSM
		PH 115	1	General Physics Lab II	Prereq w/Con: PH 112	FSM
Science Elective - 3 hours						
			3		BYS 119 or CH 123 or 300/400 level MA course	
History, Social & Behavioral Sciences, Humanities & Fine Arts - 15 hours						
			3	HSBS	Choose 3 hours: History, Social or Behavior Science	FSM
			3	HFA	Choose 3 hours: Literature or Fine Art	FSM
			3		Choose 3 hour courses of HSBS/HFA that you have met prerequisites, from ARH, ARS*, CM, EH, ECN*, FL, GS, GY, HY, MU, PHL, PSC, PY, SOC, WS	
			3			
			3			
General Education Electives - 3 hours						
					Choose up to 3 hours of electives (Ex. FYE 101): Any courses that you have met prerequisites, and are not remedial coursework for Engineering curriculum.	
Engineering Core - 12 hours						
		MAE 271	3	Statics	PH 111, Prereq w/Con: MA 201	FSM
		EE 213	3	Electrical Circuit Analysis I	PH 112, Prereq w/Con: MA 238 & (MA 244 or CHE 244)	FSM
		ISE 321	3	Engineering Economy	Sophomore Standing	FSM
		MAE 341	3	Thermodynamics I	MA 201, CH 121, CH 125, PH 112	FSM
**	Class has required lab section			Industrial & System Engineering Option - 46 hours		
**		CPE 112	3	Intro to Computer Programming in Engineering	MA 113, MA 115 or Level III Placement, Coreq: CPE 112L	FSM
Select One		MAE 111	3	Intro to Computational Tools	Prereq w/Con: MA 113 or Level II Placement	FSM
		CE 111	2	Civil Engineering Graphics	MA 112 or Level II Placement, Freshman CE Standing	FS
		ISE 124	3	Intro to Industrial & Systems Engineering	Prereq w/Con: MA 113	F
		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 370	4	Mechanics of Materials	MAE/CE 271, MA 244 & (MAE 111 or CPE 112), 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 124, ISE 321, ISE 340, ISE 391, Senior Standing	F
		ISE 429	3	Systems Analysis & Design II	ISE 428	S
		ISE 430	3	Manufacturing Systems and Facilities Design	Senior Standing	F
		ISE 433	3	Production & Inventory Control Systems	ISE 390	S
		ISE 447	3	Intro to Systems Simulation	CPE 112, 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. May select a maximum of 6 hours from the following: EH 301, ACC 211, MTK 301, MGT 363, or MGT 462.		
Technical Elective - 3 hours						
			3	200-level or above Engineering or Science course		

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

Industrial & Systems Engineering Program 2013/2014 (127 Hours)



Legend




- Freshman Comp
- Mathematics
- Chemistry
- Physics
- History, Social, Behavior Science/Humanity & Fine Art
- Free Elective
- Engineering Core
- Industrial & Systems Eng Option
- Electives
- Offered that Semester Only
- Credit Hours
- Prerequisite
- Prereq w/concurrency



Department Industrial & Systems	Prepared by Jacob Kerstiens	Date 8/8/13
Program Industrial & Systems Engineering	Approved by	Date

