



Degree and Study Plan

College: Engineering
 Department: Electrical and Computer Engineering
 Cohort: 2012
 Degree: Bachelor of Engineering
 Major: Electrical and Computer Engineering
 Specialization: 1. Communications and Signal Processing, 2. Computer Systems and Networks,
 3. Electronic Instrumentation and Control, and 4. Power Systems and Energy

<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)		56
See list F		
Major Electives (AE)		0
See list G		
Specialization Requirements (SR)		24
See list H		
Specialization Electives (SE)		9
See list I		
Minor Requirements (IR)		0
See list J		
Minor Electives (IE)		0
See list K		
TOTAL		136

⁺ Not Credited

For reference contact:	HoD	Ext. 1330
HoD		Date
Dean's Office		Date
Admission and Registration		Date

Department of Electrical and Computer Engineering:

Study Plan for 2012 Cohort (Scheme I – With One Semester General Foundation Program)

	Course Code	Course Title	Cr.	Pre-req./Co-req.*	Cat.
Fall	-	General Foundation Program	-	-	UR
Semester 2 Spring	HIST1010 or ISLM1010	Oman& Islamic Civilization or Islamic Culture	2		UR
	CHEM1071	General Chemistry for Engineers	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
	LANC2160	English for Engineering I	3	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	ARAB1001	Arabic	3		UR
	LANC2161	English for Engineering II	3	LANC2160	CR
	MATH2108	Calculus II	3	MATH2107	CR
	PHYS2107	Physics for Engineering I	4	FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604) and FPMT(0105 or 0109), MATH2107*	CR
		University Elective	2		UE
		University Elective	2		UE
	Total		17		
	ECCE2016	Circuit Analysis I	3	PHYS2107 or PHYS2101	AR
	ECCE3206	Digital Logic Design	3		AR
	SOCI3320	Contemporary Omani Society	1		UR
	PHYS 2108	Physics for Engineering II	4	PHYS2107	CR
	MATH3171	Lin. Alg. &Mult. Calc. for Engineers	3	MATH2108 + LANC2161	CR
	Total		14		
Semester 5 Fall	COMP2002	Intr. to Comp. Program. Engineers	3	FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604) and FPCS (0101 or 0102)	CR
	ECCE3016	Circuit Analysis II	3	ECCE2016 + MATH2108	AR
	ECCE3022	Electromagnetics I	3	MATH3171 + PHYS2108	AR
	ECCE3152	Electronics I	3	ECCE2016	AR
	MATH4174	Differential Equations for Engineers	3	MATH2108 + LANC2161	CR
	Total		15		
Semester 6 Spring	ECCE3036	Measurements & Instrumentation	3	ECCE3016+ECCE3152	AR
	ECCE3142	Signals & Systems	3	ECCE3016	AR
	ECCE3258	Applied Engineering Programming	1	COMP2002	AR
	MATH3330	Discrete Mathematics for E&CE	3	MATH2107+COMP2002	AR
	STAT2103	Probability for Engineers	3	MATH2108*	AR
		University Elective	2		UE
	Total		15		
Semester 7 Fall	ECCE3352	Electrical Technology	3	ECCE3016	AR
	ECCE4122	Principles of Analog & Digital Comm.	3	ECCE3142	AR
	ECCE4158	Electronics II	3	ECCE3152	AR
	ECCE4227	Embedded Systems	3	COMP2002 + ECCE3206 + (ECCE3152 or MCTE3110)	AR
	MATH4452	Introduction to Complex Variables	3	MATH3171	AR
	Total		15		

Department of Electrical and Computer Engineering:
Study Plan for 2012 Cohort (Scheme II – With Two Semester General Foundation Program)

