



College: **ENGINEERING**
 Departments: **MECHANICAL & INDUSTRIAL ENGINEERING**
ELECTRICAL & COMPUTER ENGINEERING
 Cohorts: **2015**
 Degree: **B. ENG**
 Major: **MECHATRONICS ENGINEERING**

<u>Summary of Credits:</u>	
University Requirements (UR)	6
General Foundation Program	NC
Arabic	3
Contemporary Omani Society	1
Oman & Islamic Civilization or Islamic Culture	2
University Electives (UE)	6
See List A	
College Requirements (CR)	35
See list B	
College Electives (CE)	0
See list C	
Departmental Requirements (DR)	0
See list D	
Departmental Electives (DE)	0
See list E	
Major Requirements (AR)	80
See list F	
Major Electives (AE)	9
See list G	
Minor Requirements (IR)	0
See list H	
Minor Electives (IE)	0
See list I	
Specialization Requirements (SR)	0
See list J	
Specialization Electives (SE)	0
See list K	
TOTAL	136

For reference contact: Dr. Nasser Hosseinzadeh

Ext: 1363

HoD

Date

Dean's Office

Date

Admission and Registration

Date

College of Engineering
Mechatronics Engineering Study Plan: 2015 Cohort (Scheme I)

Sem.1 Fall 2015	Course Code	Course Title	Cr.	Pre-req./Co-req.*	Cat.
		General Foundation Program	0		UR
	Total		0		

Semester 2 Spring 2016	HIST1010 ISLM1010	Oman & Islamic Civilization or Islamic Culture	2		UR
	LANC2160	English for Engineering I	3	FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604)	CR
	CHEM1071	General Chemistry for Engineering	3	FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604) and FPMT(0105 or 0109)	CR
	ENGR1501	Introduction to Engineering	1	FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604)	CR
	ENGR1600	Workshop I	1	FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604)	CR
	MATH2107	Calculus I	4	FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604) and FPMT(0105 or 0109)	CR
	Total		14		

Semester 3 Fall 2016	ARAB1001	Arabic	3		UR
	SOCY1001	Omani Contemporary Society	1		UR
		University Elective	2		UE
	LANC2161	English for Engineering II	3	LANC 2160	CR
	MATH2108	Calculus II	3	MATH2107	CR
	PHYS2107	Physics for Eng. I	4	FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604) and FPMT(0105 or 0109) MATH2107*	CR
	Total		16		

Semester 4 Spring 2017	MATH4174	Differential Equations for Engrs.	3	MATH2108	CR
	PHYS 2108	Physics for Eng. II	4	PHYS2107	CR
	COMP2002	Intr. to Comp. Program. for Engineers	3	FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604) and FPCS (0101 or 0102)	AR
	ECCE2016	Circuit Analysis I	3	PHYS2107 or PHYS2101	AR
	MEIE3107	Eng. Drawing & Comp. Graphics	3		AR
	Total		16		

Semester 5 Fall 2017	ECCE3016	Circuit Analysis II	3	ECCE2016	AR
	MATH3171	Lin. Alg. & Mult. Calc. for Eng.	3	MATH2108	CR
	MEIE2129	Basic Mechanics	3	PHYS 2107	AR
	MCTE3110	Electronics	4	ECCE2016	AR
	ECCE3206	Digital Logic Design	3		AR
	Total		16		

Semester 6 Spring 2017	MEIE3281	Probability & Statistics for Engineers	3	MATH2107	AR
	MCTE3230	Properties and Strength of Materials	3	MEIE 2129	AR
	MCTE4185	Signals & Systems for Mechatronics	3	ECCE3016	AR
	ECCE4227	Embedded Systems	3	COMP2002, ECCE3206, MCTE3110	AR
	MEIE3122	Machine Dynamics	3	MEIE2129	AR
	Total		15		

MECHATRONICS ENGINEERING PROGRAM
Mechatronics Engineering Study Plan: 2015 Cohort (Scheme I)

	Course Code	Course Title	Cr.	Pre-req./Co-req.*	Cat.
Semester 7 Fall 2018	MEIE4102	Machine Design 1	3	MEIE3107	AR
	MCTE4145	Instrumentation & Measurement	3	MCTE3110, MEIE3281	AR
	MCTE3210	Electromechanical Sys. & Actuators	3	ECCE3016	AR
	MCTE4230	Thermal Sciences	3	PHYS2108, MATH2108	AR
	MCTE4150	Modeling and Simulation	3	MATH4174	AR
	MCTE3240	Engineering System Design	2	MEIE3107	AR
	Total		17		

