Cover Sheet: Request 10393

Mechanical Engineering

Info

Process	Major Curriculum|Modify|Ugrad/Pro
Status	Pending
Submitter	Carroll,Bruce F bfc@ufl.edu
Created	9/3/2015 5:48:44 PM
Updated	10/26/2015 3:30:59 PM
Description	Modification to curriculum

Actions

Step	Status	Group	User	Comment	Updated
Department	Approved	ENG - Mechanical and Aerospace Engineering 011902000	Carroll, Bruce F		9/3/2015
No document changes					
College	Approved	ENG - College of Engineering	Caple, Elizabeth		10/7/2015
Replaced BS-ME-revisions-8-11-2015.pdf Replaced Proposed Changes to the Curriculum in the BS Mechanical Engineering Degree Narrative Discussion.pdf Added Proposed Changes to the Curriculum in the BS Mechanical Engineering Degree Narrative Discussion.pdf Added BS-ME-revisions-10-5-2015.pdf Added BSME Proposed Curriculum Changes - Catalog Markup.docx					10/5/2015 10/5/2015 10/5/2015 10/5/2015 10/5/2015
University Curriculum Committee	Comment	PV - University Curriculum Committee (UCC)	Baker, Brandi N	Added to November agenda.	10/26/2015
No document changes					
University Curriculum Committee	Pending	PV - University Curriculum Committee (UCC)			10/26/2015
No document changes					
Office of the Registrar					
No document changes					
Student Academic Support System					
No document changes					
Catalog					
No document changes					
Academic Assessment Committee Notified					
No document changes					
College Notified					

Step	Status	Group	User	Comment	Updated
No document changes					

Major|Modify_Curriculum for request 10393

Info

Request: Mechanical Engineering
Submitter: Carroll,Bruce F bfc@ufl.edu
Created: 9/3/2015 5:48:44 PM
Form version: 1

Responses

Major Name: Mechanical Engineering
Major Code: ME
Degree Program Name : Bachelor of Science Mechanical Engineering
Effective Term : Earliest Available
Effective Year : Earliest Available
Proposed Changes : Removal of two courses (EGM4313 and EML4304C) to be replaced by a specialization elective and a design realization course. Other minor changes to sequence of courses are also included.
Pedagogical Rationale/Justification: The rationale for these changes are to provide increased flexibility for students in selecting a specialization area and to provide a senior design experience that more closely resemble industrial practice.
Impact on Enrollment, Retention, Graduation: No anticipate impact on enrollment, retention, or graduation rates. There is also no impact on availability of seats in courses taught by other colleges.

Proposed Changes to the Curriculum in the BS Mechanical Engineering Degree

Narrative Discussion

The following narrative explains the proposed changes to the curriculum for the undergraduate degree in mechanical engineering. This narrative explains the information contained in the accompanying side-by-side comparison between the current (2015 catalog year) and the proposed changes. The semesters below refer to terms in the proposed revision.

- Semester 3
    - Change in recommended semester for these courses
- Semester 4
    - COP2271 Computer Programming for Engineers - footnote revised
- Semester 5
    - EGM3344 Introduction to Numerical Methods of Engineering Analysis - require C or better in this course
    - EGM3520 Mechanics of Materials - require C or better in this course
    - Humanities (State Core GE-H) - moved from semester 8 to semester 5
- Semester 6
    - EEL3003 Elements of Electrical Engineering – moved from semester 4 to semester 6
    - EML3301C Mechanics of Materials Laboratory – added E6 writing requirement
- Semester 7
    - EML3005 Mechanical Engineering Design 1 – change of course name (formerly Mechanical Design)
    - Humanities or Social and Behavioral Sciences – moved from semester 9 to semester 7
- Semester 8
    - EML4147C Thermal Systems Design and Laboratory – change of course name (formerly Thermo-Heat Transfer Design and Laboratory)
    - EML4501 Mechanical Engineering Design 2 – change of course name (formerly Mechanical System Design)
    - Technical Elective – change from 3 to 6 hours
- Semester 9
    - EML4314C Dynamics and Controls System Design Laboratory – moved from semester 8 to semester 9
    - EML4502 Mechanical Engineering Design 3 – new course
    - Specialization Elective – new course
    - Technical Electives – change from 6 to 3 hours
- Notes:
    - EGM4313 Intermediate Engineering Analysis is no longer required
    - EML4304C Thermo/Fluids Design and Laboratory is no longer required
    - no change in total hours for degree

Mechanical Engineering – proposed revision

Recommended Semester Plan (2015/16 catalog year with markup)

To remain on track, students must complete the appropriate critical-tracking courses, which appear in bold.

