



Degree and Study Plan

College: Engineering
 Department: Electrical and Computer Engineering
 Cohort: 2015
 Degree: Bachelor of Engineering
 Major: Electrical and Computer Engineering
 Specialization:

1. Communications and Signal Processing	(CSP)
2. Computer Systems and Networks	(CSN)
3. Electronic Instrumentation and Control	(EIC)
4. Power Systems and Energy	(PSE)

Summary of Credits		
1	University Requirements (UR)	6
	General Foundation Program	(0)
	Arabic	(3)
	Contemporary Omani Society	(1)
	Oman & Islamic Civilization or Islamic Culture	(2)
2	University Elective (UE)	6
3	College Requirements (CR) (see List B)	32
4	College Elective (CE) (see List C)*	3
5	Departmental Requirements (DR) (see List D)*	56
6	Departmental Elective (DE) (see List E)*	0
7	Major Requirements (AR) (see List F)	0
8	Major Elective (AE) (see List G)*	0
9	Specialization Requirements (SR) (see List H)	24
10	Specialization Elective (SE) (see List I)	9
11	Minor Requirement (IR) (see List J)*	0
12	Minor Elective (IE) (see List K)*	0
Total credits		136

* Not attached as no courses for ECE department.

For reference contact: Dr. Ahmed Al Maashri

Ext. 1363/1390

Date: 29th June 2022

Dean's Office

Admission and Registration



Date 29/6/2022

Date

Department of Electrical and Computer Engineering
Study Plan for 2015 Cohort (SCHEME I – With One Semester General Foundation Program)

	Course Code	Course Title	Cr.	Pre-req./Co-req.*	Cat.
Fall-15	-	General Foundation Program	-	-	UR
Semester 2 Spring-16	HIST1010 or ISLM1010	Oman & Islamic Civilization or Islamic Culture	2		UR
	CHEM1071	General Chemistry for Engineering	3	FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604) and FPMT(0105 or 0109)	CR
	COMP2002	Intr. To Comp. Program. Engineers	3	FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604) and FPCS (0101 or 0102)	CE
	ENGR1501	Introduction to Engineering	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		16		
Semester 3 Fall -16	ARAB1001	Arabic	3		UR
	ENGR1600	Workshop I	1	FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604)	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
	Total		14		
Semester 4 Spring17	ECCE2016	Circuit Analysis I	3	MATH2107	AR
	ECCE3206	Digital Logic Design	3		AR
	MATH3171	Lin. Alg. & Mult. Calc. for Engineers	3	MATH2108 + LANC2161	CR
	PHYS 2108	Physics for Engineering II	4	PHYS2107 OR PHYS2101	CR
		University Elective	2		UE
	Total		15		
Semester 5 Fall -17	ECCE3016	Circuit Analysis II	3	ECCE2016	AR
	ECCE3152	Electronics I	3	ECCE2016	AR
	ECCE3022	Electromagnetics I	3	PHYS2108 + MATH 3171	AR
	MATH4xxx	Discrete Maths & Complex Analysis	3	MATH2108	AR
	MATH4174	Differential Equations for Engineers	3	MATH2108 + LANC2161	CR
	Total		15		
Semester 6 Spring-18	ECCE3142	Signals & Systems	3	ECCE3016 + MATH4174	AR
	ECCE3352	Electrical Technology	3	ECCE3016	AR
	MATH4xxx	Numerical Analysis for Engineers	3	MATH3171 and MATH4174 and [COMP2002 or ENGR2217]	AR
	ECCE4227	Embedded Systems	3	COMP2002 + ECCE3206 + (ECCE3152 or MCTE3110)	AR
	STAT2103	Probability for Engineers	3	MATH2107	AR
	Total		15		

* OR ENGR 2217-Programming for Engineers

Study Plan for 2015 Cohort (SCHEME II – With Two Semester General Foundation Program)