	Course Code	Course Title	Cr.	Pre-req./Co-req.*	Cat
Fall	-	General Foundation Program	-	-	UR
Spring	-	General Foundation Program	-	-	UR
Semester 3 Fall	HIST1010 or ISLM1010	Oman& Islamic Civilization or Islamic Culture	2		UR
	CHEM1071	General Chemistry for Engineers	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
	LANC2160	English for Engineering I	3	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 4 Spring	COMP2002	Intr. to Comp. Program. Engineers	3	FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604) and FPCS (0101 or 0102)	CR
	LANC2161	English for Engineering II	3	LANC2160	CR
	MATH2108	Calculus II	3	MATH2107	CR
	PHYS2107	Physics for Engineering I	4	FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604) and FPMT(0105 or 0109), MATH2107*	CR
		University Elective	2		UE
		University Elective	2		UE
	Total		17		
Summer	ECCE3206	Digital Logic Design	3		AR
	ECCE2016	Circuit Analysis I	3	PHYS2107or PHYS2101	AR
	Total		6		
Semester 5 Fall	ECCE3016	Circuit Analysis II	3	ECCE2016 + MATH2108	AR
	ECCE3152	Electronics I	3	ECCE2016	AR
	MATH3171	Lin. Alg. &Mult. Calc. forEngineers	3	MATH2108 + LANC2161	CR
	MATH4174	Differential Equations for	3	MATH2108 + LANC2161	CR
	PHYS 2108	Physics for Engineering II	4	PHYS2107	CR
	Total		16		
Semester 6 Spring	ARAB1001	Arabic	3		UR
	ECCE3258	Applied Engineering Programming	1	COMP2002	AR
	ECCE4158	Electronics II	3	ECCE3152	AR
	ECCE4227	Embedded Systems	3	COMP2002 + ECCE3206 + (ECCE3152 or MCTE3110)	AR
	MATH4452	Introduction to Complex Variables	3	MATH3171	AR
		University Elective	2		UE
	Total		15		
Summer	ECCE3142	Signals & Systems	3	ECCE3016	AR
	ECCE3352	Electrical Technology	3	ECCE3016	AR
	Total		6		
Semester 7 Fall	ECCE3022	Electromagnetics I	3	MATH3171 + PHYS2108	AR
	ECCE3036	Measurements & Instrumentation	3	ECCE3016+ECCE3152	AR
	ECCE4122	Principles of Analog & Digital Comm.	3	ECCE3142	AR
	MATH3330	Discrete Mathematics for E&CE	3	MATH2107+COMP2002	AR
	SOCI3320	Contemporary Omani Society	1		UR
	STAT2103	Probability for Engineers	3	MATH2108*	AR
	Total		16		

Department of Electrical and Computer Engineering
Study Plan for 2012 Cohort: Communications and Signal Processing Specialization

	Course Code	Course Title	Cr.	Pre-req./Co-req.*	Cat.
January	ENGR3006	Industrial Training I	0	ECCE3152	CR
	Total		0		
Semester 8 Spring	ECCE4022	Electromagnetics II	3	ECCE3022	SR
	ECCE4080	Seminars and Field-Work	0		AR
	ECCE4126	Principles Of Digital Communications	3	ECCE4122	SR
	ECCE4142	Digital Signal Processing	3	ECCE3142 + ECCE4122*	SR
	ECCE4416	Linear Control Systems	3	ECCE3142 or MATH4174	AR
	ECCE4009	Eng Design and Professional Skills	2	ECCE4227	AR
	Total		14		
Summer	ENGR4006	Industrial Training II	0	ENGR3006	CR
	Total		0		
Semester 9 Fall	ECCE5004	Eng. Management & Economics I	3	STAT2103 or MEIE4281	AR
	ECCE5009	Project (Part I)	2	ECCE4009 or PR ¹	AR
	ECCE5112	Antennas & Wave Propagation	3	ECCE4022	SR
	ECCE5123	Optical Communications	3	ECCE4122	SR
	ECCE5xxx**	Track Elective	3		SE
	ECCE4242	Introduction to Computer Networks	3	ECCE4227* or COMP3518*	SR
	Total		17		
Semester 10 Spring	ECCE5099	Project (Part II)	3	ECCE5009	AR
	ECCE5124	Wireless Communications	3	ECCE4124 or ECCE4126	SR
	ECCE5143	Advanced Digital Signal	3	ECCE4142 + ECCE4227	SR
	ECCE5xxx**	Track Elective	3		SE
	ECCE5xxx**	Track Elective	3		SE
	Total		15		

**or ECCE4xxx

PR¹: [ECCE4142 **OR** ECCE4242 **OR** ECCE4416 **OR** ECCE 4312] + MATH4452 + [MATH3330* **OR** MATH3340*]

Note: ECCE5009 will be available only in Fall semester.

