ACADEMIC REGULATIONS, COURSE STRUCTURE

and

DETAILED SYLLABUS

under

Choice Based Credit System (CBCS)

(Effective from the Academic Year 2015- 16 onwards)

(RA15)

B.Tech.
ELECTRONICS AND COMMUNICATION ENGINEERING

SR ENGINEERING COLLEGE
Innovation | Creativity | Entrepreneurship

(An Autonomous Institution)
Approved by AICTE I Affiliated to JNTUH I Accredited by NAAC 'A' Grade
Ananthasagar (V), Hasanpathy (M), Warangal – 506 371, Telangana.
www.srecwarangal.ac.in

(RA15) COURSE STRUCTURE:: B. TECH. ELECTRONICS AND COMMUNICATION ENGINEERING
(Applicable from the batch admitted during 2015-16 academic year and onwards)

L: Theory, T: Tutorial,   P/D: Practical / Drawing,   C: Credits,
CIE: Continuous Internal Evaluation, SEE: Semester End Examination

I Year I Semester

S. No.	Course Code	Course	L	T	P/D	C
1	HS101	English –I	2	-	-	2
2	BS101	Mathematics - I	4	-	-	4
3	BS103	Engineering Physics - I	3	-	-	3
4	BS105	Engineering Chemistry	3	-	-	3
5	ES107	Computer Programming	4	-	-	4
6	ES101	Introduction to Engineering	2	-	-	2
7	HS103	English Language Communication Skills Lab	-	-	3	2
8	BS108	Engineering Chemistry Lab	-	-	3	2
9	ES108	Computer Programming Lab	-	-	3	2
10	AC	*Audit Course	-	-	2	-
Total						**24**

I Year II Semester

S. No.	Course Code	Course	L	T	P/D	C
1	HS102	English –II	2	-	-	2
2	BS102	Computational Mathematics	3	1	-	3
3	BS104	Engineering Physics – II	3	-	-	3
4	BS106	Environmental Studies	3	-	-	3
5	ES110	Data Structures	3	-	-	3
6	EC101	Electronic Devices and Circuits	4	-	-	4
7	BS107	Engineering Physics Lab	-	-	3	2
8	ES106	Product Design Studio	-	-	3	2
9	ES111	Data Structures Lab	-	-	3	2
10	AC	*Audit Course	-	-	2	-
Total						**24**

* Audit Course: (AC101) Sports, (AC102) NSS, (AC103) Yoga, (AC104) Dance,
(AC105) Music, (AC106) Arts, (AC107) Sketching

Note: Student has to choose any two different Audit Courses from the specified list and he / she has to complete one in I Semester and the other in II Semester.

II Year I Semester

S. No.	Course Code	Course	Hours / Week			
			L	T	P/D	C
1	BS109	Mathematics – II	3	-	-	3
2	EE135	Network Analysis	4	1	-	4
3	EC103	Electronic Circuit Analysis	4	-	-	4
4	EC104	Probability Theory and Stochastic Processes	3	-	-	3
5	EC105	Signals and Systems	4	-	-	4
6	BS111	Computational Mathematics Lab	-	-	3	2
7	ES120	Basic Simulation Lab	-	-	3	2
8	EC109	Electronic Devices and Circuit Analysis Lab	-	-	3	2
9	MC102	Gender Sensitization	-	-	2	-
Total						**24**

II Year II Semester

S. No.	Course Code	Course	Hours / Week			
			L	T	P/D	C
1	HS104	Economics and Finance for Engineers	3	-	-	3
2	ES112	Foundations to Product Design	3	-	-	3
3	ES113	Mechatronics	4	-	-	4
4	EC106	Digital Electronics	3	-	-	3
5	EC107	Linear IC Applications	3	-	-	3
6	EC108	Electromagnetic Theory and Transmission Lines	4	1	-	4
7	ES114	Mechatronics Lab	-	-	3	2
8	EC110	IC Applications Lab	-	-	3	2
9	MC101	Business Communication and Public Speaking	1	-	1	-
Total						**24**

III Year I Semester

S. No.	Course Code	Course	Hours / Week			
			L	T	P/D	C
1	OE	*Open Elective – 1*	3	-	-	3
2	HS106	Technical Writing	2	-	-	2
3	EE109	Control Systems	3	-	-	3
4	EC111	Analog Communication	3	-	-	3
5	EC112	Microprocessors and Microcontrollers	3	-	-	3
6	EC113	Antenna and Wave Propagation	4	1	-	4
7	EC120	Analog Communication Lab	-	-	3	2
8	EC121	Microprocessors and Microcontrollers Lab	-	-	3	2
9	EC123	Media Project	-	-	-	2
Total						**24**