	Course Code	Course Title	Cr.	Pre-req./Co-req.*	Cat.
Fall-15	-	General Foundation Program	-	-	UR
Spring-16	-	General Foundation Program	-	-	UR
Semester 3 Fall-16	HIST1010 or ISLM1010	Oman& Islamic Civilization or Islamic Culture	2		UR
	CHEM1071	General Chemistry for Engineering	3	FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604) and FPMT(0105 or 0109)	CR
	COMP2002&	Intr. to Comp. Program. Engineers	3	FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604) and FPCS (0101 or 0102)	CE
	ENGR1501	Introduction to Engineering	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		16		
Semester 4 Spring-17	ARAB1001	Arabic	3		UR
	ENGR1600	Workshop I	1	FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604)	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
	Total		16		
Summer-17	ECCE2016	Circuit Analysis I	3	MATH2107	AR
	ECCE3206	Digital Logic Design	3		AR
	Total		6		
Semester 5 Fall-17	ECCE3016	Circuit Analysis II	3	ECCE2016	AR
	ECCE3152	Electronics I	3	ECCE2016	AR
	MATH3171	Lin. Alg. & Mult. Calc. for Engineers	3	MATH2108 + LANC2161	CR
	MATH4174	Differential Equations for Engineers	3	MATH2108 + LANC2161	CR
	PHYS 2108	Physics for Engineering II	4	PHYS2107 OR PHYS2101	CR
	Total		16		
Semester 6 Spring-18	ECCE3022	Electromagnetics I	3	MATH3171 + PHYS2108	AR
	MATH4xxx	Discrete Maths & Complex Analysis	3	MATH2108	AR
	ECCE4227	Embedded Systems	3	COMP2002 + ECCE3206 + (ECCE3152 or MCTE3110)	AR
	MATH4xxx	Numerical Analysis for Engineers	3	MATH3171 and MATH4174 and [COMP2002 or ENGR2217]	AR
	STAT2103	Probability for Engineers	3	MATH2107	AR
	Total		15		
Summer-18	ECCE3142	Signals & Systems	3	ECCE3016 + MATH4174	AR
	ECCE3352	Electrical Technology	3	ECCE3016	AR
	Total		6		

& OR ENGR 2217-Programming for Engineers

Department of Electrical and Computer Engineering
Study Plan for 2015 Cohort: Communications and Signal Processing Specialization

	Course Code	Course Title	Cr.	Pre-req.	Cat.
Semester 7 Fall-18	ECCE3038	Elect. Measurements & Instrumentation	2	ECCE3016+ECCE3152	AR
	ECCE3258	Applied Engineering Programming	1	COMP2002	AR
	ECCE4122	Principles of Analog & Digital Comm.	3	ECCE3142+ STAT2103	AR
	ECCE4022	Electromagnetics II	3	ECCE3022	SR
	ECCE4158	Electronics II	3	ECCE3152	AR
		University Elective	2		UE
	Total		14		
January-19	ENGR3006	Industrial Training I	0	ECCE3152	CR
	Total		0		
Semester 8 Spring-19	ECCE4009	Eng. Design and Professional Skills	2	ECCE3142+ECCE3352+ECCE3152+ECCE3206	AR
	ECCE4082	Professional Skills	1	LANC2161	AR
	ECCE5112	Antennas & Wave Propagation	3	ECCE4022	SR
	ECCE4126	Principles Of Digital Communications	3	ECCE4122	SR
	ECCE4142	Digital Signal Processing	3	ECCE4227+ ECCE3142	SR
	ECCE4416	Linear Control Systems	3	ECCE3142	AR
	Total		15		
Summer-19	ENGR4006	Industrial Training II	0	ENGR3006	CR
	Total		0		
Semester 9 Fall-19	ECCE4242	Introduction to Computer Networks	3	ECCE4227 or COMP3518 or COMP3501 [Incompatible with ECCE5231 and ECCE4254]	SR
	ECCE5009	Project (Part I)	2	ECCE4009 and PR ¹	AR
	ECCE5123	Optical Communications	3	ECCE4122	SR
	ECCE5124	Wireless Communications	3	ECCE4122	SR
	ECCE5143	Advanced Digital Signal Processing	3	ECCE4142 + ECCE4227	SR
	ECCE5xxx**	Track Elective	3		SE
	Total		17		
	ECCE5004	Eng. Management & Economics I	3	STAT2103	AR
	ECCE5xxx**	Track Elective	3		SE
	ECCE5099	Project (Part II)	3	ECCE5009	AR
	ECCE5xxx**	Track Elective	3		SE
	SOCY1001	Omani Contemporary Society	1		UR
		University Elective	2		UE
	Total		15		

