MECHANICAL ENGINEERING - Catalog Year 2016

Total Credits = 121

Freshman Year *Fall* Semester

Course Code	Description	Cr	
CHM 101	General Chemistry Lec I (A1)	3	
CHM 102	General Chemistry I Lab	1	
EGR 105	Foundations of Engineering I (A4)	1	
MTH 141	Calculus I (A1, B3)	4	
	General Education Outcome(s)*	3	
	General Education Outcome(s)*	3	
		15	

Freshman Year *Spring* Semester

Course Code	Description	Cr	
EGR 106	Foundations of Engineering II (A4)	2	
MTH 142	Calculus II (B3)	4	
PHY 203	Elementary Physics I (A1)	3	
PHY 273	Elementary Physics Lab I (A1)	1	
	General Education Outcome(s)*	3	
	General Education Outcome(s)*	3	
		16	

Sophomore Year *Fall* Semester

Course Code	Description	Cr	
ISE 240 and 241 ***or*** ISE 220 and MCE 201	Mfg Processes and Systems (3), Mfg Processes and Systems Lab (1) Indust and Systems Engrg Seminar (1) Engineering Graphics (3)	4	
MCE 262	Statics	3	
MTH 243	Calculus for Functions of Several Vars (A1, B3)	3	
PHY 204	Elementary Physics II (A1)	3	
PHY 274	Elementary Physics Lab II (A1)	1	
		14	

Sophomore Year *Spring* Semester

Course Code	Description	Cr	
CVE 220	Mechanics of Materials	3	
ISE 240 and 241 ***or*** ISE 220 and MCE 201	Mfg Processes and Systems (3), Mfg Processes and Systems Lab (1) Indust and Systems Engrg Seminar (1) Engineering Graphics (3)	4	
MCE 263	Dynamics	3	
MTH 244	Differential Equations	3	
	Science Elective**	3	
		16	

Junior Year *Fall* Semester

Course Code	Description	Cr	
CHE 333	Engineering Materials	3	
MCE 301	Application of Mechanics in Design	3	
MCE 341	Fundamentals of Thermodynamics	3	
MCE 354	Fluid Mechanics	3	
MCE 372	Engineering Analysis I	3	
		15	

Junior Year *Spring* Semester

Course Code	Description	Cr	
ELE 220	Passive and Active Circuits	3	
MCE 302	Design of Machinery	3	
MCE 313	Intro to MCE Experimentation	3	
MCE 348	Heat and Mass Transfer	3	
MCE 366	System Dynamics	3	
		15	

Senior Year *Fall* Semester

Course Code	Description	Cr	
MCE 401	Mechanical Engrg Capstone Design I	3	
MCE 414	Mechanical Engineering Experimentation	3	
	Professional Elective***	3	
	Professional Elective***	3	
	General Education Outcome(s)*	3	
		15	

Senior Year *Spring* Semester

Course Code	Description	Cr	
MCE 402	Mechanical Engrg Capstone Design II	3	
	Professional Elective***	3	
	Professional Elective***	3	
	General Education Outcome(s)*	3	
	General Education Outcome(s)*	3	
		15	

* **General Education Outcomes:** if all Outcomes are satisfied in fewer spaces than provided, you must take a course of your choice (Free Elective) to fill each remaining space in order to meet the required earned credit total of your degree plan.
See the "General Education Outcomes" section at the bottom of page two for more information on satisfying these requirements.

** **Science Elective:** choose from CHM 112, CHM 124, or PHY 205 & PHY 275

*** **Professional Electives:** Must be satisfied by a minimum of ***three (3) three (3)-credit*** MCE courses (no more than ***two (2***) courses from the *MCE47*/CHE47* series),* ***two (2)*** of which must be taken at URI; the ***fourth*** course may be a 300-, 400-, or 500-level course offered by the College of Engineering, CHM, CSC, PHY, or STA; or a 400 or 500-level MTH course. Professional elective courses taken outside URI are subject to URI transfer credit rules and require prior written approval.