College of Engineering Pathways

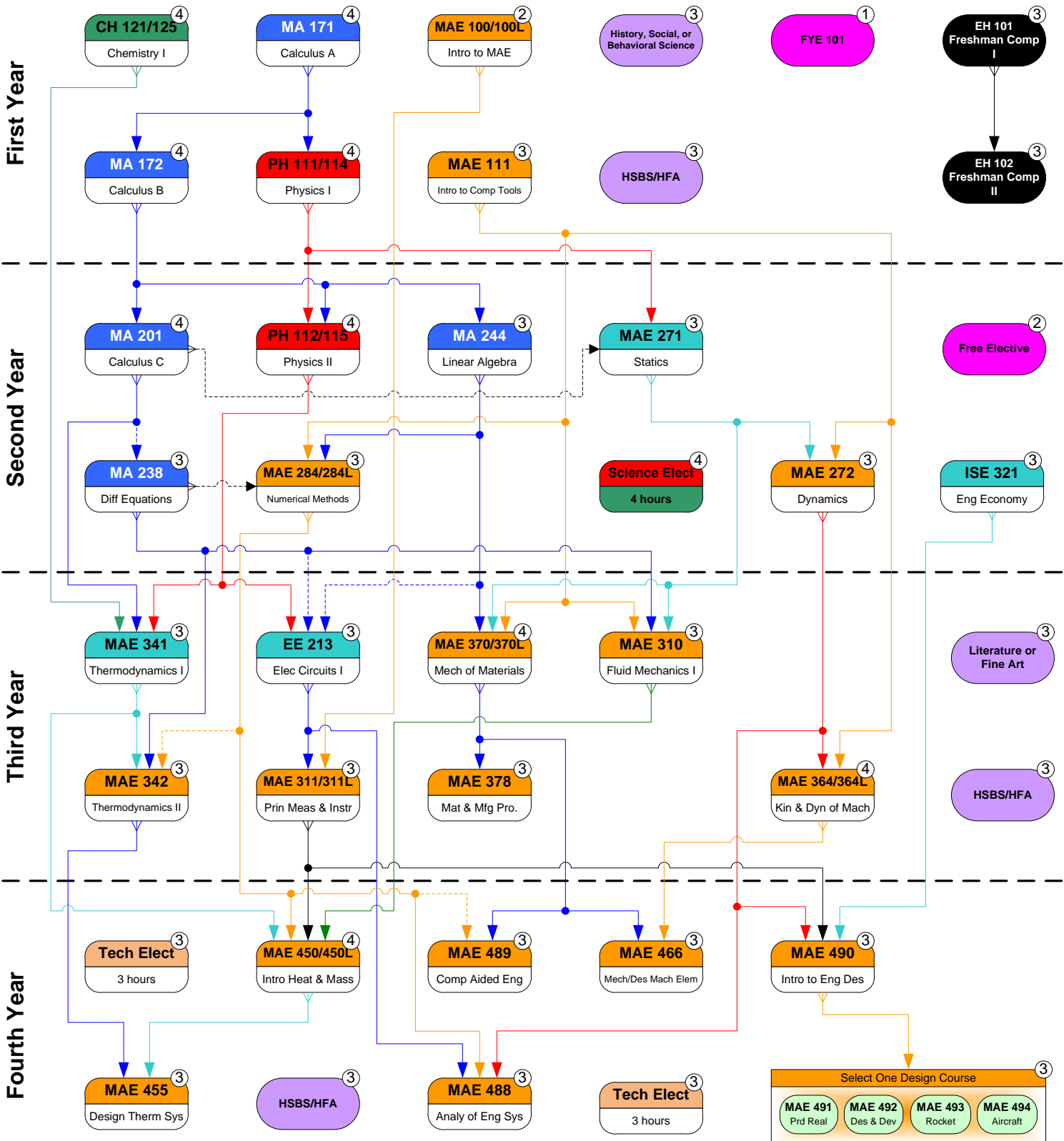
Industrial & Systems Engineering 2013-2014 Plan