Department of Electrical and Computer Engineering
Study Plan for 2012 Cohort: Computer Systems and Networks Specialization

	Course Code	Course Title	Cr.	Pre-req./Co-req.*	Cat.
January	ENGR3006	Industrial Training I	0	ECCE3152	CR
	Total		0		
Semester 8 Spring	ECCE4080	Seminars and Field-Work	0		AR
	ECCE4242	Introduction to Computer Networks	3	ECCE4227* or COMP3518*	SR
	ECCE4254	Operating Systems	3	ECCE4227	SR
	ECCE4255	Applied Programming& Algorithms for Engineers	3	COMP2002	SR
	ECCE4009	Eng Design and Professional Skills	2	ECCE4227	AR
	ECCE5214	Adv. Logic & Computer Interfacing	3	ECCE4227	SR
	Total		14		
Summer	ENGR4006	Industrial Training II	0	ENGR3006	CR
	Total		0		
Semester 9 Fall	ECCE4416	Linear Control Systems	3	ECCE3142 or MATH4174	AR
	ECCE5009	Project (Part I)	2	ECCE4009 or PR ¹	AR
	ECCE5xxx**	Track Elective	3		SE
	ECCE5xxx**	Track Elective	3		SE
	ECCE5242	Advanced Computer Networks	3	ECCE4242	SR
	ECCE5004	Eng. Management & Economics I	3	STAT2103 or MEIE4281	AR
	Total		17		
Semester 10 Spring	ECCE5099	Project (Part II)	3	ECCE5009	AR
	ECCE5223	Adv Embedded Systems Design	3	ECCE4227	SR
	ECCE5232	Computer Architecture & Organ.	3	ECCE4227	SR
	ECCE5215	Computing Systems for Engineering Applications	3	(ECCE4252 or ECCE4255) + ECCE4242	SR
	ECCE5xxx**	Track Elective	3		SE
	Total		15		

**or ECCE4xxx

PR¹: [ECCE4142 OR ECCE4242 OR ECCE4416 OR ECCE 4312] + MATH4452 + [MATH3330*OR MATH3340*]

Note: ECCE5009 will be available only in Fall semester.

Department of Electrical and Computer Engineering
Study Plan for 2012 Cohort: Electronic Instrumentation and Control Specialization

	Course Code	Course Title	Cr.	Pre-req./Co-req.*	Cat.
January	ENGR3006	Industrial Training I	0	ECCE3152	CR
	Total		0		
Semester 8 Spring	ECCE4080	Seminars and Field-Work	0		AR
	ECCE4142	Digital Signal Processing	3	ECCE3142 + ECCE4122*	SR
	ECCE4358	Electrical Machines	3	ECCE3352	SR
	ECCE4416	Linear Control Systems	3	ECCE3142 or MATH4174	SR
	ECCE4455	Sensors and Actuators	3	ECCE3036	SR
	ECCE4009	Eng Design and Professional Skills	2	ECCE4227	AR
	Total		14		
Summer	ENGR4006	Industrial Training II	0	ENGR3006	CR
	Total		0		
Semester 9 Fall	ECCE4467	Power Electronics & Drives	3	(ECCE3152 or MCTE3110)+ (ECCE3352 or MCTE3210)	SR
	ECCE5009	Project (Part I)	2	ECCE4009 or PR ¹	AR
	ECCE5xxx**	Track Elective	3		SE
	ECCE5xxx**	Track Elective	3		SE
	ECCE5452	Computer-Aided Instrumentation	3	ECCE4456 or ECCE4455+ ECCE4227	SR
	ECCE5004	Eng. Management & Economics I	3	STAT2103 or MEIE4281	AR
	Total		17		
Semester 10 Spring	ECCE5099	Project (Part II)	3	ECCE5009	AR
	ECCE5445	Control System Design	3	ECCE4416 or MCTE4250	SR
	ECCE4436	Industrial Control Systems Design	3	ECCE4416	SR
	ECCE5231	Industrial Networks and Operating Systems	3	COMP2002 + ECCE4122 Incompatible with ECCE4242 and ECCE4254	SR
	ECCE5xxx**	Track Elective	3		SE
	Total		15		