Jan. 2019	ENGR3006	Industrial Training I	0	MCTE3110	CR
	Total		0		

Semester 8 Spring 2019	MCTE4210	Power Electronics & Drives	3	MCTE3110, MCTE3210	AR
	MEIE4141	Fluids Mechanics	3	PHYS2108	AR
	MCTE4255	Mechatronics System Design	3	ECCE4227, (MCTE4145 or MCTE4155), MCTE3230	
	MCTE4450	Control Systems Engineering	3	(MCTE4150 or MCTE5133), MCTE4185	AR
	MEIE4183	Numerical Methods for Engineers	3	COMP2002, MATH3171	AR
	Total		15		

Summer 2019	ENGR4006	Industrial Training II	0	ENGR3006	CR
	Total		0		

Semester 9 Fall 2019	MCTE5191	Project I	2	(MCTE4255 or MCTE5255), MEIE4102	AR
		University Elective	2		UE
	MCTE5210	Real-time control and interfacing	3	(MCTE4450 or MCTE4250), ECCE4227	AR
	MCTE5142	Robotics	3	MEIE3122	AR
	MCTE51xx	Program Elective 2	3		AE
	Total		13		

Semester 10 Spring 2020	MCTE5291	Project II	3	MCTE5191	AR
	MCTE51xx	Program Elective 1	3		AE
	ECCE 5004	Engineering Managements &	3	STAT2103 or MEIE3281	AR
	MCTE51xx	Program Elective 3	3		AE
		University Elective	2		UE
	Total		14		

MECHATRONICS ENGINEERING PROGRAM
Mechatronics Engineering Study Plan: 2015 Cohort (Scheme II)

Sem.1 Fall 2015	Course Code	Course Title	Cr.	Pre-req./Co-req.*	Cat.
		General Foundation Program	0		UR
Sem.2 Spring 2016	Course Code	Course Title	Cr.	Pre-req./Co-req.*	Cat.
		General Foundation Program	0		UR
	Total		0		
Semester 3 Fall 2016		University Elective	2		UE
	ARAB1001	Arabic	3		UR
	LANC2160	English for Engineering I	3	FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604)	UR
	ENGR1501	Introduction to Engineering	1	FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604)	CR
	ENGR1600	Workshop I	1	FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604)	CR
	CHEM1071	General Chemistry for Engineering	3	FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604) and FPMT(0105 or 0109)	CR
	MATH2107	Calculus I	4	FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604) and FPMT(0105 or 0109)	CR
	Total		17		
Semester 4 Spring 2017	HIST1010	Oman & Islamic Civilization or Islamic Culture	2		UR
	SOCY1001	Omani Contemporary Society	1		UR
	LANC2161	English for Engineering II	3	LANC 2160	CR
	COMP2002	Intr. to Comp. Program. for Engineers	3	FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604) and FPMT(0105 or 0109)	AR
	MATH2108	Calculus II	3	MATH2107	CR
	PHYS2107	Physics for Eng. I	4	FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604) and FPMT(0105 or 0109) and MATH2107*	CR
	Total		16		
Summer 2017	ECCE2016	Circuit Analysis I	3	PHYS2107 or PHYS2101	AR
	ECCE3206	Digital Logic Design	3		AR
	Total		6		
Semester 5 Fall 2017	ECCE3016	Circuit Analysis II	3	ECCE2016	AR
	MATH4174	Differential Equations for Eng.	3	MATH2108	CR
	MEIE3107	Eng. Drawing & Comp. Graphics	3		AR
	MEIE2129	Basic Mechanics	3	PHYS 2107	AR
	PHYS 2108	Physics for Eng. II	4	PHYS2107	CR
	Total		16		
Semester 6 Spring 2018	MATH3171	Lin. Alg. & Mult. Calc. for Eng.	3	MATH2108	CR
	MCTE3110	Electronics	4	ECCE2016	AR
	MCTE4185	Signals & Systems for Mechatronics	3	ECCE3016	AR
	MCTE3230	Properties and Strength of Materials	3	MEIE 2129	AR
	MEIE3281	Probability & Statistics for Engineers	3	MATH2107	AR
		University Elective	2		UE
	Total		17		

MECHATRONICS ENGINEERING PROGRAM
Mechatronics Engineering Study Plan: 2015 Cohort (Scheme II)