	Curriculum Pathway	Research Pathway	Internship Pathway	Co-op Pathway					
Milestone Year-1									
<input type="checkbox"/> 32 hours completed including: MA 171, CH 121/125, FYE 101, EH 101, ISE 124			<input type="checkbox"/> Meet with Faculty to discuss pathway choices <input type="checkbox"/> Meet with Career Development <input type="checkbox"/> Attend Career Services Workshop on Resume <input type="checkbox"/> Outline Resume <input type="checkbox"/> Participate in Career Fair						
MA 172, PH 111/114, CPE 112, EH 102, HSBS/HFA									
Milestone Year-2									
<input type="checkbox"/> 64 hours completed including: MA 201, PH 112/115, ISE 390, ISE 321, Sci Elec			<input type="checkbox"/> Meet with Faculty for Undergraduate research opportunities						
MA 238, MAE 271, ISE 391, MA 244, MAE/CE 111			<input type="checkbox"/> Attend Career Services Workshop on Interviews <input type="checkbox"/> Professional Resume <input type="checkbox"/> Attend Career Fair <input type="checkbox"/> Co-op/Internship Offer (Summer Start)						
<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>Research Pathway</p> </div> <div style="text-align: center;">  <p>Internship Pathway</p> </div> <div style="text-align: center;">  <p>Co-op Pathway</p> </div> </div>									
Milestone Year-3									
Research Pathway <input type="checkbox"/> 95 hours completed including: MAE 341, ISE 340, ISE 324, MAE 370, HSBS/HFA EE 213, ISE 423, ISE 327, HSBS/HFA, Tech Elec <input type="checkbox"/> Undergraduate Research <input type="checkbox"/> Attend JUMP Information Session		Internship Pathway <input type="checkbox"/> 95 hours completed from Curriculum Pathway <input type="checkbox"/> Summer Internship		Co-op Pathway <input type="checkbox"/> Obtain Faculty Mentor <input type="checkbox"/> 91 hours completed including: Work Semester (Summer) ISE 340, ISE 324, ISE Elec, HSBS/HFA, HSBS/HFA Work Semester (Spring) EE 213, MAE 341, MAE 370, Free Elec <input type="checkbox"/> 2 Semesters of Co-op					
Milestone Year-4									
Research Pathway <input type="checkbox"/> 127 hours completed including: ISE 430, ISE 447, ISE 428, ISE Elec, HSBS/HFA ISE 429, ISE 433, Free Elec, ISE Elec, ISE Elec, HSBS/HFA <input type="checkbox"/> Undergraduate Research Complete <input type="checkbox"/> Senior Design Complete <input type="checkbox"/> Degree Complete <input type="checkbox"/> Begin Career or Graduate School		Internship Pathway <input type="checkbox"/> 127 hours completed from Curriculum Pathway <input type="checkbox"/> Summer Internship <input type="checkbox"/> Senior Design Complete <input type="checkbox"/> Degree Complete <input type="checkbox"/> Begin Career or Graduate School		Co-op Pathway <input type="checkbox"/> 103 hours completed including: Work Semester (Fall) ISE 423, ISE 327, Tech Elec, HSBS/HFA Work Semester (Summer) <input type="checkbox"/> Experiential Learning complete <input type="checkbox"/> Decision on Industry or Graduate School					
Milestone Year-5									
				Co-op Pathway <input type="checkbox"/> 127 hours completed including: ISE 447, ISE 428, ISE 430, HSBS/HFA ISE 429, ISE 433, ISE Elec, ISE Elec <input type="checkbox"/> Senior Design Complete <input type="checkbox"/> Degree Complete <input type="checkbox"/> Begin Career or Graduate School					
		<table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="padding: 2px;">Required</td> <td style="width: 20px; height: 15px; background-color: yellow;"></td> </tr> <tr> <td style="padding: 2px;">Recommended</td> <td style="width: 20px; height: 15px; background-color: #a4c6e0;"></td> </tr> </table>		Required		Recommended			
Required									
Recommended									

Student A#				Student Name (Last, First MI)			Offered: F=Fall S=Spring M=Summer
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		FSM
		PH 114	1	General Physics Lab I	Prereq w/Con: PH 111		FSM
		PH 112	3	General Physics w/Calculus II	MA 172, PH 111		FSM
		PH 115	1	General Physics Lab II	Prereq w/Con: PH 112		FSM
Science Elective - 4 hours							
			3		Choose from BYS 119, CH 123/126, or PH 113/116		FSM
			1				
History, Social & Behavioral Sciences, Humanities & Fine Arts - 15 hours							
			3	HSBS	Choose 3 hours: History, Social or Behavior Science		FSM
			3	HFA	Choose 3 hours: Literature or Fine Art		FSM
			3		Choose 3 hour courses of HSBS/HFA that you have met prerequisites, from ARH, ARS*, CM, EH, ECN*, FL, GS, GY, HY, MU, PHL, PSC, PY, SOC, WS		
			3				
			3				
General Education Electives - 3 hours							
					Choose up to 3 hours of electives (Ex. FYE 101): Any courses that you have met prerequisites, and are not remedial coursework for Engineering curriculum.		
Engineering Core - 12 hours							
		MAE 271	3	Statics	PH 111, Prereq w/Con: MA 201		FSM
		MAE 341	3	Thermodynamics I	MA 201, CH 121, CH 125, PH 112		FSM
		EE 213	3	Electrical Circuit Analysis I	PH 112, Prereq w/Con: MA 238 & (MA 244 or CHE 244)		FSM
		ISE 321	3	Engineering Economy	Sophomore Standing		FSM
**	Class has required lab section			Mechanical Engineering Option - 53 hours			
**		MAE 100	2	Intro to Mechanical Engineering	Prereq w/Con: MA 113 or Level II Placement, Coreq: MAE 100L		FS
		MAE 111	3	Intro to Computational Tools	Prereq w/Con: MA 113 or Level II Placement		FSM
		MAE 272	3	Dynamics	MAE/CE 271 & (MAE 111 or CPE 112)		FSM
**		MAE 284	3	Numerical Methods	MA 244 & (MAE 111 or CPE 112); Prereq w/Con: MA 238 & Coreq: MAE 284L		FSM
		MAE 310	3	Fluid Mechanics I	MA 238, MAE/CE 271 & (MAE 111 or CPE 112 or CHE 198)		FSM
**		MAE 311	3	Principles of Measurement & Instrumentation	EE 213 & (MAE 100 or 200), Coreq: MAE 311L		FSM
		MAE 342	3	Thermodynamics II	MAE 341, MA 238, Prereq w/Con: MAE 284		FSM
**		MAE 364	4	Kinematics & Dynamics of Machines	MAE 111, MAE/CE 272, Coreq: MAE 364L		FS
**		MAE 370	4	Mechanics of Materials	MAE/CE 271, MA 244 & (MAE 111 or CPE 112), 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 310, MAE 311, MAE 341, 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	MAE/CE 272, MAE 311, ISE 321		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 or above Science or Engineering course		
			3				

