



## Degree and Study Plan

College : ENGINEERING  
Department : MECHANICAL AND INDUSTRIAL ENGINEERING  
Cohorts : 2011  
Degree : BACHELOR OF ENGINEERING  
Major : MECHANICAL ENGINEERING

<b><u>Summary of Credits:</u></b>	
<b>University Requirements (UR)</b>	<b>6</b>
General Foundation Program	
Arabic	3
Contemporary Omani Society	1
Oman & Islamic Civilization or Islamic Culture	2
<b>University Electives (UE)</b>	<b>6</b>
See List A	
<b>College Requirements (CR)</b>	<b>35</b>
See list B	
<b>College Electives (CE)</b>	<b>0</b>
See list C	
<b>Departmental Requirements (DR)</b>	<b>25</b>
See list D	
<b>Departmental Electives (DE)</b>	<b>0</b>
See list E	
<b>Major Requirements (AR)</b>	<b>52</b>
See list F	
<b>Major Electives (AE)</b>	<b>12</b>
See list G	
<b>Minor Requirements (IR)</b>	<b>0</b>
See list H	
<b>Minor Electives (IE)</b>	<b>0</b>
See list I	
<b>Specialization Requirements (SR)</b>	<b>0</b>
See list J	
<b>Specialization Electives (SE)</b>	<b>0</b>
See list K	
<b>TOTAL</b>	<b>136</b>

For reference contact: Dr. Nabeel Al-Rawahi Ext. 1352

HoD Date

Dean's Office Date

Admission and Registration Date

**Department of Mechanical and Industrial Engineering**  
**Mechanical Engineering Study Plan: 2011 Cohort (Scheme I)**

	Course Code	Course Title	Cr.	Pre-req./Co-requisite*	Cat.
<b>Semester 1 Fall</b>		General Foundation Program	0		UR
	<b>Total</b>			<b>0</b>	

<b>Semester 2 Spring</b>	ARAB1001	Arabic	3		UR
	HIST1010/ ISLM1010	Oman & Islamic Civilization / Islamic Culture	2		UR
	ENGR1501	Introduction to Engineering	1		CR
	ENGR1600	Workshop I	1		CR
	LANC2160	English for Engineering I	3		CR
	MATH2107	Calculus I	4		CR
	<b>Total</b>			<b>14</b>	

<b>Semester 3 Fall</b>	SOCI3320	Contemporary Omani Society	1		UR
	CHEM1071	General Chemistry for Engineers	3		CR
	LANC2161	English for Engineering II	3	LANC2160	CR
	MATH2108	Calculus II	3	MATH2107	CR
	PHYS2107	General Physics I	4	MATH2107*	CR
	MEIE2181	Workshop II	1	ENGR1600	DR
	<b>Total</b>			<b>15</b>	

<b>Semester 4 Spring</b>	COMP2xxx	Computer Programming <sup>a</sup>	3		CR
	MATH3171	Linear Algebra & Multivariate	3	MATH2108	CR
	PHYS2108	General Physics II	4	PHYS2107	CR
	MEIE3105	Computer Graphics	3		DR
	MEIE2102	Statics	3	PHYS2107	AR
	<b>Total</b>			<b>16</b>	

<b>Semester 5 Fall</b>	MEIE3161	Materials Science	3		DR
	MEIE3181	Electromechanical Systems	3	MATH2107, PHYS2108*	DR
	MEIE3109	Product Design	3	MEIE3105	AR
	MEIE3121	Dynamics	3	MEIE2102	AR
	MEIE3141	Thermodynamics I	3	PHYS2108*	AR
	<b>Total</b>			<b>15</b>	

<sup>a</sup> COMP2xxx Computer Programming (C++/Visual Basic)

	Course Code	Course Title	Cr.	Pre-req./Co-requisite*	Cat
January	ENGR3006	Industrial Training I	0	ENGR1600, MEIE3105	CR
	<b>Total</b>			<b>0</b>	

Semester 6 Spring	MATH4174	Differential Equations for Engineers	3	MATH2108	CR
	MEIE3102	Solid Mechanics	3	MEIE2102 or MEIE2129	DR
	MEIE3122	Machine Dynamics	3	MEIE3121	AR
	MEIE3142	Thermodynamics II	3	MEIE3141 or MEIE3152	AR
	MEIE4183	Numerical Methods for Engineers	3	COMP2xxx	AR
<b>Total</b>			<b>15</b>		