**or ECCE4xxx

PR¹: Internal regulation [enforced by the ECE Department]

Note: ECCE5009 will be available only in each fall semester.

Department of Electrical and Computer Engineering
Study Plan for 2015 Cohort: Computer Systems and Networks Specialization

	Course Code	Course Title	Cr.	Pre-req.	Cat.
Semester 7 Fall-18	ECCE3038	Elect. Measurements & Instrumentation	2	ECCE3016+ECCE3152	AR
	ECCE3258	Applied Engineering Programming	1	COMP2002	AR
	ECCE4122	Principles of Analog & Digital Comm.	3	ECCE3142 + STAT2103	AR
	ECCE5004	Eng. Management & Economics I	3	STAT2103	AR
	ECCE4158	Electronics II	3	ECCE3152	AR
		University Elective	2		UE
	Total		14		
January-19	ENGR3006	Industrial Training I	0	ECCE3152	CR
	Total		0		
Semester 8 Spring-19	ECCE4009	Eng. Design and Professional Skills	2	ECCE3142+ECCE3352+ECCE3152+ECCE3206	AR
	ECCE4082	Professional Skills	1	LANC2161	AR
	ECCE4242	Introduction to Computer Networks	3	ECCE4227 or COMP3518 or COMP3501 [In compatible with ECCE5231 and ECCE4254]	SR
	ECCE4254	Operating Systems	3	ECCE4227	SR
	ECCE4257	Applied Algorithms for ECE	3	COMP2002+ECCE3258	SR
	ECCE5214	Adv. Logic & Computer Interfacing	3	ECCE4227	SR
	Total		15		
Summer-19	ENGR4006	Industrial Training II	0	ENGR3006	CR
	Total		0		
Semester 9 Fall-19	ECCE4416	Linear Control Systems	3	ECCE3142	AR
	ECCE5009	Project (Part I)	2	ECCE4009 and PR ¹	AR
	ECCE5xxx**	Track Elective	3		SE
	ECCE5xxx**	Track Elective	3		SE
	ECCE5223	Adv. Embedded Systems Design	3	ECCE4227	SR
		University Elective	2		UE
	Total		16		
Semester 10 Spring-20	ECCE5099	Project (Part II)	3	ECCE5009	AR
	ECCE5242	Advanced Computer Networks	3	ECCE4242 or ECCE5231	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
	SOCY1001	Omani Contemporary Society	1		UR
	Total		16		

**or ECCE4xxx

PR¹: Internal regulation [enforced by the ECE Department]

Note: ECCE5009 will be available only in each fall semester.

Department of Electrical and Computer Engineering
Study Plan for 2015 Cohort: Electronic Instrumentation and Control Specialization