III Year II Semester

S. No.	Course Code	Course	Hours / Week			
			L	T	P/D	C
1	OE	*Open Elective -2*	3	-	-	3
2	HS107	Project Management	3	-	-	3
3	CS104	Objected Oriented Programming Concepts through Java	3	-	-	3
4	EC114	Digital Communication	4	1	-	4
5	EC115	Digital Signal Processing	4	-	-	4
6	EC116 EC117 EC118 EC119	*Professional Elective –1* 1. Electronic Measurements and Instrumentation 2. Computer Organization 3. Embedded Systems 4. Digital System Design	3	-	-	3
7	CS109	Objected Oriented Programming Concepts through Java Lab	-	-	3	2
8	EC122	Digital Signal Processing Lab	-	-	3	2
Total						**24**

IV Year I Semester

S. No.	Course Code	Course	Hours / Week			
			L	T	P/D	C
1	HS105	Engineering Ethics	2	-	-	2
2	EC124	Microwave Engineering	4	-	-	4
3	EC125	VLSI Design	3	-	-	3
4	EC126 EC127 EC128 EC129	*Professional Elective – 2* 1. Biomedical Instrumentation 2. Computer Networks 3. Digital Signal Processors and Architectures 4. Coding Theory	3	-	-	3
5	EC130 EC131 EC132 EC133	*Professional Elective – 3* 1. Virtual Instrumentation 2. ARM Architecture 3. PLC and Robotics 4. Television Engineering	3	-	-	3
6	EC134 EC135 EC136 EC137	*Professional Elective – 4* 1. Radar Systems 2. Optical Communication 3. Digital Image Processing 4. Neural Networks	3	-	-	3
7	EC146	Microwave and Digital Communication Lab	-	-	3	2
8	EC147	E-CAD and VLSI Lab	-	-	3	2
9	EC148	Certification Course / Mini Project / App Development	-	-	-	2
Total						**24**

IV Year II Semester

S. No.	Course Code	Course	Hours / Week			
			L	T	P/D	C
1	OE	*Open Elective -3*	3	-	-	3
2	EC138 EC139 EC140 EC141	*Professional Elective-5* 1. Satellite Communication 2. Wireless Communication and Networks 3. Network Security and Cryptography 4. Low Power VLSI	3	-	-	3
3	EC142 EC143 EC144 EC145	*Professional Elective-6* 1. Cellular and Mobile Communications 2. Spread Spectrum Communication 3. Internet of Things 4. Digital Design Through Verilog	3	-	-	3
4	EC154	Technical Seminar	-	-	2	1
5	EC155	Major Project / Practice School	-	-	-	14
Total						**24**

Note: Based on the industry / societal demand, additional relevant course(s) may be added under Professional Elective(s) and / or Open Elective(s).

LIST OF OPEN ELECTIVES - ECE

S. No.	Course Code	Course	Offered by the department
1	OE101	Philosophy	H&Sc
2	OE102	Psychology*	H&Sc
3	OE103	Sociology	H&Sc
4	OE104	Design Thinking and Innovation*	Business Management
5	OE105	Technology Entrepreneurship*	Business Management
6	OE106	Marketing for Engineers	Business Management
7	OE107	Business Analytics	Business Management
8	OE108	Engineering Project in Community Services (EPICS)*	CE, ME, EEE, ECE, CSE
9	OE109	Smart Cities	CE, ME, EEE, ECE, CSE
10	OE110	Cognitive Engineering*	CE, ME, EEE, ECE, CSE
11	OE111	Intellectual Property Rights	CE, ME, EEE, ECE, CSE
12	OE112	Disaster Management	CE
13	OE113	Pollution and Control Engineering	CE
14	OE114	Scripting Languages	CSE
15	OE115	Cyber Laws	CSE
16	OE116	Fundamentals of Data Base Management Systems	CSE
17	OE117	Introduction to Operating Systems	CSE
18	OE118	Hybrid Electric Vehicles	EEE
19	OE120	Fundamentals of Electrical Machines	EEE
20	ME111	Operations Research	ME / MATHS
21	ME138	Renewable Energy Sources	ME / EEE

Activity based course (CIE & SEE are assessed with 50 marks each)