

# Mechanical Engineering - Bachelor of Science Curriculum ~ (Catalog Year: 2015-2016)

*Although this is a suggested outline - All courses listed below are **REQUIRED** for this degree. Refer to the Undergraduate Catalog for verification*

**Student's Name:** \_\_\_\_\_ **UFID:** \_\_\_\_\_ **Today's Date:** \_\_\_\_\_

①The tracking courses for MAE are: MAC2311, MAC2312, MAC2313, MAP2302, PHY2048, PHY2049, CHM2045 & Sci Elec: (CHM2046, BSC2010, PHY3101 or AST3018/3019) \*asterisk means that they **require a Grade of "C" or better**. ②All undergraduate students (except those transferring to UF with an A.A. degree from a Florida State/Community College or University) are required to satisfy: 15cr-Humanities/Social Science(H/SS); 3cr-Diversity(D); 3cr-International(N). {Some (D/N) courses will double count with H/SS courses, check the undergraduate catalog for further explanation, under "General Education Requirement"}. ③Writing Requirement-24,000 words(WR). ④Summer Requirement-9cr {Must be taken at any State of Florida University not State/Community Colleges}.

Upper Division Courses that have an "#" next to them - **requires a grade of "C" or better**.

✓	Course Prefix and Number	Cr	Course Title	Projected Offer	Pre-Requisites
<b>Semester 1 (15cr)</b>					
	*CHM 2045 or 2095	3	General Chemistry 1 / Chemistry for Engineers 1	F S Su	Chemistry Readiness Assessment
	CHM 2045L	1	General Chemistry Lab 1	F S Su	
	*MAC 2311	4	Analytical Geometry & Calculus 1	F S Su	Mathematics Placement Exam (ALEKS)
	GE – C	3	Composition-[WR] (Ex: ENC1101 or any composition course)	F S Su	ACT/SAT scores do not exempt this requirement
	IUF 1000 (GE – H)	3	What Is The Good Life (Required)	F S Su	All incoming freshmen w/out an AA degree
	EML 2920	1	Departmental & Professional Orientation	F S	
<b>Semester 2 (14cr)</b>					
	*MAC 2312	4	Analytical Geometry & Calculus 2	F S Su	MAC2311
	*PHY 2048	3	Physics with Calculus 1	F S Su	MAC2311
	PHY 2048L or 2053L	1	Physics Lab 1	F S Su	
	EML 2023	3	Computer Aided Graphics & Design (Laptop Req'd)	F S Su	
	ENC 3246 [offered by the Writing Program]	3	Professional Communication for Engineers	F S Su	ENC1101 or test score equivalency
<b>Semester 3(Summer) (9cr)</b>					
	GE – SS	3	Social & Behavioral Sciences (Your Choice)	F S Su	
	EMA 3010	3	Materials	F S Su	CHM2045
	*Science Elective (Pick 1)	3	☐CHM2046/2096 ☐BSC2010 ☐PHY3101 ☐AST3018/3019	F S Su	Check catalog for Pre-requisites
<b>Semester 4 (15cr)</b>					
	*MAC 2313	4	Analytical Geometry & Calculus 3	F S Su	MAC2312
	*PHY 2049	3	Physics with Calculus 2	F S Su	MAC2312 & PHY2048
	PHY 2049L or 2054L	1	Physics Lab 2	F S Su	