	Course Code	Course Title	Cr.	Pre-req.	Cat.
Semester 7 Fall-18	ECCE3038	Elect. Measurements & Instrumentation	2	ECCE3016+ECCE3152	AR
	ECCE3258	Applied Engineering Programming	1	COMP2002	AR
	ECCE4122	Principles of Analog & Digital Comm.	3	ECCE3142 + STAT2103	AR
	ECCE5004	Eng. Management & Economics I	3	STAT2103	AR
	ECCE4158	Electronics II	3	ECCE3152	AR
		University Elective	2		UE
	Total		14		
January-19	ENGR3006	Industrial Training I	0	ECCE3152	CR
	Total		0		
Semester 8 Spring-19	ECCE4416	Linear Control Systems	3	ECCE3142	AR
	ECCE4009	Eng. Design and Professional Skills	2	ECCE3142+ECCE3352+ECCE3152+ ECCE3206	AR
	ECCE4082	Professional Skills	1	LANC2161	AR
	ECCE4358	Electrical Machines	3	ECCE3352	SR
	ECCE4455	Sensors and Actuators	3	ECCE3036	SR
	ECCE4467	Power Electronics & Drives	3	(ECCE3152 or MCTE3110)+ (ECCE3352 or MCTE3210)	SR
	Total		15		
Summer-19	ENGR4006	Industrial Training II	0	ENGR3006	CR
	Total		0		
Semester 9 Fall-19	ECCE4142	Digital Signal Processing	3	ECCE4227+ ECCE3142	SR
	ECCE5009	Project (Part I)	2	ECCE4009 and PR ¹	AR
	ECCE5xxx**	Track Elective	3		SE
	ECCE5xxx**	Track Elective	3		SE
	ECCE5452	Computer-Aided Instrumentation	3	ECCE4456 or ECCE4455+ ECCE4227	SR
		University Elective	2		UE
	Total		16		
Semester 10 Spring-20	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	ECCE4227 Incompatible with ECCE4242 and ECCE4254	SR
	ECCE5xxx**	Track Elective	3		SE
	SOCY1001	Omani Contemporary Society	1		UR
	Total		16		

**or ECCE4xxx

PR¹: Internal regulation [enforced by the ECE Department]

Note: ECCE5009 will be available only in each fall semester.

Department of Electrical and Computer Engineering
Study Plan for 2015 Cohort: Power Systems and Energy Specialization

	Course Code	Course Title	Cr.	Pre-req.	Cat.
Semester 7 Fall-18	ECCE3038	Elect. Measurements & Instrumentation	2	ECCE3016+ECCE3152	AR
	ECCE4022	Electromagnetics II	3	ECCE3022	SR
	ECCE4312	Power System Analysis I	3	ECCE3352	SR
	ECCE4358	Electrical Machines	3	ECCE3352	SR
	ECCE4158	Electronics II	3	ECCE3152	AR
	ECCE3258	Applied Engineering Programming	1	COMP2002	AR
	Total		15		
Semester 8 January-19	ENGR3006	Industrial Training I	0	ECCE3152	CR
	Total		0		
	ECCE4009	Eng. Design and Professional Skills	2	ECCE3142+ECCE3352+ECCE3152+ECCE3206	AR
	ECCE4082	Professional Skills	1	LANC2161	AR
	ECCE4122	Principles of Analog & Digital Comm.	3	ECCE3142 + STAT2103	AR
	ECCE4316	Power System Analysis II	3	ECCE4312	SR
	ECCE4467	Power Electronics & Drives	3	(ECCE3152 or MCTE3110)+ (ECCE3352 or MCTE3210)	SR
		University Elective	2		UE
	Total		14		
Summer- 19	ENGR4006	Industrial Training II	0	ENGR3006	CR
	Total		0		
Semester 9 Fall-19	ECCE4416	Linear Control Systems	3	ECCE3142	AR
	ECCE5009	Project (Part I)	2	ECCE4009 and PR ¹	AR
	ECCE5303	Power Distribution System Eng.	3	ECCE4312	SR
	ECCE5332	High Voltage Engineering	3	ECCE4312	SR
	ECCE5xxx**	Track Elective	3		SE
	ECCE5xxx**	Track Elective	3		SE
	Total		17		
Semester 10 Spring-20	ECCE5004	Eng. Management & Economics I	3	STAT2103	AR
	ECCE5099	Project (Part II)	3	ECCE5009	AR
	ECCE5302	Power Systems Protection	3	ECCE4316	SR
	ECCE5xxx**	Track Elective	3		SE
	SOCY1001	Omani Contemporary Society	1		UR
		University Elective	2		UE
	Total		15		

**or ECCE4xxx

PR¹: Internal regulation [enforced by the ECE Department]

Note: ECCE5009 will be available only in each fall semester.