*All prerequisite classes must be completed with a "C" or higher grade.
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Mechanical Engineering Program 2013/2014 (129 Hours)



Legend


- Freshman Comp
- Mathematics
- Chemistry / Biology
- Physics
- History, Social, Behavior Science/Humanity & Fine Art
- Free Elective
- Engineering Core
- Mechanical Eng. Option
- Electives
- 3 Credit Hours
- Prerequisite
- Prereq w/concurrency



Department Mechanical & Aerospace	Prepared by Jacob Kerstiens	Date 8/8/13
Program Mechanical Engineering	Approved by	Date

College of Engineering Pathways

Mechanical Engineering 2013-2014 Plan

	Curriculum Pathway	Research Pathway	Internship Pathway	Co-op Pathway			
Milestone Year-1							
<input type="checkbox"/>	34 hours completed including: MA 171, CH 121/125, MAE 100, HSBS/HFA, FYE 101, EH 101		<input type="checkbox"/>	Meet with Faculty to discuss pathway choices			
	MA 172, PH 111/114, MAE 111, HSBS/HFA, EH 102		<input type="checkbox"/>	Meet with Career Development			
			<input type="checkbox"/>	Attend Career Services Workshop on Resume			
			<input type="checkbox"/>	Outline Resume			
			<input type="checkbox"/>	Participate in Career Fair			
Milestone Year-2							
<input type="checkbox"/>	66 hours completed including: MA 201, PH 112/115, MA 244, MAE 271, Free Elec		<input type="checkbox"/>	Meet with Faculty for Undergraduate research opportunities			
	MA 238, MAE 284, Sci Elec, MAE 272, ISE 321		<input type="checkbox"/>	Attend Career Services Workshop on Interviews			
			<input type="checkbox"/>	Professional Resume			
			<input type="checkbox"/>	Attend Career Fair			
			<input type="checkbox"/>	Co-op/Internship Offer (Summer Start)			
							