**or ECCE4xxx

PR¹: [ECCE4142 OR ECCE4242 OR ECCE4416 OR ECCE 4312] + MATH4452 + [MATH3330*OR MATH3340*]

Note: ECCE5009 will be available only in Fall semester.

Department of Electrical and Computer Engineering
Study Plan for 2012 Cohort: Power Systems and Energy Specialization

	Course Code	Course Title	Cr.	Pre-req./Co-req.*	Cat.
January	ENGR3006	Industrial Training I	0	ECCE3152	CR
	Total		0		
Semester 8 Spring	ECCE4022	Electromagnetic II	3	ECCE3022	SR
	ECCE4080	Seminars and Field-Work	0		AR
	ECCE4312	Power System Analysis I	3	ECCE3352	SR
	ECCE4358	Electrical Machines	3	ECCE3352	SR
	ECCE4416	Linear Control Systems	3	ECCE3142 or MATH4174	SR
	ECCE4009	Eng Design and Professional Skills	2	ECCE4227	AR
	Total		14		
Summer	ENGR4006	Industrial Training II	0	ENGR3006	CR
	Total		0		
	ECCE4316	Power System Analysis II	3	ECCE4312	SR
	ECCE4467	Power Electronics & Drives	3	(ECCE3152 or MCTE3110)+ (ECCE3352 or MCTE3210)	SR
	ECCE5009	Project (Part I)	2	ECCE4009 or PR ¹	AR
	ECCE5xxx**	Track Elective	3		SE
	ECCE5xxx**	Track Elective	3		SE
	ECCE5004	Eng. Management & Economics I	3	STAT2103 or MEIE4281	AR
	Total		17		
Semester 10 Spring	ECCE5099	Project (Part II)	3	ECCE5009	AR
	ECCE5302	Power Systems Protection	3	ECCE4316	SR
	ECCE5303	Power Distribution System Eng.	3	ECCE4316	SR
	ECCE5xxx**	Track Elective	3		SE
	ECCE5332	High Voltage Engineering	3	ECCE3352* or ECCE4022* + ECCE4312	SR
	Total		15		

**or ECCE4xxx

PR¹: [ECCE4142 **OR** ECCE4242 **OR** ECCE4416 **OR** ECCE 4312] + MATH4452 + [MATH3330***OR** MATH3340*]

Note: ECCE5009 will be available only in Fall semester.

Department of Electrical and Computer Engineering - Degree Plan for 2012
LIST A^T – UNIVERSITY ELECTIVES (6 Credits)

#	Code	Title	Credits	College/Dept	Prerequisite
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	History of 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. EthnJewwl. 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 Enviroment	2	Arts	
31	GEOG2341	Dev. Countries	2	Arts	
32	HIST1030	History of the GCC Countries	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	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 Electrical and Computer Engineering - Degree Plan for Cohort 2012

LIST B: COLLEGE REQUIREMENTS (35Credits)

Course Code	Course Title	Credit	Pre-Requisite / Co-req. *
CHEM1071	General Chemistry for Engineers	3	FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604) and FPMT(0105 or 0109)
COMP2xxx [@]		3	
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)
ENGR3006	Industrial Training I	0	ECCE3152
ENGR4006	Industrial Training II	0	ENGR3006
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
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	MATH2107
MATH3171	Lin. Alg. & Mult. Calc. for Engineers	3	MATH2108+LANC2161
MATH4174	Differential Equations for Engineers	3	MATH2108+LANC2161
PHYS2107	General Physics I	4	FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604) and FPMT(0105 or 0109), MATH2107*
PHYS2108	General Physics II	4	PHYS2107
Total		35	

@ For the department of Electrical and Computer Engineering the course is, COMP2002 - Introduction to Computer Programming for Engineers.

