



**SRI KRISHNA COLLEGE OF ENGINEERING & TECHNOLOGY**

**DEPARTMENT OF  
ELECTRONICS & COMMUNICATION ENGINEERING**

**CURRICULUM  
DESIGNED FOR  
REGULATION 2016**

**Applicable for students admitted from  
2016-2017**

## VISION

To be a center of excellence for technological education, training & Research and to produce world class Engineers who can be placed in top core companies to serve the nation and the society.



## MISSION

- To provide intensive training in the fundamentals as well as the current trends in the field of Electronics and Communication Engineering.
- To continuously update the various facilities in the department and facilitate R&D and Consulting activities.
- To provide placement assistance to the students.
- To disseminate the knowledge by organizing seminars, Faculty Development Programs and Workshops.

## PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)

- PEO I. Excel in professional career to provide engineering solution by demonstrating technical competence in electronics and communication engineering.
- PEO II. Identify, analyze and formulate problems to offer appropriate design solutions that are technically superior, economically feasible, environmentally compatible and socially acceptable.
- PEO III. Achieve progress in professional and research career through communication skills, team work and knowledge up-gradation through continuous education.

## **PROGRAMME OBJECTIVES(POs)**

- **PO a: Apply the knowledge of the physical sciences, mathematics, computing, Electronics and Communication Engineering fundamentals for modeling and solving complex engineering problems.**
- **PO b: Design and Conduct scientific and engineering experiments, as well as to analyze, evaluate and Interpret generated data pertaining to engineering activities.**
- **PO c: Design and evaluate complex systems for specific purpose in Electronics and Communication Engineering, with due considerations for economic, environmental, social, political, ethical, health and safety considerations**
- **PO d: Identify complex Electronics and Communication Engineering problems, formulate, analyze, design and provide solution for them.**
- **PO e: Apply appropriate techniques, skills, and modern tools for the design and analysis of engineering systems.**
- **PO f: Attain broad education to provide engineering solution by taking environment and sustainability into consideration**
- **PO g: Understand the contemporary technical, Professional issues and provide engineering solution for societal problems**
- **PO h: Develop consciousness of professional, ethical, legal, security, social issues and responsibilities**
- **PO i: Function effectively as individuals and in teams which may involve people from diverse background to accomplish a common goal**
- **PO j: Communicate effectively both in written and oral form to address activities with engineering community and society**
- **PO k:Engage in lifelong learning through higher studies/additional qualifications to adapt technical changes**
- **PO l:Apply engineering and management fundamentals to manage the projects in time with due consideration for finance**

**SRI KRISHNA COLLEGE OF ENGINEERING AND TECHNOLOGY**  
**DEPARTMENT OF ECE**  
**CURRICULUM & SYLLABI (REVISED)-FOR REGULATION 2016**

**CURRICULUM AND SYLLABI-2016 (APPLICABLE FOR STUDENTS ADMITTED IN 2016-2017)**

**CURRICULUM AND SYLLABI**

<b>SEMESTER I</b>							
<b>S No.</b>	<b>Course Code</b>	<b>Course</b>	<b>L/T/P</b>	<b>Contact hrs/week</b>	<b>Credits</b>	<b>Ext/Int</b>	<b>Category</b>
1	16EN001	Communication skills	2/0/2	4	3	40/60	HS
2	16MA101	Linear Algebra, Calculus And Its Applications	3/2/0	5	4	60/40	BS
3	16PH103	Engineering Physics	3/0/2	5	4	40/60	BS
4	16CH003	Environmental Science	3/0/0	3	3	60/40	HS
5	16CS201/ 16IT201	Problem Solving Techniques and C Programming	3/0/2	5	4	40/60	ES
6	16EC301	Fundamentals of Electrical & Electronics Engineering	3/0/0	3	3	60/40	PC
7	16ME204	Engineering Practices Laboratory	0/0/3	3	2	40/60	ES
<b>Total</b>				<b>28</b>	<b>23</b>	<b>700</b>	

<b>SEMESTER II</b>							
<b>S No.</b>	<b>Course Code</b>	<b>Course</b>	<b>L/T/P</b>	<b>Contact hrs/week</b>	<b>Credits</b>	<b>Ext/Int</b>	<b>Category</b>
1.	16MA102	Integral Calculus and Laplace Transform	3/2/0	5	4	60/40	BS
2.	16CH101	Engineering Chemistry	3/0/2	5	4	40/60	BS
3.	16CS212	LINUX and Programming in C++	3/0/2	5	4	40/60	ES
4.	16EC201	Electric Circuits	4/0/0	4	4	60/40	ES
5.	16EC302	Electronic Devices	3/0/0	3	3	60/40	PC
6.	16EC303	Electron Devices and Electric Circuits Laboratory	0/0/3	3	2	40/60	PC
7.	16ME205	Engineering Graphics laboratory	0/0/3	3	2	40/60	ES
<b>Total</b>				<b>28</b>	<b>23</b>	<b>700</b>	