	COP 2271(Lab is optional) [offered by ISE Dept]	2	Computer Programming for Engineers Matlab <i>No Substitutions-Degree Audits will be updated to reflect this change</i>	F S Su	MAC2312
	#EGM 2511	3	Engineering Mechanics - Statics	F S Su	PHY2048
	EML 2322L	2	Design & Manufacturing Lab	F S Su	EML2023 & ENC3246 & ASE/ME majors only
<b>Semester 5 (15cr)</b>					
	GE – H	3	Humanities (State Core)	F S Su	
	*MAP 2302	3	Elementary Differential Equations (no substitutions allowed)	F S Su	MAC2312
	#EGM 3344	3	Intro to Numerical Methods of Eng. Analysis	F S	MAC2313 & COP2271-Matlab
	#EGM 3520	3	Mechanics of Materials	F S Su	EGM2511 & MAC2313
	#EML 3100	3	Thermodynamics	F S Su	CHM2045 & MAC2313 & PHY2048
<b>Semester 6 (15cr)</b>					
	GE – SS	3	Social & Behavioral Sciences (Your Choice)	F S Su	
	EEL 3003	3	Elements of Electrical Engineering <i>(Approved substitution: EEL3111C - Circuits 1 with Lab)</i>	F S Su	MAC2313 & PHY2049
	#EGM 3401	3	Engineering Mechanics - Dynamics	F S	EGM2511 & MAC2313
	EGN 3353C	3	Fluid Mechanics	F S	EGM2511 & MAC2313 & EML3100
	EML 3301C	3	Mechanics of Materials Lab (Laptop Req'd)	F S	EGM3344 & EGM3520 & ENC3246
<b>Semester 7 (15cr)</b>					
	GE – H or SS	3	Humanities or Social and Behavioral Sciences	F S Su	
	EML 3005	3	Mechanical Engineering Design 1	F S	COP2271-Matlab & EGM3520 & EML2322L
	EML 4140	3	Heat Transfer	F S	(EAS4101 or EGN3353C) & MAP2302
	EML 4220	3	Vibrations	F S	EGM3401 & EGM3520 & EGM3344 & MAP2302
	EML 4312	3	Control of Mechanical Eng. Systems	F S	EGM3401 & EGM3344 & MAP2302
<b>Semester 8 (15cr)</b>					
	EML 4147C	3	Thermal Systems Design & Lab	F S	EML3100 & EML3301C & EML4140
	EML 4501 or EML 4912	3	Mechanical System Design or IPPD 2	F S	EGM3401 & EGN3353C & EML2322L & EML3005
	EML 4507	3	Finite Element Analysis & Design	F S	COP2271-Matlab & EGM3520 & EGM3344
	Tech Elective	6	See back page for some approved courses (others will require a petition)		Check catalog for Pre-requisites
<b>Semester 9 (15cr)</b>					
	EML 4321	3	Manufacturing Engineering	F S	EGM3520 & EMA3010 & EML2322L
	EML 4394C <b>Substitution</b> →	3	Specialization Elective: (Choose any 4000, 5000 or 6000 level course with an EAS, EGM or EML prefix)	F S Su	Engineering Research, Individual Study, Internship and Co-op credits will not count
	EML 4314C	3	Dynamics & Controls System Design Lab	F S	EML3301C & EML4312
	EML 4502 or MAP 4305	3	Design Realization or Differential Equations for Engineers & Physical Scientist <i>(if you've already taken EGM4313 it counts for this course)</i>	F S	EML4501 or EAS4700 or EAS4710 C or better in EGM3344
	Tech Elective	3	See back page for some approved courses (others will require a petition)		Check Catalog for Pre-requisites