LIST A[†] - 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 Towns and their Cultural Remains	2	Arts	
11	ARCH1536	The Archaeology and Knowledge of the Arabian Peninsula	2	Arts	
12	ARCH1537	Cult. Development Arab Gulf	2	Arts	
13	ARCH1538	Oral History Cult. Heritage	2	Arts	
14	ARCH1539	The history and ethnography of jewelry and items of personal adornment in Oman	2	Arts	
15	ARCH1540	Natural Culture Heritage Oman	2	Arts	
16	ARCH1541	Oasis Settlements and Vernacular Architecture in Oman	2	Arts	
17	ARCH1550	Development of Arts and Architecture in 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 Natural Environments 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 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	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	Trends of Contemporary Philosophical Thought	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. Please also refer to the college of engineering regulations.

Department of Electrical and Computer Engineering - Degree Plan for Cohort 2015
LIST B: COLLEGE REQUIREMENTS (32 Credits)

Course Code	Course Title	Credit	Pre-Requisite
CHEM1071	General Chemistry for Engineering	3	FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604) and FPMT(0105 or 0109)
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	Physics for Engineering I	4	FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604) and FPMT(0105 or 0109)
PHYS2108	Physics for Engineering II	4	PHYS2107 OR PHYS2101
Total		32	

Department of Electrical and Computer Engineering - Degree Plan for Cohort 2015
LIST C: COLLEGE ELECTIVE (3 Credits) @

Course Code	Course Title	Credit	Pre-Requisite
COMP2002	Intr. to Comp. Program. Engineers	3	FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604) and FPMS (0101 or 0102)
ENGR2217	Programming for Engineers	3	FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604) and FPMS (0101 or 0102)
Total		3	

@ For the department of Electrical and Computer Engineering the course is, COMP2002 OR ENGR 2217.

Department of Electrical and Computer Engineering - Degree Plan for 2015
LIST D: DEPARTMENT REQUIREMENTS (56 Credits)

Course Code	Course Title	Cr	Pre-Requisite / Co-req. *
ECCE2016	Circuit Analysis I	3	MATH2107
ECCE3016	Circuit Analysis II	3	PHYS 2108 + ECCE2016
ECCE3022	Electromagnetics I	3	MATH3171 + PHYS2108
ECCE3038	Elect. Measurements & Instrumentation	2	ECCE3016 + ECCE3152
ECCE3142	Signals & Systems	3	ECCE3016 + MATH4174
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	ECCE3142+ECCE3352+ECCE3152+ECCE3206
ECCE4082	Professional Skills	1	LANC2161
ECCE4122	Principles of Analog & Digital Comm.	3	ECCE3142 + STAT2103
ECCE4227	Embedded Systems	3	COMP2002 + ECCE3206 + (ECCE3152 or MCTE3110)
ECCE4158	Electronics II	3	ECCE3152
ECCE4416	Linear Control Systems	3	ECCE3142
ECCE5004	Eng. Management & Economics I	3	STAT2103
ECCE5009	Project (Part I)	2	ECCE4009 and PR ¹
ECCE5099	Project (Part II)	3	ECCE5009
MATH4xxx	Discrete Maths & Complex Analysis	3	MATH2108
MATH4xxx	Numerical Analysis for Engineers	3	MATH3171 and MATH4174 and [COMP2002 or ENGR2217]
STAT2103	Probability for Engineers	3	MATH2107
Total		56	

Department of Electrical and Computer Engineering – Degree Plan for 2015
LIST H: Specializations Requirements (24 credits)