Semester 1	Credits
CHM 2045 General Chemistry 1 or **CHM 2095 Chemistry for Engineers 1 (both GE-P)**	**3**
CHM 2045L General Chemistry 1 Laboratory (GE-P)	1
EML 2920 Department and Professional Orientation	1
IUF 1000 What is the Good Life (GE-H)	3
MAC 2311 Analytic Geometry and Calculus 1 (State Core GE-M)	**4**
English composition (GE-C; E6) (ACT/SAT placement scores do not exempt this requirement)	3
Total	15

Semester 2	Credits
EML 2023 Computer Aided Graphics and Design	3
ENC 3246 Professional Communication for Engineers (State Core GE-C; E6)	3
MAC 2312 Analytic Geometry and Calculus 2 (GE-M)	4
PHY 2048 Physics with Calculus 1 (State Core GE-B/P)	**3**
PHY 2048L Physics with Calculus 1 Laboratory (GE-P)	1
Total	14

Semester 3	Credits
EMA 3010 Materials	3
Science elective (AST 3018 Astronomy and Astrophysics 1, BSC 2010 Integrated Principles of Biology 1, CHM 2046, General Chemistry 2, CHM 2096 Chemistry for Engineers 2 or PHY 3101 Introduction to Modern Physics)	3
Social and Behavioral Sciences (State Core GE-S) [3]	3
Total	9

Semester 4	Credits
COP 2271 Computer Programming for Engineers [1]	2
EGM 2511 Engineering Mechanics: Statics *	3
EML 2322L Design and Manufacturing Laboratory	2
MAC 2313 Analytic Geometry and Calculus 3 (GE-M)	**4**
PHY 2049 Physics with Calculus 2 (GE-B/P)	**3**
PHY 2049L Physics with Calculus 2 Laboratory (GE-P)	1
Total	15

Semester 5	Credits
~~EEL 3003 Elements of Electrical Engineering [3]~~	~~3~~
EGM 3344 Introduction to Numerical Methods of Engineering Analysis [*]	3

Course	Credits
EGM 3520 Mechanics of Materials *	3
EML 3100 Thermodynamics *	3
MAP 2302 Elementary Differential Equations	**3**
Humanities (State Core GE-H)[3]	3
Total	15
Semester 5	Credits
EMA 3010 Materials	3
Science elective (AST 3018 Astronomy and Astrophysics 1, BSC 2010 Integrated Principles of Biology 1, CHM 2046, General Chemistry 2, CHM 2096 Chemistry for Engineers 2 or PHY 3101 Introduction to Modern Physics)	3
Social and Behavioral Sciences (State Core GE-S) [3]	3
Total	9
Semester 6	**Credits**
EEL 3003 Elements of Electrical Engineering [2]	3
EGM 3401 Engineering Mechanics: Dynamics *	3
EGM 4313 Intermediate Engineering Analysis	3
EGN 3353C Fluid Mechanics	3
EML 3301C Mechanics of Materials Laboratory (E6)	3
Social and Behavioral Sciences (GE-S; E6) [3]	3

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	Total	15

Semester 7		Credits
EML 3005 Mechanical Engineering Design 1		3
EML 4140 Heat Transfer		3
EML 4220 Vibrations		3
EML 4304C Thermo/Fluid Design and Laboratory		3
EML 4312 Control of Mechanical Engineering Systems		3
Humanities (GE-H;E6)[3] or Social and Behavioral Sciences (GE-S; E6)[3]		3
	Total	15

Semester 8		Credits
EML 4147C Thermo Heat Transfer Thermal Systems Design and Laboratory		3
EML 4314C Dynamics and Controls System Design Laboratory		3
EML 4501 Mechanical Engineering Design 2 or EAS 4700 Aerospace Design 1 or EAS 4710 Aerospace Design 2 (can substitute if dual ME/ASE student)		3
EML 4507 Finite Element Analysis and Design		3
Humanities (State Core GE-H) [3]		3
Technical elective (see approved list)		36
	Total	15

Semester 9		Credits

EML 4321 Manufacturing Engineering	3
EML 4314C Dynamics and Controls System Design Laboratory	3
EML 4501 Mechanical System Design or EAS 4710 Aerospace Design 2 (can substitute if dual ME/ASE student)	3
Humanities (GE-H; E6) ³ or Social and Behavioral Sciences (GE-S; E6) ³	3
EML4502 Mechanical Engineering Design 3	3
Specialization Elective (see approved list)	3
Technical electives (see approved list)	63
Total	15

* Completed with a minimum grade of C.
¹ Can substitute COP 2271 Computer Programming Using FORTRAN, COP 3502 Programming Fundamentals 1 or other programming courses approved by the department.Student should take the Matlab section.
² Can substitute EEL 3111C.
³ Students are also expected to complete the general education international (GE-N) and diversity (GE- D) requirements. This is often done concurrently with another general education requirement (typically, GE-C, H or S).