Milestone Year-3							
	Research Pathway		Internship Pathway		Co-op Pathway		
<input type="checkbox"/>	98 hours completed including: MAE 341, EE 213, MAE 370, MAE 310, HSBS/HFA		<input type="checkbox"/>	98 hours completed from Curriculum Pathway	<input type="checkbox"/>	Obtain Faculty Mentor	
	MAE 342, MAE 311, MAE 378, MAE 364, HSBS/HFA		<input type="checkbox"/>	Summer Internship	<input type="checkbox"/>	93 hours completed including: Work Semester (Summer)	
	<input type="checkbox"/>					MAE 341, MAE 364, MAE 310, MAE 370 (Fall)	
	<input type="checkbox"/>					Work Semester (Spring)	
						EE 213, MAE 311, MAE 342, MAE 378 (Summer)	
						<input type="checkbox"/>	2 Semesters of Co-op
Milestone Year-4							
	Research Pathway		Internship Pathway		Co-op Pathway		
<input type="checkbox"/>	129 hours completed including: MAE 450, MAE 489, MAE 466, MAE 490, Tech Elec		<input type="checkbox"/>	129 hours completed from Curriculum Pathway	<input type="checkbox"/>	118 hours completed including: Work Semester (Fall)	
	MAE 455, MAE 488, MAE 49x, Tech Elec, HSBS/HFA		<input type="checkbox"/>	Summer Internship		MAE 490, MAE 450, MAE 489, Tech Elec (Spring)	
	<input type="checkbox"/>		<input type="checkbox"/>	Senior Design Complete		MAE 488, MAE 455, MAE 466, HSBS/HFA (Summer)	
	<input type="checkbox"/>		<input type="checkbox"/>	Degree Complete		<input type="checkbox"/>	Experiential Learning complete
	<input type="checkbox"/>		<input type="checkbox"/>	Begin Career or Graduate School		<input type="checkbox"/>	Decision on Industry or Graduate School
Milestone Year-5							
					Co-op Pathway		
					<input type="checkbox"/>	129 hours completed including: MAE 49x, Tech Elec, HSBS/HFA, HSBS/HFA (Fall)	
					<input type="checkbox"/>	Senior Design Complete	
					<input type="checkbox"/>	Degree Complete	
					<input type="checkbox"/>	Begin Career or Graduate School	