Semester 7 Fall	MEIE3281	Probability & Statistics for Engineers	3	MATH2107	DR
	MEIE4101	Machine Design I	3	MEIE3102, MEIE3105	AR
	MEIE4141	Fluid Mechanics	3	PHY2108	AR
	MEIE4161	Engineering Materials	3	MEIE3161	AR
	MEIE4125	Instrumentation & Measurement	4	MEIE3181	AR
<b>Total</b>			<b>16</b>		

Semester 8 Spring		University Elective	2		UE
	MEIE4285	Engineering Economics	3	MATH2107	DR
	MEIE4122	Engineering Systems & Control	3	MEIE3121, MATH4174	AR
	MEIE4144	Heat Transfer	3	MEIE4141, MEIE3141	AR
	MEIE5149	Capstone Design	3	MEIE4101	AR
	MEIE4191	Seminar	1		AR
<b>Total</b>			<b>15</b>		

Summer	ENGR4006	Industrial Training II	0	<b>ENGR3006</b>	CR
	<b>Total</b>			<b>0</b>	

Semester 9 Fall		University Elective	2		UE
	MEIE4262	Manufacturing Processes	3	MEIE3161, MEIE3102	DR
	MEIE5288	Innovation, Entrepreneurship, and Management	3	MEIE4285	DR
	MEIE5193	Project I	2	MEIE4101, MEIE4144	AR
	MEIE5xxx	Department Elective 1	3		AE
	MEIE5xxx	Department Elective 2	3		AE
<b>Total</b>			<b>16</b>		

Semester 10 Spring		University Elective	2		UE
	MEIE5145	Design of Thermal Systems	3	MEIE4141, MEIE3142	AR
	MEIE5194	Project II	3	MEIE5193	AR
	MEIE5xxx	Department Elective 3	3		AE
	MEIE5xxx	Department Elective 4	3		AE
<b>Total</b>			<b>14</b>		

**Department of Mechanical & Industrial Engineering**  
**Mechanical Engineering Study Plan: 2011 Cohort (Scheme II)**

	Course Code	Course Title	Cr.	Pre-req./Co-requisite*	Cat.
<b>Semester 1 Fall</b>		General Foundation Program	0		UR
	<b>Total</b>		<b>0</b>		

<b>Semester 2 Spring</b>		General Foundation Program	0		UR
	<b>Total</b>		<b>0</b>		

<b>Semester 3 Fall</b>		University Elective	2		UE
	ENGR1501	Introduction to Engineering	1		CR
	ENGR1600	Workshop I	1		CR
	CHEM1071	General Chemistry for Engineers	3		CR
	LANC2160	English for Engineering I	3		CR
	MATH2107	Calculus I	4		CR
	<b>Total</b>		<b>14</b>		

<b>Semester 4 Spring</b>	ARAB1001	Arabic	3		UR
	HIST1010/ ISLM1010	Oman & Islamic Civilization / Islamic Culture	2		UR
	SOCI3320	Contemporary Omani Society	1		UR
	LANC2161	English for Engineering II	3	LANC2160	CR
	MATH2108	Calculus II	3	MATH2107	CR
	PHYS2107	General Physics I	4	MATH2107*	CR
	<b>Total</b>		<b>16</b>		

<b>Summer</b>		University Elective	2		UE
	COMP2xxx	Computer Programming <sup>a</sup>	3		CR
	<b>Total</b>		<b>5</b>		

<b>Semester 5 Fall</b>	PHYS2108	General Physics II	4	PHYS2107	CR
	MEIE2181	Workshop II	1	ENGR1600	DR
	MEIE3105	Computer Graphics	3		DR
	MEIE3181	Electromechanical Systems	3	MATH2107, PHYS2108*	DR
	MEIE2102	Statics	3	PHYS2107	AR
	MEIE3141	Thermodynamics I	3	PHYS2108*	AR
	<b>Total</b>		<b>17</b>		

<sup>a</sup> COMP2xxx Computer Programming (C++/Visual Basic)

<b>January</b>	ENGR3006	Industrial Training I	0	ENGR1600, MEIE3105	CR
	<b>Total</b>		<b>0</b>		