Mechanical Engineering - Proposed Modification of the Curriculum for the BS Degree

Revision Date:8/11/2015

Current (2015 catalog)			Proposed (changes highlighted)		

Semester 1 (Fall)	Title	CR	Semester 1 (Fall)	Title	CR
CHM 2045 or	**General Chemistry 1 (GE-P) or**	**3**	**CHM 2045 or**	**General Chemistry 1 (GE-P) or**	**3**
CHM 2095	**Chemistry for Engineers 1 (GE-P)**		**CHM 2095**	**Chemistry for Engineers 1 (GE-P)**	
CHM 2045L	General Chemistry Lab 1	1	CHM 2045L	General Chemistry Lab 1	1
EML 2920	Department and Professional Orientation	1	EML 2920	Department and Professional Orientation	1
IUF 1000	What is the Good Life (UF Core - GE-H)	3	IUF 1000	What is the Good Life (UF Core - GE-H)	3
MAC 2311	**Analytical Geometry & Calculus 1 (State Core GE-M)**	**4**	**MAC 2311**	**Analytical Geometry & Calculus 1 (State Core GE-M)**	**4**
	English Composition (GE-C, E6) (ACT/SAT Placement scores do not exempt this requirement)	3		English Composition (GE-C, E6) (ACT/SAT Placement scores do not exempt this requirement)	3
	Semester Total	15		Semester Total	15

Semester 2 (Spring)	Title	CR	Semester 2 (Spring)	Title	CR
EML 2023	Computer Aided Graphics and Design	3	EML 2023	Computer Aided Graphics and Design	3
ENC 3246	Professional Communication for Engineers (State Core GE-C, E6)	3	ENC 3246	Professional Communication for Engineers (State Core GE-C, E6)	3
MAC 2312	**Analytic Geometry and Calculus 2 (GE-M)**	**4**	**MAC 2312**	**Analytic Geometry and Calculus 2 (GE-M)**	**4**
PHY 2048	**Physics with Calculus 1 (State Core GE-B/P)**	**3**	**PHY 2048**	**Physics with Calculus 1 (State Core GE-B/P)**	**3**
PHY 2048L	Physics with Calculus 1 Laboratory (GE-P)	1	PHY 2048L	Physics with Calculus 1 Laboratory (GE-P)	1
	Semester Total	14		Semester Total	14

			Semester 3 (Summer)	Title	CR
			EMA3010	Materials	3
			Science Elective	**(AST 3018 Astronomy and Astrophysics 1, BSC 2010 Integrated Principles of Biology 1, CHM 2046, General Chemistry 2, CHM 2096 Chemistry for Engineers 2 or PHY 3101 Introduction to Modern Physics)**	**3**
				Social and Behavioral Sciences (State Core GE-S) [1]	3
				Semester Total	9

Semester 3 (Fall)	Title	CR	Semester 4 (Fall)	Title	CR
COP 2271	Computer Programming for Engineers [1]	2	COP 2271	Computer Programming for Engineers [1]	2
EGM 2511	Engineering Mechanics: Statics *	3	EGM 2511	Engineering Mechanics: Statics *	3
EML 2322L	Design and Manufacturing Laboratory	2	EML 2322L	Design and Manufacturing Laboratory	2
MAC2 313	**Analytic Geometry and Calculus 3 (GE-M)**	**4**	**MAC2 2313**	**Analytic Geometry and Calculus 3 (GE-M)**	**4**
PHY 2049	**Physics with Calculus 2 (GE-B/P)**	**3**	**PHY 2049**	**Physics with Calculus 2 (GE-B/P)**	**3**
PHY 2049L	Physics with Calculus 2 Laboratory (GE-P)	1	PHY 2049L	Phisics with Calculus 2 Laboratory (GE-P)	1
	Semester Total	15		Semester Total	15