Department of Electrical and Computer Engineering - Degree Plan for 2012

LIST F: MAJOR REQUIREMENTS (56 Credits)

Course Code	Course Title	Cr	Pre-Requisite / Co-req. *
ECCE2016	Circuit Analysis I	3	PHYS2107 or PHYS2101
ECCE3016	Circuit Analysis II	3	ECCE2016
ECCE3022	Electromagnetics I	3	MATH3171 + PHYS2108
ECCE3036	Measurements & Instrumentation	3	ECCE3016 + ECCE3152
ECCE3142	Signals & Systems	3	ECCE3016
ECCE3152	Electronics I	3	ECCE2016
ECCE3206	Digital Logic Design	3	
ECCE3352	Electrical Technology	3	ECCE3016
ECCE3258	Applied Engineering Programming	1	COMP2002
ECCE4009	Eng Design and Professional Skills	2	ECCE4227
ECCE4080	Seminars and Field-Work	0	
ECCE4122	Principles of Analog & Digital Comm.	3	ECCE3142
ECCE4227	Embedded Systems	3	COMP2002 + ECCE3206 + (ECCE3152 or MCTE3110)
ECCE4158	Electronics II	3	ECCE3152
ECCE4416	Linear Control Systems	3	ECCE3142 or MATH4174
ECCE5004	Eng. Management & Economics I	3	STAT2103 or MEIE4281
ECCE5009	Project (Part I)	2	ECCE4009 or PR ¹
ECCE5099	Project (Part II)	3	ECCE5009
MATH3330	Discrete Mathematics for E&C Eng	3	MATH2107
MATH4452	Introduction to Complex Variables	3	MATH3171
STAT2103	Probability for Engineers	3	MATH2108*
Total		56	

PR¹: [ECCE4142 **OR** ECCE4242 **OR** ECCE4416 **OR** ECCE 4312] + MATH4452 + [MATH3330 **OR** MATH3340*]

Department of Electrical and Computer Engineering
List H: Specializations Requirements (24 credits)
H1: Communications and Signal Processing Specialization: Degree Plan for 2012

Course Code	Course Title	Cr.	Pre-req./Co-req.*
ECCE4022	Electromagnetic II	3	ECCE3022
ECCE4142	Digital Signal Processing	3	ECCE3142 +ECCE4122*
ECCE4126	Principles Digital Communications	3	ECCE4122
ECCE4242	Introduction to Computer Networks	3	ECCE4227* or COMP3518*
ECCE5112	Antennas & Wave Propagation	3	ECCE4022
ECCE5123	Optical Communications	3	ECCE4122
ECCE5124	Wireless Communications	3	ECCE4124 or ECCE4126
ECCE5143	Advanced Digital Signal Processing	3	ECCE4142 + ECCE4227

Department of Electrical and Computer Engineering
List H: Specializations Requirements (24 credits)
H2: Computer Systems and Networks Specialization: Degree Plan for 2012

Course Code	Course Title	Cr.	Pre-req./Co-req.*
ECCE4242	Introduction to Computer Networks	3	ECCE4227* or COMP3518*
ECCE4254	Operating Systems	3	COMP2002
ECCE4255	Applied Programming& Algorithms for Engineers	3	COMP2002
ECCE5214	Adv. Logic & Computer Interfacing	3	ECCE4227
ECCE5215	Computing Systems for Engineering Applications	3	(ECCE4252 or ECCE4255) + ECCE4242
ECCE5223	Adv Embedded Systems Design	3	ECCE4227
ECCE5232	Computer Architecture & Organ.	3	ECCE4227
ECCE5242	Advanced Computer Networks	3	ECCE4242