H1: Communications and Signal Processing Specialization

Course Code	Course Title	Cr.	Pre-req./Co-req.*
ECCE4022	Electromagnetics II	3	ECCE3022
ECCE4142	Digital Signal Processing	3	ECCE4227+ ECCE3142
ECCE4126	Principles Digital Communications	3	ECCE4122
ECCE4242	Introduction to Computer Networks	3	ECCE4227 or COMP3518 or COMP3501 [Incompatible with ECCE5231 and ECCE4254]
ECCE5112	Antennas & Wave Propagation	3	ECCE4022
ECCE5123	Optical Communications	3	ECCE4122
ECCE5124	Wireless Communications	3	ECCE4122
ECCE5143	Advanced Digital Signal Processing	3	ECCE4142 + ECCE4227

H2: Computer Systems and Networks Specialization

Course Code	Course Title	Cr.	Pre-req./Co-req.*
ECCE4242	Introduction to Computer Networks	3	ECCE4227 or COMP3518 or COMP3501 [Incompatible with ECCE5231 and ECCE4254]
ECCE4254	Operating Systems	3	COMP2002
ECCE4257	Applied Algorithms for ECE	3	COMP2002+ECCE3258
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 or ECCE5231

H3: Electronic Instrumentation and Control Specialization

Course Code	Course Title	Cr.	Pre-req./Co-req.*
ECCE4142	Digital Signal Processing	3	ECCE4227+ ECCE3142
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	ECCE4227 and COMP2002 & also Incompatible with ECCE4242 and ECCE4254

H4: Power Systems and Energy Specialization

Course Code	Course Title	Cr.	Pre-req./Co-req.*
ECCE4022	Electromagnetics 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	ECCE4312
ECCE5332	High Voltage Engineering	3	ECCE4312

LIST I: SPECILIZATION ELECTIVES (9 CREDITS)
(A COMBINED LIST OF SPECIALIZATION ELECTIVES)

Department of Electrical and Computer Engineering – Degree Plan for 2015

Course Code	Course Title	Cr	Pre-requisite
ECCE4022	Electromagnetics II	3	ECCE3022
ECCE4124	Digital Communications	4	ECCE4122
ECCE4126	Principles of Digital Communications	3	ECCE4122
ECCE4142	Digital Signal Processing	3	ECCE4227+ ECCE3142
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 or COMP3501 [Incompatible with ECCE5231 and ECCE4254]
ECCE4252	Data Structure & Algorithms	3	COMP2002
ECCE4253	Object Oriented Programming	3	COMP2002
ECCE4254	Operating Systems	3	COMP2002
ECCE4257	Applied Algorithms for ECE	3	
ECCE5265	Database Engineering and Applications	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	ECCE4122
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
ECCE5160	Antenna Modeling and Measurement Techniques	3	ECCE4022
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	ECCE4227 Incompatible with ECCE4242 and ECCE4254
ECCE5233	Computer Architecture and Organization II	3	ECCE5232
ECCE5242	Advanced Computer Networks	3	ECCE4242 or ECCE5231
ECCE5243	Network Software Design & Programming	3	ECCE4242
ECCE5252	Software Engineering	3	ECCE4252 or ECCE4255
ECCE5282	Computer Network Security	3	ECCE4242 or ECCE5231
ECCE5283	Cryptography, Security & e-Commerce	3	ECCE4242
ECCE5291	Functional Verification of Hardware Designs	3	ECCE4227
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
ECCE5315	Smart Grid	3	ECCE3352 + ECCE4122
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	ECCE4022
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
ECCE5453	Mobile Robot Control	3	ECCE4416
ECCE5443	Optimization Techniques in Engineering	3	MATH3171
ECCE5462	Electric Drives	3	ECCE4466 or ECCE4467
ECCE5464	Advanced Power Electronics	3	ECCE4466 or ECCE4467
ECCE5006	Biomedical Signal Processing	3	ECCE3142
ECCE5007	Biomedical Instrumentation Engineering	3	ECCE3142
ECCE5002	Selected Topics in ECE	3	ECCE4009
ECCE5001	Entrepreneurial Opportunities in Electrical and Computer	3	