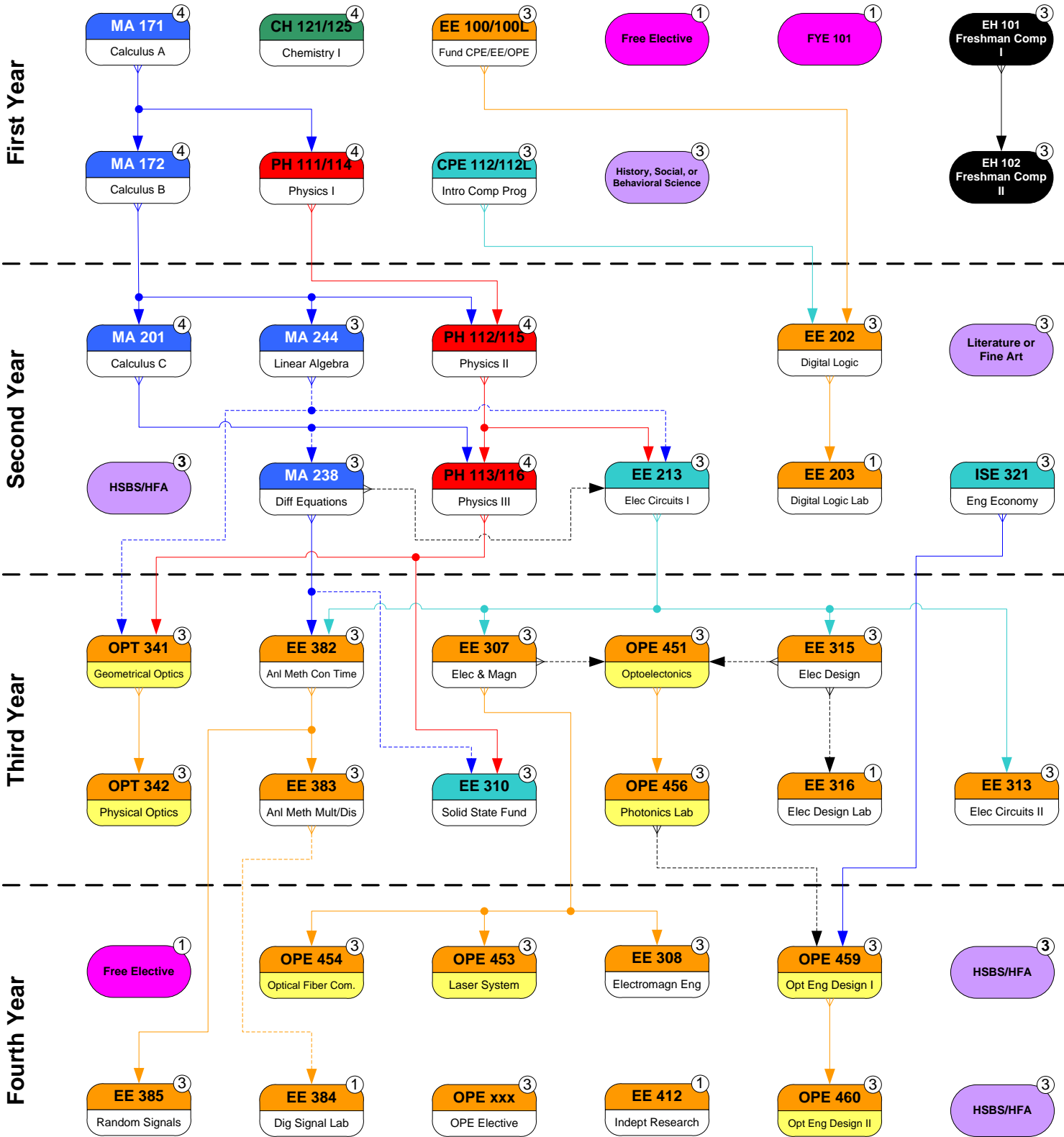
Required	
Recommended	

Student A#				Student Name (Last, First MI)			Offered: F=Fall S=Spring M=Summer	
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 - 12 hours								
		PH 111	3	General Physics w/Calculus I	MA 171		FSM	
		PH 114	1	General Physics Lab I	Prereq w/Con: PH 111		FSM	
		PH 112	3	General Physics w/Calculus II	MA 172, PH 111		FSM	
		PH 115	1	General Physics Lab II	Prereq w/Con: PH 112		FSM	
		PH 113	3	General Physics w/Calculus III	MA 201, PH 112		FSM	
		PH 116	1	General Physics Lab III	Prereq w/Con: PH 113		FSM	
History, Social & Behavioral Sciences, Humanities & Fine Arts - 15 hours								
			3	HSBS	Choose 3 hours: History, Social or Behavior Science		FSM	
			3	HFA	Choose 3 hours: Literature or Fine Art		FSM	
			3		Choose 3 hour courses of HSBS/HFA that you have met prerequisites, from ARH, ARS*, CM, EH, ECN*, FL, GS, GY, HY, MU, PHL, PSC, PY, SOC, WS			
			3					
			3					
General Education Electives - 3 hours								
					Choose up to 3 hours of electives (Ex. FYE 101):			
					Any courses that you have met prerequisites, and are not remedial coursework for Engineering curriculum.			
Engineering Core - 12 hours								
**				Class has required lab section				
**		CPE 112	3	Intro to Computer Programming in Engineering	MA 113, MA 115 or Level III Placement, Coreq: CPE 112L		FSM	
		EE 213	3	Electrical Circuit Analysis I	PH 112, Prereq w/Con: MA 238 & (MA 244 or CHE 244)		FSM	
		EE 310	3	Solid State Fundamentals	PH 113, Prereq w/Con: MA 238		FS	
		ISE 321	3	Engineering Economy	Sophomore Standing		FSM	
Electrical Engineering Requirements - 22 hours								
		EE 100	3	Fund of Computer, Electrical & Optical Eng	Prereq w/Con: MA 112, Coreq: EE 100L		FSM	
		EE 202	3	Intro to Digital Logic Design	CPE 112, EE 100		FSM	
		EE 203	1	Digital Logic Design Lab	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	
		EE 382	3	Analytical Meth for Continuous Time Sys	EE 213, MA 238		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	
Optical Engineering Option - 33 hours								
**		EE 307	3	Electricity and Magnetism	EE 213		FSM	
		EE 308	3	Electromagnetic Engineering	EE 307		FS	
		EE 313	3	Electrical Circuit Analysis II	EE 213		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	
		OPT 341	3	Geometrical Optics	PH 113, Prereq w/Con: (PH 305 or MA 244)		F	
		OPT 342	3	Physical Optics	OPT 341		S	
Optical Engineering Elective - 3 hours								
			3		300 - level or above approved by advisor.			

*All prerequisite classes must be completed with a "C" or higher grade.
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Updated: 7/11/2013

Optical Engineering Program 2013/2014 (128 Hours)



Legend

- Freshman Comp
- Mathematics
- Chemistry
- Physics
- History, Social & Behavioral Science, Humanities & Fine Arts
- Free Elective
- Engineering Core
- Optical Engineering Option
- Offered that semester only
- ③ Credit Hours
- Prerequisite
- - - - - → Prereq w/concurrency



Department	Electrical & Computer	Prepared by	Jacob Kerstiens	Date	8/8/13
Program	Optical Engineering	Approved by		Date	