Department of Electrical and Computer Engineering
List H: Specializations Requirements (24 credits)
H3: Electronic Instrumentation and Control Specialization: Degree Plan for 2012

Course Code	Course Title	Cr.	Pre-req./Co-req.*
ECCE4142	Digital Signal Processing	3	ECCE3142 + ECCE4122*
ECCE4358	Electrical Machines	3	ECCE3352
ECCE4436	Industrial Control Systems Design	3	ECCE4416
ECCE4455	Sensors and Actuators	3	ECCE3036
ECCE4467	Power Electronics & Drives	3	(ECCE3152 or MCTE3110)+ (ECCE3352 or MCTE3210)
ECCE5445	Control System Design	3	ECCE4416 or MCTE4250
ECCE5452	Computer-Aided Instrumentation	3	ECCE4456 or 4455) + ECCE4227
ECCE5231	Industrial Networks and Operating Systems	3	COMP2002 + ECCE4122 Incompatible with ECCE4242 and ECCE4254

Department of Electrical and Computer Engineering
List H: Specializations Requirements (24 credits)
H4: Power Systems and Energy Specialization: Degree Plan for 2012

Course Code	Course Title	Cr.	Pre-req./Co-req.*
ECCE4022	Electromagnetic II	3	ECCE3022
ECCE4312	Power System Analysis I	3	ECCE3352
ECCE4316	Power System Analysis II	3	ECCE4312
ECCE4358	Electrical Machines	3	ECCE3352
ECCE4467	Power Electronics & Drives	3	(ECCE3152 or MCTE3110)+ (ECCE3352 or MCTE3210)
ECCE5302	Power Systems Protection	3	ECCE4316
ECCE5303	Power Distribution System Eng.	3	ECCE4316
ECCE5332	High Voltage Engineering	3	ECCE3352* or ECCE4022* + ECCE4312

LIST I: SPECILIZATION ELECTIVES (9 CREDITS)
(A COMBINED LIST OF SPECIALIZATION ELECTIVES)
Department of Electrical and Computer Engineering - Degree Plan for 2012

Course Code	Course Title	Cr	Pre-requisite
ECCE4005	Numerical Methods for Engineers	3	((ENGR2216,MATH3171) or (COMP2002,MATH3171) or (COMP2216,MATH3171))
ECCE4022	Electromagnetics II	3	ECCE3022
ECCE4124	Digital Communications	4	ECCE4122
ECCE4126	Principles of Digital Communications	3	ECCE4122
ECCE4142	Digital Signal Processing	3	ECCE3142 + ECCE4122*
ECCE4203	Advanced Logic Design	3	ECCE3206
ECCE4213	Digital Electronics – Reliability and Testing	3	ECCE3152
ECCE4232	Introduction to Distributed & Parallel Systems	3	ECCE4227
ECCE4242	Introduction to Computer Networks	3	ECCE4227* or COMP3518*
ECCE4252	Data Structure & Algorithms	3	COMP2002
ECCE4253	Object Oriented Programming	3	COMP2002
ECCE4254	Operating Systems	3	COMP2002
ECCE4255	Applied Programming & Algorithms for Engrs	3	COMP2002
ECCE4256	Eng Design Issues and Professional Practices	3	ECCE4227
ECCE4263	Data Base Systems	3	COMP2002
ECCE4272	Artificial Intelligence	3	
ECCE4282	Coding and Data Encryption	3	ECCE3122 or ECCE4122
ECCE4312	Power System Analysis I	3	ECCE3352
ECCE4316	Power System Analysis II	3	ECCE4312
ECCE4358	Electrical Machines	3	ECCE3352
ECCE4360	Renewable Energy Systems	3	ECCE3352
ECCE4422	Digital Control Systems	3	ECCE4416
ECCE4436	Industrial Control Systems Design	3	ECCE4416
ECCE4455	Sensors and Actuators	3	ECCE3036
ECCE4467	Power Electronics & Drives	3	[(ECCE3152 or MCTE3110)+ (ECCE3352 or MCTE3210)]
ECCE5005	Engineering Management & Economics II	3	ECCE5004
ECCE5008	Project Management	3	ECCE5004
ECCE5112	Antennas & Wave Propagation	3	ECCE4022
ECCE5122	Communications Systems	3	ECCE4124 or ECCE4126
ECCE5123	Optical Communications	3	ECCE4122
ECCE5124	Wireless Communications	3	ECCE4124 or ECCE4126
ECCE5132	Information Theory	3	ECCE4122
ECCE5134	Selected Topics in Communications	3	ECCE4124 or ECCE4126
ECCE5142	Image and Video Processing	3	ECCE4142
ECCE5143	Advanced Digital Signal Processing	3	ECCE4142 + ECCE4227
ECCE5152	Electronic Communication Circuits	3	ECCE4157 or ECCE4158
ECCE5162	Microwave Engineering	3	ECCE4022
ECCE5164	RF Comm. Circuits	3	ECCE4157 or ECCE4158
ECCE5212	VLSI Design	3	ECCE4227
ECCE5213	Fault-Tolerant Computing Systems	3	ECCE4227
ECCE5214	Adv. Logic & Computer Interfacing	3	ECCE4227
ECCE5215	Computing Systems for Eng Applications	3	(ECCE4255 or ECCE4252) + ECCE4242
ECCE5222	Microprocessor Interfacing	3	ECCE4227
ECCE5223	Adv Embedded Systems Design	3	ECCE4227
ECCE5224	Microprocessor Based Control Design	3	ECCE4227
ECCE5231	Industrial Networks and Operating Systems	3	COMP2002 + ECCE4122 Incompatible with ECCE4242 and ECCE4254