Semester 4 (Spring)	Title	CR	Semester 5 (Spring)	Title	CR
EEL 3003	Elements of Electrical Engineering [2]	3	EGM3344	Introduction to Numerical Methods of Engineering Analysis*	3
EGM 3344	Introduction to Numerical Methods of Engineering Analysis	3	EGM3520	Mechanics of Materials *	3
EGM 3520	Mechanics of Materials	3	EML3100	Thermodynamics *	3
EML 3100	Thermodynamics *	3	**MAP2302**	**Elementary Differential Equations**	**3**
MAP 2302	**Elementary Differential Equations**	**3**		Humanities (State Core GE-H) [3]	3
	Semester Total	15		Semester Total	15

Semester 5 (Summer)	Title	CR
EMA3010	Materials	3
Science Elective	**(AST 3018 Astronomy and Astrophysics 1, BSC 2010 Integrated Principles of Biology 1, CHM 2046, General Chemistry 2, CHM 2096 Chemistry for Engineers 2 or PHY 3101 Introduction to Modern Physics)**	**3**
	Social and Behavioral Sciences (State Core GE-S)[3]	3
	Semester Total	9

Semester 6 (Fall)	Title	CR		Semester 6 (Fall)	Title	CR
EGM 3401	Engineering Mechanics: Dynamics *	3		EEL3003	Elements of Electrical Engineering [2]	3
EGM 4313	Intermediate Engineering Analysis	3		EGM3401	Engineering Mechanics: Dynamics *	3
EGN 3353C	Fluid Mechanics	3		EGN3353C	Fluid Mechanics	3
EML 3301C	Mechanics of Materials Laboratory	3		EML3301C	Mechanics of Materials Laboratory (E6)	3
	Social and Behavioral Sciences (GE-S; E6) [3]	3			Social and Behavioral Sciences (GE-S) [3]	3
	Semester Total	15			Semester Total	15

Semester 7 (Spring)	Title	CR		Semester 7 (Spring)	Title	CR
EML 3005	Mechanical Design	3		EML3005	Mechanical Engineering Design 1	3
EML 4140	Heat Transfer	3		EML4140	Heat Transfer	3
EML 4220	Vibrations	3		EML4220	Vibrations	3
EML 4304C	Thermo/Fluid Design and Laboratory	3		EML4312	Control of Mechanical Engineering Systems	3
EML 4312	Control of Mechanical Engineering Systems	3			Humanities (GE-H; E6) [3] or Social and Behavioral Sciences (GE-S; E6) [3]	3
	Semester Total	15			Semester Total	15

Semester 8 (Fall)	Title	CR		Semester 8 (Fall)	Title	CR
EML 4147C	Thermo-Heat Transfer Design and Laboratory	3		EML4147C	Thermal Systems Design and Laboratory	3
EML 4314C	Dynamics and Controls System Design Laboratory	3		EML4501	Mechanical Engineering Design 2 or	3
EML 4507	Finite Element Analysis and Design	3		EAS 4700	Aerospace Design 1 or	
	Humanities (State Core GE-H) [3]	3		EAS 4710	Aerospace Design 2 (can substitute if dual ME/ASE student)	
Technical Elective	See Approved List	3		EML4507	Finite Element Analysis and Design	3
	Semester Total	15		Technical Elective	See Approved List	6
					Semester Total	15

Semester 9 (Spring)	Title	CR		Semester 9 (Spring)	Title	CR
EML 4321	Manufacturing Engineering	3		EML4321	Manufacturing Engineering	3
EML 4501	Mechanical System Design or	3		EML4314C	Dynamics and Controls System Design Laboratory	3
EAS 4710	Aerospace Design 2 (can substitute if dual ME/ASE student)			EML4502	Mechanical Engineering Design 3	3
	Humanities (GE-H; E6) [3] or Social and Behavioral Sciences (GE-S; E6) [3]	3		Specialization Elective	See Approved List	3
Technical Electives	See Approved List	6		Technical Electives	See Approved List	3
	Semester Total	15			Semester Total	15

Total Hrs for Degree   128

Total Hrs for Degree   128

* Completed with a minimum grade of C.

[1] Can substitute COP2271 Computer Programming Using FORTRAN, COP3502 Programming Fundamentals 1 or other programming courses approved by department.

[2] Can substitute EEL3111C

[3] Students are also expected to complete the general education international (GE-N) and diversity (GE-E) requirements. This is often done concurrently with another general education requirement (typically GE-C, H or S)

* Completed with a minimum grade of C.

[1] Students should take the Matlab section.

[2] Can substitute EEL3111C