	Course Code	Course Title	Cr.	Pre-req./Co-req.*	Cat.
Semester 7 Fall 2018	ECCE4227	Embedded Systems	3	COMP2002, ECCE3206 and (ECCE3152 or MCTE3110)	AR
	MCTE4145	Instrumentation & Measurement	3	MCTE3110, MEIE3281	AR
	MEIE3122	Machine Dynamics	3	MEIE2129	AR
	MCTE3210	Electromechanical Sys. & Actuators	3	ECCE3016	AR
	MCTE4150	Modeling and Simulation	3	MATH4174	AR
	MCTE3240	Engineering System Design	2	MEIE3107	AR
	Total		17		
Jan. 2019	ENGR3006	Industrial Training I	0	MCTE3110	CR
	Total		0		
Semester 8 Spring 2019	MCTE4210	Power Electronics & Drives	3	MCTE3110, MCTE3210	AR
	MEIE4183	Numerical Methods for Engineers	3	COMP2002, MATH3171	AR
	MCTE4255	Mechatronics System Design	3	ECCE4227, (MCTE4145 or MCTE4155), MCTE3230	
	MEIE4102	Machine Design 1	3	MEIE3107	AR
	MCTE4450	Control Systems Engineering	3	(MCTE4150 or MCTE5133), MCTE4185	AR
		University Elective	2		UE
	Total		17		
Summer 2019	ENGR4006	Industrial Training II	0	ENGR3006	CR
	Total		0		
Semester 9 Fall 2019	MCTE5191	Project I	2	(MCTE4255 or MCTE5255), MEIE4102	AR
		University Elective	2		UE
	MCTE5142	Robotics	3	MEIE3122	AR
	MCTE4230	Thermal Sciences	3	PHYS2108, MATH2108	AR
	MCTE51xx	Program Elective 1	3		AE
	MCTE5210	Real-time control and interfacing	3	(MCTE4450 or MCTE4250), ECCE4227	AR
	Total		17		
Semester 10 Spring 2020	MCTE5291	Project II	3	MCTE5191	AR
	ECCE 5004	Engineering Managements &	3	STAT2103 or MEIE3281	AR
	MEIE4141	Fluids Mechanics	3	PHYS2108	AR
	MCTE51xx	Program Elective 2	3		AE
	MCTE51xx	Program Elective 3	3		AE
	Total		15		

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LIST B: COLLEGE REQUIREMENTS (CR)

Code	Title	Credits	Pre-Requisite / Co-req. *
LANC2160	English for Engineering I	3	FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604)
LANC2161	English for Engineering II	3	LANC2160
ENGR1501	Introduction to Engineering	1	FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604)
ENGR1600	Workshop I	1	FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604)
COMP2002	Introduction to Comp. Program	3	
MATH2107	Calculus I	4	FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604) and FPMT(0105 or 0109)
MATH2108	Calculus II	3	MATH 2107
MATH3171	Linear Algebra & Multivariate Calculus	3	MATH2108
MATH4174	Differential Equations for Engineers	3	MATH2108
PHYS2107	General Physics I	4	MATH2107*
PHYS2108	General Physics II	4	PHYS 2107
CHEM1071	General Chemistry for Engineering	3	FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604) and FPMT(0105 or 0109)
ENGR3006	Industrial Training I	0	CIVL3056
ENGR4006	Industrial Training II	0	ENGR3006
Total		35	

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LIST F: MAJOR REQUIRMENTS (AR)