	Course Code	Course Title	Cr.	Pre-Req./Co-requisite*	Cat.
Semester 6 Spring	MATH3171	Linear Algebra & Multivariate Calculus for Engineers	3	MATH2108	CR
	MEIE3102	Solid Mechanics	3	MEIE2102 or MEIE2129	DR
	MEIE3161	Materials Science	3		DR
	MEIE3109	Product Design	3	MEIE3105	AR
	MEIE3121	Dynamics	3	MEIE2102	AR
	MEIE3142	Thermodynamics II	3	MEIE3141 or MEIE3152	AR
<b>Total</b>			<b>18</b>		

Summer	MEIE3281	Probability & Statistics for Engineers	3	MATH2107	DR
	MEIE4183	Numerical Methods for Engineers	3	COMP2xxx	AR
	<b>Total</b>			<b>6</b>	

Semester 7 Fall	MATH4174	Differential Equations for Engineers	3	MATH2108	CR
	MEIE3122	Machine Dynamics	3	MEIE3121	AR
	MEIE4101	Machine Design I	3	MEIE3102, MEIE3105	AR
	MEIE4141	Fluid Mechanics	3	PHYS2108	AR
	MEIE4125	Instrumentation & Measurement	4	MEIE3181	AR
<b>Total</b>			<b>16</b>		

Semester 8 Spring	MEIE4285	Engineering Economics	3	MATH2107	DR
	MEIE4122	Engineering Systems & Control	3	MEIE3121, MATH4174	AR
	MEIE4144	Heat Transfer	3	MEIE4141, MEIE3141	AR
	MEIE4161	Engineering Materials	3	MEIE3161	AR
	MEIE4191	Seminar	1		AR
	MEIE5149	Capstone Design	3	MEIE4101	AR
<b>Total</b>			<b>16</b>		

Sum mer	ENGR4006	Industrial Training II	0	<b>ENGR3006</b>	CR
	<b>Total</b>			<b>0</b>	

Semester 9 Fall	MEIE4262	Manufacturing Processes	3	MEIE3161, MEIE3102	DR
	MEIE5288	Innovation, Entrepreneurship, and Management	3	MEIE4285	DR
	MEIE5193	Project I	2	MEIE4101, MEIE4144	AR
	MEIE5xxx	Department Elective 1	3		AE
	MEIE5xxx	Department Elective 2	3		AE
<b>Total</b>			<b>14</b>		

Semester 10 Spring		University Elective	2		UE
	MEIE5145	Design of Thermal Systems	3	MEIE4141, MEIE3142	AR
	MEIE5194	Project II	3	MEIE5193	AR
	MEIE5xxx	Department Elective 3	3		AE
	MEIE5xxx	Department Elective 4	3		AE
<b>Total</b>			<b>14</b>		

Last updated: on July 10, 2011

**Department of Mechanical and Industrial Engineering - Degree Plan for 2011**

**LIST A<sup>T</sup> – UNIVERSITY ELECTIVES**

#	Code	Title	Credits	College/Dept
1	ARAB1040	Literature and Sociology	2	Arts
2	ARAB1050	Language and Sociology	2	Arts
3	ARCH1170	Development Civilization in Oman	2	Arts
4	ARCH1180	Archaeology and Environment in Oman	2	Arts
5	ARCH1520	Arch in Ancient Oman	2	Arts
6	ARCH1525	Arch Style Arab Gulf	2	Arts
7	ARCH1526	Islamic Arch	2	Arts
8	ARCH1530	Oman Arch Through Ages	2	Arts
9	ARCH1531	Hist Animals in Oman	2	Arts
10	ARCH1535	Oman Town Culture Rem	2	Arts
11	ARCH1536	Arch. Know Arab Peninsulum	2	Arts
12	ARCH1537	Cult. Development Arab Gulf	2	Arts
13	ARCH1538	Oral History Cult. Heritage	2	Arts
14	ARCH1539	Hist. Ethn Jewwl. Oman	2	Arts
15	ARCH1540	Natural Culture Heritage Oman	2	Arts
16	ARCH1541	Cult. Scent and Arom. Oman	2	Arts
17	ARCH1550	Devl. Art Arch. Oman	2	Arts
18	ARCH1551	Admin. Arch. Heritage	2	Arts
19	ARCH5500	Sea Port and Mart. Arch	2	Arts
20	ARED1001	Contemporary Visual Arts	2	Education
21	ARED1002	Appreciation of Islamic Arts and Arabic Varieties of Public and Professional Communication	2	Education
22	BCOM1950	Varieties of Public and Professional Communication	3	Commerce
23	BCOM1960	Cross-Cultural Communication	2	Commerce
24	BIOL1003	Genetics in our Life	2	Science
25	BIOL1004	Environment Issues	2	Science
26	CUTM1002	Environmental Education	2	Education
27	CUTM1003	Principles of Teaching	2	Education
28	GEOG2021	Man and Natur. Env. In Oman	2	Arts
29	GEOG2031	Urbanization in the Arabian Gulf	2	Arts
30	GEOG2122	Man and Enviroment	2	Arts
31	GEOG2341	Dev. Countries	2	Arts
32	HIST1030	History of the GCCCountries	2	Arts
33	HIST1040	Some Aspects of the History of Oman	2	Arts
34	INFO4100	Children's Lierature	2	Arts
35	ISLM1020	Human Right in Islam	2	Education
36	ISLM2010	Prophet Biog.	2	Education
37	ISLM2030	The Miracle of the Holy Quran	2	Education
38	ISLM2040	Islamic Economy	2	Education
39	ISLM2060	Family Systems in Islam	2	Education