Name _____ **ID #** _____

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SPECIFIED MATHEMATICS, SCIENCE, AND ENGINEERING COURSES

INTRODUCTORY ENGINEERING

Sem	Course	Cr	Grade	QP	Note
	EGR 105 (A4)	1			
	EGR 106 (A4)	2			
		3			

MATHEMATICS

Sem	Course	Cr	Grade	QP	Note
	MTH 141 (A1 & B3)	4			
	MTH 142 (B3)	4			
	MTH 243 (A1 & B3)	3			
	MTH 244	3			
		14			

NATURAL SCIENCES

Sem	Course	Cr	Grade	QP	Note
	CHM 101 (A1)	3			
	CHM 102	1			
	PHY 203 (A1)	3			
	PHY 273 (A1)	1			
	PHY 204 (A1)	3			
	PHY 274 (A1)	1			
		12			

**SCIENCE ELECTIVE

Sem	Course	Cr	Grade	QP	Note
		3			

ENGINEERING SCIENCE AND DESIGN

Sem	Course	Cr	Grade	QP	Note
	CHE 333	3			
	CVE 220	3			
	ELE 220	3			
	ISE 220	1			
	ISE 240	3			
	ISE 241	1			
	MCE 201	3			
	MCE 262	3			
	MCE 263	3			
	MCE 301	3			
	MCE 302	3			
	MCE 313	3			
	MCE 341	3			
	MCE 348	3			
	MCE 354	3			
	MCE 366	3			
	MCE 372	3			
	MCE 401 **[capstone]**	3			
	MCE 402 **[capstone]**	3			
	MCE 414	3			
		56			

***PROFESSIONAL ELECTIVES

Sem	Course	Cr	Grade	QP	Note
		3			
		3			
		3			
		3			
		12			

*GENERAL EDUCATION OUTCOMES

Sem	Course	Cr	Grade	QP	Note
Science, Technology, Engineering, and Math (STEM) (A1)					
---	CHM & PHY (see above)	11	---	---	---
Social and Behaviorial Sciences (A2)					
Humanities (A3)					
Arts & Design (A4)					
---	EGR 105 & 106 (see above)	3	---	---	---
Write Effectively (B1)					
Communicate Effectively (B2)					
Mathematical, Statistical, or Computational Strategies (B3)					
---	MTH (see above)	11	---	---	---
Information Literacy (B4)					

Sem	Course	Cr	Grade	QP	Note
Civic Knowledge & Responsibilities (C1)					
Global Responsibilities (C2)					
Diversity & Inclusion (C3)					
Ability to Synthesize (D1)					
---	*TBD from major requirements*	3	---	---	---
Grand Challenge (at least one course must be coded with a "G")					
Free Elective					
If you fulfill all Outcomes in fewer spaces than indicated on page one, you must use those					
additional spaces to take course(s) of your choice to reach your degree credit total (121)					

* **General Education Outcomes:** at least 40 credits must be completed. (A1-D1) must be met by at least three credits. A single course may satisfy one or two outcomes, and at least one course must be a "Grand Challenge". No more than twelve credits can be from the same course code except HPR. General education courses may also be used to meet requirements of your major(s) or minor(s) when appropriate.

** **Science Elective:** choose from CHM 112, CHM 124, or PHY 205 & PHY 275

*** **Professional Electives**: Must be satisfied by **twelve (12) credits** of professional electives, with a minimum of **three (3) three (3)-credit MCE courses** (no more than two (2) courses from the MCE 47*/CHE 47* series), two (2) of which must be taken at URI. The fourth course may be a 300-, 400-, or 500-level course offered by the College of Engineering, CHM, CSC, PHY, or STA; or a 400- or 500-level MTH course. Professional elective courses taken outside URI are subject to URI transfer credit rules and require prior written approval.