**Total Hours 128**

*Revised 10/27/2015*

## MAE Approved Technical Electives for Mechanical Engineering (BSME)

(Check the catalog for the appropriate pre-requisites @ <https://catalog.ufl.edu/ugrad/current/courses/Pages/course-descriptions.aspx>)

The courses on this page **WILL NOT** double count for the **Science Elective** or the **Specialization Elective**, but they will double count for the Biomechanics Minor

If you want to take a course that is not listed on this page, you must complete a **“Petition To Substitute For A Required Course”** form

✓	COURSE	CR	COURSE TITLE
	BME 5580	3	Microfluids and BioMEMS
	EAS 4132	3	Compressible Flow
	EAS 4101	3	Aerodynamics
	EAS 4200C	3	Aerospace Structures
	EAS 4240	3	Aerospace Structural Composites 1
	EAS 4300	3	Aerospace Propulsion
	EAS 4400	3	Stability and Control of Aircraft
	EAS 4412	3	Dynamics and Control of Space Vehicles
	EAS 4510	3	Astrodynamics
	EAS 4530	3	Space Systems Design
	EAS 4700	3	Aerospace Design 1
	EAS 4710	3	Aerospace Design 2
	EAS 4939	var	Special Topics
	EGM 4473	3	Experimental Optimum Engineering Design
	EGM 4590	3	Biodynamics
	EGM 4592	3	Bio-Solid Mechanics
	EGM 4853	3	Bio-Fluid Mechanics and Bio-Heat Transfer
	EML 3262	3	Kinematics/Dynamics of Machinery
	EML 3806	3	Geometric Modeling of Robotic Manipulators
	EML 4410	3	Combustion Engineering
	EML 4416	3	Solar Energy
	EML 4450	3	Energy Conversion
	EML 4600	3	Refrigeration Air Conditioning Fundamentals
	EML 4601	3	Heat & Air Conditioning System Design
	EML 4737	3	Hydraulics & Pneumatics
	EML 4738	3	Hydraulic & Mechanical Power Transmission
	EML 4912	3	Integrated Product & Process Design 1 (IPPD 1)
	EML 4926	3	Mechanical Consulting Practice
	EML 4930	3	Electronic Packaging / Special Topics
	*EGN 4912	var	Engineering Research
	*EML 4945	1	Internship/Co-op Work Experience
	*EAS/EML 4949	1	3 cr total combined will count towards degree
<b>*Note: A max of 8cr total for 4912/4945/4949 will count towards your degree</b>			
	EAS/EGM/EML	---	All 5000 and 6000 level courses offered by MAE
	ABE 3612C	4	Heat & Mass Transfer in Biological Systems
	APK 2100C	4	Applied Human Anatomy with Lab
	APK 2105C	4	Applied Human Physiology & Lab
	APK 3220C	3	Biomechanical Basis of Movement
	ART 3807C	3	Media Experiments in Art & Technology
	AST 3018	3	Astronomy and Astrophysics 1
	AST 3019	3	Astronomy and Astrophysics 2
	BCH 4024	4	Intro to Biochemistry and Molecular Biology
	BSC 2010	3	Integrated Principles of Biology 1
	BSC 2010L	1	Integrated Principles of Biology 1 Lab
	BSC 2011	3	Integrated Principles of Biology 2
	BSC 2011L	1	Integrated Principles of Biology 2 Lab
	BSC 2044L	2	Accelerated, Integrated Principles of Biology Lab
	CDA 3101	3	Intro to Computer Organization
	CGN 4101	3	Civil Engineering Cost Analysis
	CHM 2046	3	General Chemistry 2
	CHM 2046L	1	General Chemistry 2 Lab

✓	COURSE	CR	COURSE TITLE
	CHM 2054L	2	Accelerated General Chemistry Laboratory
	CHM 2096	3	Chemistry for Engineers 2
	CHM 2200	3	Basic Organic Chemistry
	CHM 2200L	1	Basic Organic Chemistry Lab
	CHM 2210	3	Organic Chemistry 1
	CHM 2210L	1	Organic Chemistry 1 Lab
	CHM 3120	3	Analytical Chemistry
	CHM 3120L	1	Analytical Chemistry Lab
	CHM 3217	4	Organic Chemistry/Biochemistry 1
	CHM 3218	4	Organic Chemistry/Biochemistry 2
	CHM 4411	4	Physical Chemistry
	EEE 3396	3	Solid State Electronic Devices
	EEL 3112	4	Circuits, Systems and Signals
	EEL 3211	3	Basic Electric Energy Engineering
	EEL 3701C	4	Digital Logic and Computer Systems
	EEL 3744C	4	Microprocessor Applications
	EEL 5666C	4	Intelligent Machine Design Lab
	EES 4201	3	Water Chemistry
	EIN 4354	3	Engineering Economy
	EGN 4641	3	Engineering Entrepreneurship
	EGN 4643	3	Engineering Innovation
	EGS 4038	3	Engineering Leadership
	EMA 3123	3	Metallurgical Engineering
	EMA 4121	3	Interfacial Engineering
	EMA 4223	3	Mechanical Behavior of Materials
	EMA 4714	3	Materials Selection and Failure Analysis
	ENU 4001	4	Nuclear Engineering Analysis 1
	ESI 4161	3	Industrial Application of Microprocessors
	ESI 4221C	3	Industrial Quality Control
	ESI 4327C	4	Matrix & Numerical Methods in Systems Eng
	MAA 4102	3	Intro Adv Calculus for Eng & Phys Scientists 1
	MAA 4211	3	Advanced Calculus 1
	MAA 4212	3	Advanced Calculus 2
	MAP 4305	3	Diff Equations for Eng & Physical Scientists
	MAS 3114	3	Computational Linear Algebra
	MAS 4105	4	Linear Algebra 1
	MAS 4107	3	Linear Algebra 2
	MAS 4156	3	Intro Vector Analysis
	NSC 2121	3	Naval Ships Systems 2 - Weapons
	NSC 2122	3	Naval Ships Systems 1 - Engineering
	OTH 3413C	3	Applied Kinesiology
	OTH 4412L	2	Musculoskeletal Anatomy Lab
	PHY 3101	3	Intro to Modern Physics
	PHY 4550	3	Cryogenics
	PHZ 4710	3	Intro to Biophysics
	PKG 3001	3	Principles of Packaging
	STA 3032	3	Engineering Statistics