40	ISLM2070	Quranic Stories	2	Education
41	ISLM2080	General Aims	2	Education
42	ISLM2090	Islamic Ethics	2	Education
43	ISLM2150	Islamn and the Modern World	2	Education
44	MASS1020	Arts of Media Edit	2	Arts
45	MASS1030	Public Opinion (UE)	2	Arts
46	MASS1060	Mass Media and Society	2	Arts
47	MASS1070	International Comm	2	Arts
48	MASS1080	Principles of Public Relations (UE)	2	Arts
49	NURS1004	First Aid	2	Nursing
50	NURS1005	Physical & Psychological Child Health	2	Nursing
51	PHED1000	Physical Fitness	2	Education
52	PHIL2050	International Meth	2	Arts
53	PHIL2060	Ethics	2	Arts
54	PHIL2070	Tren. Cont. Phi. Though	2	Arts
55	PHIL2213	Science in Arab Through	2	Arts
56	PSYC1001	Human Behavior	2	Education
57	PSYC1002	Psych/Human Problems	2	Education
58	SOCI2151	Medical Sociology	2	Arts
59	SOCI2361	Introduction to Social Work	2	Arts
60	THAR1001	Theater Appreciation	2	Arts
61	THAR1003	Music Appreciation	2	Arts
62	THAR1012	Play Writing	2	Arts
63	THAR1013	Oratory/Presentation	2	Arts
64	THAR1014	Scholastic Theater	2	Arts
65	THAR1016	Child's Theater	2	Arts
66	THAR1017	Theater Scenography	2	Arts
67	TOUR1050	Tourism in Oman	2	Arts

T: Engineering students must select a humanity or social course (non-scientific & non-linguistic course) from any college as a University Elective.

**Department of Mechanical and Industrial Engineering**

**Mechanical Engineering Degree Plan: 2011 Cohort**

**LIST B: COLLEGE REQUIREMENTS (CR)**

<b>Code</b>	<b>Title</b>	<b>Credits</b>	<b>Pre-Requisite / Co-req. *</b>
LANC2160	English for Engineering I	<b>3</b>	
LANC2161	English for Engineering II	<b>3</b>	LANC2160
ENGR1501	Introduction to Engineering	<b>1</b>	
ENGR1600	Workshop I	<b>1</b>	
MATH2107	Calculus I	<b>4</b>	
MATH2108	Calculus II	<b>3</b>	MATH 2107
MATH3171	Linear Algebra & Multivariate Calculus	<b>3</b>	MATH2108, LANC2161
MATH4174	Differential Equations for Engineers	<b>3</b>	MATH2108, LANC2161
ENGR2216 Or COMP2002	Programming in Fortran or Introduction to Comp. Program.	<b>3</b>	
PHYS2107	General Physics I	<b>4</b>	MATH2107*
PHYS2108	General Physics II	<b>4</b>	PHYS 2107
CHEM1071	General Chemistry for Engineers	<b>3</b>	
ENGR3006	Industrial Training I	<b>0</b>	CIVL3056
ENGR4006	Industrial Training II	<b>0</b>	ENGR3006
<b>Total</b>		<b>35</b>	