ECCE5233	Computer Architecture and Organization II	3	ECCE5232
ECCE5242	Advanced Computer Networks	3	ECCE4242
ECCE5243	Network Software Design & Programming	3	ECCE4242
ECCE5252	Software Engineering	3	ECCE4252 or ECCE4255
ECCE5282	Computer Network Security	3	ECCE4242
ECCE5283	Cryptography, Security & e-Commerce	3	ECCE4242
ECCE5292	Selected Topics in Computer Engineering	3	ECCE4227+ (ECCE4242 or ECCE5231)
ECCE5302	Power Systems Protection	3	ECCE4316
ECCE5303	Power Distribution System Eng.	3	ECCE4316
ECCE5304	Power Stations	3	ECCE4312
ECCE5312	Power System Control and Stability	3	ECCE4316
ECCE5313	Electric Power Transmission System Eng.	3	ECCE4316
ECCE5314	Selected Topics in Power	3	ECCE4312
ECCE5322	Electrical Power Systems Quality	3	ECCE4312
ECCE5323	Power System Operation	3	ECCE4316
ECCE5324	Power System Reliability and Planning	3	ECCE4312
ECCE5332	High Voltage Engineering	3	ECCE3352* or ECCE4022* + ECCE4312
ECCE5333	Power System Economics	3	ECCE4312
ECCE5342	Electrical Engineering Material	3	PHYS2108
ECCE5352	Generalized Machine Theory	3	ECCE4358
ECCE5412	Mechatronics	3	ECCE4416
ECCE5422	Selected Topics in Control Systems	3	ECCE4416 or MCTE4250
ECCE5432	Programmable Logic Control Systems	3	ECCE3206 + ECCE4416
ECCE5433	Modern Control Systems	3	ECCE4416
ECCE5445	Control System Design	3	ECCE4416 or MCTE4250
ECCE5434	System Dynamics and Simulation	3	ECCE3142
ECCE5452	Computer-Aided Instrumentation	3	(ECCE4456 or 4455) + ECCE4227
ECCE5443	Optimization Techniques in Engineering	3	MATH3171
ECCE5462	Electric Drives	3	ECCE4466 or ECCE4467
ECCE5464	Advanced Power Electronics	3	ECCE4466 or ECCE4467