Code	Title	Credits	Pre-Requisite / Co-req. *
ECCE2016	Circuit Analysis I	3	PHYS2107 or PHYS2101
MCTE3110	Electronics	4	ECCE2016
MEIE2129	Basic Mechanics	3	PHYS2107
ECCE3016	Circuit Analysis II	3	ECCE2016
MCTE4145	Instrumentation & Measurement	3	MCTE3110, MEIE3281
MCTE3230	Properties and Strength of Materials	3	MEIE2129
MEIE3107	Eng. Drawing & Comp. Graphics	3	
MEIE3281	Probability & Statistics for Engineers	3	MATH2107
MEIE4102	Machine Design 1	3	MEIE3107
MCTE4185	Signals & Systems for Mechatronics	3	ECCE3016
MCTE3210	Electromechanical Systems & Actuators	3	ECCE3016
ECCE3206	Digital Logic Design	3	
MCTE4210	Power Electronics & Drives	3	MCTE3110, MCTE3210
MEIE4141	Fluids Mechanics	3	PHYS2108
ECCE4227	Embedded Systems	3	COMP2002, ECCE3206, MCTE3110
ECCE5004	Engineering Managements & Economics I	3	STAT2103 or MEIE3281
MCTE4150	Modeling & Simulation	3	MATH4174
MEIE4183	Numerical Methods for Engineers	3	COMP2002, MATH3171
MEIE3122	Machine Dynamics	3	MEIE2129
MCTE5191	Project I	2	(MCTE4255 or MCTE5255), MEIE4102
MCTE4230	Thermal Sciences	3	PHYS2108, MATH2108
MCTE3240	Engineering System Design	2	MEIE3107
MCTE5210	Real-time control and interfacing	3	(MCTE4450 or MCTE4250), ECCE4227
MCTE4450	Control Systems Engineering	3	(MCTE4150 or MCTE5133), MCTE4185
MCTE4255	Mechatronics System Design	3	ECCE4227, (MCTE4145 or MCTE4155), MCTE3230
MCTE5291	Project II	3	MCTE5191
MCTE5142	Robotics	3	MEIE3122
Total		80	

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LIST G: MAJOR ELECTIVES (AE)*

Two courses: 6 credits

Code	Title	Credits	Pre-Requisite
MCTE5420	Pneumatic and Hydraulic Systems		MCTE4450
ECCE4422	Digital Control Systems	3	MCTE4450
ECCE5433	Modern Control Systems	3	MCTE4450
ECCE4436	Industrial Control Systems	3	MCTE4450
ECCE5008	Project Management	3	ECCE 5004
ECCE5223	Advanced Embedded Systems	3	ECCE4227
ECCE5445	Control System Design	3	MCTE4450 or ECCE4416 or MCTE4250
ECCE5432	Programmable Logic Controllers	3	MCTE4450 or ECCE4416 or MCTE4250
ECCE4253	Object Oriented Programming	3	COMP2002
ECCE4255	Applied Programming & Algorithms for Engineers	3	COMP2002
MEIE 5101	Engineering Vibration	3	MEIE3121(or MEIE2129)
MEIE5131	Legged locomotion of robots and animals		MEIE3122
MEIE 5127	Process Control	3	MEIE4122 or MEIE4171 or (MCTE4450)
MEIE 5122	Applied Multi-body Dynamics	3	MEIE3121 or MEIE2129
MEIE5146	Renewable Energy	3	MEIE3142 or MEIE3159 or MCTE4230
MEIE5180	Nanotechnology	3	MEIE4161 or MCTE3230
MEIE5182	Fundamentals of Biomechanics	3	MEIE3102,MEIE3121 or MCTE3230, MEIE2129
MEIE5288	Innovation and Entrepreneurship	3	MEIE4285 (ECCE 5004)
MEIE5145	Design of Thermal Systems	3	MEIE4144, MEIE3142 (MCTE4230, MEIE4141)
MEIE5106	Pressure Vessel & Piping System Design	3	MEIE4102
MEIE5110	Applied Finite Element Methods	3	(MEIE3102 or CIVL3086) (or MCTE3230)
MEIE5182	Fundamentals of Biomechanics	3	MEIE3102,MEIE3121 (or MCTE3230, MEIE2129)
MEIE5162	Corrosion Engineering	3	MCTE3230

* Any other choice of major elective is subjected to the adviser approval

One Course: 3 credits

Code	Title	Credits	Pre-Requisite
MATHxxxx	Discrete Mathematics and Complex Analysis for ECE		
MEIE3270	Operations Research	3	
BIOL3051	Man and The Environment	3	
GEOP3041	General Geophysics	3	PHY2101 & PHY2107
PHYS2901	Introductory Astronomy	3	
PHYS5010	Solar Energy	3	PHYS2102 or PHYS2001
MATH3340	Discrete Math for CS	3	MATH2107 and (COMP2101 or COMP2002)
MATH4452	Introduction to Complex Variables	3	MATH3109 or MATH3171
MATH4481	Introduction to Optimization	3	MATH2108,MATH2202
ECCE5443	Optimization Techniques in Eng.	3	MATH3171

MATH3350	Foundations of Math	3	
MATH3360	Discrete Math	3	MATH 2350
MATH3110	Calculus III	3	
MATH3109	Calculus III	3	

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LIST A: UNIVERSITY ELECTIVES (UE)

Three Courses: 6 credits

#	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	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 Environment	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 Literature	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	Islam 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