**Department of Mechanical and Industrial Engineering**

**Mechanical Engineering Degree Plan: 2011 Cohort**

**LIST D: DEPARTMENTAL REQUIREMENTS (DR)**

<b>Code</b>	<b>Title</b>	<b>Credits</b>	<b>Pre-Requisite / Co-req. *</b>
MEIE2181	Workshop II	1	ENGR1600
MEIE3105	Computer Graphics	3	
MEIE3161	Materials Science	3	
MEIE3102	Solid Mechanics	3	MEIE2102 or MEIE2129
MEIE4262	Manufacturing Processes	3	MEIE3161, MEIE3102
MEIE3281	Probability & Statistics for Engineers	3	MATH2107
MEIE4285	Engineering Economics	3	MATH2107
MEIE5288	Innovation, Entrepreneurship, and Management	3	MEIE4285
MEIE3181	Electromechanical Systems	3	MATH2107, PHYS2108*
<b>Total</b>		<b>25</b>	

**Department of Mechanical and Industrial Engineering**

**Mechanical Engineering Degree Plan: 2011 Cohort**

**LIST F: MAJOR REQUIRMENTS (AR)**

<b>Code</b>	<b>Title</b>	<b>Credits</b>	<b>Pre-Requisite / Co-req. *</b>
MEIE2102	Statics	3	PHYS2107
MEIE3121	Dynamics	3	MEIE2102
MEIE3141	Thermodynamics I	3	PHYS2108*
MEIE3109	Product Design	3	MEIE3105
MEIE3122	Machine Dynamics	3	MEIE3121
MEIE3142	Thermodynamics II	3	MEIE3141 or MEIE3152
MEIE4101	Machine Design I	3	MEIE3102, 3105
MEIE4191	Seminar	1	
MEIE4141	Fluid Mechanics	3	PHYS2108
MEIE4125	Instrumentation & Measurements	4	ECCE3015
MEIE4183	Numerical Methods for Engineers	3	COMP2xxx, MATH3171
MEIE4122	Engineering Systems & Control	3	MEIE3121, MATH4174
MEIE4144	Heat Transfer	3	MEIE4141, MEIE3141
MEIE5149	Capstone Design	3	MEIE4101
MEIE4161	Engineering Materials	3	MATH3161
MEIE5145	Design of Thermal Systems	3	MEIE4141, MEIE3142
MEIE5193	Project I	2	MEIE4101, MEIE4144
MEIE5194	Project II	3	MEIE5193
<b>Total</b>		<b>52</b>	

## Department of Mechanical and Industrial Engineering

### Mechanical Engineering Degree Plan: 2011 Cohort

#### LIST G: MAJOR ELECTIVES (AE)

**Four Courses- 12 credit hours\*\*:** The elective courses will be offered from the following subject to availability.

Code	Title	Credits	Pre-Requisite / Co-req. *
MEIE 5101	Mechanical Vibration	3	MEIE 3122
MEIE 5103	Computer Aided Engineering	3	MEIE 3105 or MEIE 3146
MEIE 5106	Pressure Vessel & Piping System Design	3	MEIE4101 or MEIE 4146
MEIE 5127	Process Control	3	MEIE 4122 or MEIE 4171
MEIE 5122	Applied Multibody Dynamics	3	MEIE 3121
MEIE 5264	CAD/CAM	3	MEIE 3105
MEIE5104	Machine Design II	3	MEIE4101
MEIE5130	Mechatronics Systems and Applications	3	MEIE4125, MEIE4101
MEIE5146	Renewable Energy	3	MEIE3142 or MEIE3159 or MCTE4230
MEIE5147	Energy Conservation and Management	3	MEIE3141 or MEIE3159
MEIE5148	Desalination	3	MEIE4144 and MEIE3142
MEIE5150	Design of Air Conditioning Systems	3	MEIE4144 and MEIE3142
MEIE5180	Nanotechnology	3	MEIE4161
MEIE5182	Biotechnology	3	
MEIE 5190	Special Topics	3	

- \*\* 1) One course can be taken from another program.  
2) Students can register for elective courses starting from semester eight (8).