<b>SEMESTER III</b>							
<b>S No.</b>	<b>Course Code</b>	<b>Course</b>	<b>L/T/P</b>	<b>Contact hrs/week</b>	<b>Credits</b>	<b>Ext/Int</b>	<b>Category</b>
1.	16MA104	Discrete Transforms and Fourier Analysis	3/2/0	5	4	60/40	BS
2.	16CS213	Data Structures & Algorithms	3/0/2	5	4	40/60	ES
3.	16EC304	Electronic Circuits	4/0/0	4	4	60/40	PC
4.	16EC305	Digital Electronics	4/0/0	4	4	60/40	PC
5.	16EC306	Electromagnetics	4/0/0	4	4	60/40	PC
6.	16EC307	Digital Electronics Laboratory	0/0/3	3	2	40/60	PC
7.	16EC308	Electronic Circuits Laboratory	0/0/3	3	2	40/60	PC
8.	16EC701	Mandatory Course-I	-	3	1	100/0	MC
<b>Total</b>				<b>31</b>	<b>25</b>	<b>800</b>	

<b>SEMESTER IV</b>							
<b>S No.</b>	<b>Course Code</b>	<b>Course</b>	<b>L/T/P</b>	<b>Contact hrs/week</b>	<b>Credits</b>	<b>Ext/Int</b>	<b>Category</b>
1.	16MA108	Probability and Random Process	3/2/0	5	4	60/40	BS
2.	16EC309	Analog Integrated Circuits	3/0/0	3	3	60/40	PC
3.	16EC310	Analog and Pulse Communication	3/0/0	3	3	60/40	PC
4.	16EC311	Signals and Systems	3/0/2	5	4	40/60	PC
5.	16EC312	Transmission Lines and Waveguides	3/0/0	3	3	60/40	PC
6.	16EC313	Analog Integrated Circuits Laboratory	0/0/3	3	2	40/60	PC
7.	16EC314	Analog and Pulse Communication Laboratory	0/0/3	3	2	40/60	PC
8.	16EC601	Mini Project-I	-	-	2	40/60	PW
9.	16EC702	Mandatory Course-II	-	3	1	100/0	MC
				<b>28</b>	<b>24</b>	<b>900</b>	

<b>SEMESTER V</b>							
<b>S No.</b>	<b>Course Code</b>	<b>Course</b>	<b>L/T/P</b>	<b>Contact hrs/week</b>	<b>Credits</b>	<b>Ext/Int</b>	<b>Category</b>
1.	16EC315	Microcontrollers & Interfacing	3/0/0	3	3	60/40	PC
2.	16EC316	Digital Signal Processing	3/0/2	5	4	40/60	PC
3.	16EC317	Digital Communication	3/0/0	3	3	60/40	PC
4.	16EC318	Computer Networks & Interfacing	3/0/0	3	3	60/40	PC
5.	16EC208	Electrical Machines & Control Systems	3/0/0	3	3	60/40	ES
6.	16EC4XX	Common Elective	3/0/0	3	3	60/40	PE
7.	16EC319	Microcontrollers Laboratory	0/0/3	3	2	40/60	PC
8.	16EC320	Digital Communication and Networks Laboratory	0/0/3	3	2	40/60	PC
9.	16EC703	Mandatory Course-III	-	3	1	100/0	MC
<b>Total</b>				<b>29</b>	<b>24</b>	<b>900</b>	

<b>SEMESTER VI</b>							
<b>S No.</b>	<b>Course Code</b>	<b>Course</b>	<b>L/T/P</b>	<b>Contact hrs/week</b>	<b>Credits</b>	<b>Ext/Int</b>	<b>Category</b>
1.	16EC321	Embedded Systems	3/0/0	3	3	60/40	PC
2.	16EC322	VLSI Circuits	3/0/0	3	3	60/40	PC
3.	16EC323	Antennas & Wave Propagation	3/0/0	3	3	60/40	PC
4.	16EC5XX	Open Elective	3/0/0	3	3	60/40	OE
5.	16EC4XX	Program Elective-I	3/0/0	3	3	60/40	PE
6.	16EC4XX	Program Elective-II	3/0/0	3	3	60/40	PE
7.	16EC324	VLSI Circuits Laboratory	0/0/3	3	2	40/60	PC
8.	16EC325	Embedded Systems Laboratory	0/0/3	3	2	40/60	PC
9.	16EN003	Business Communication Skills Laboratory	0/0/3	3	2	40/60	HS
10.	16EC602	Mini Project-II	-	-	2	40/60	PW
11.	16EC704	Mandatory Course-IV	-	3	1	100/0	MC
<b>Total</b>				<b>30</b>	<b>27</b>	<b>1100</b>	

<b>SEMESTER VII</b>							
<b>S No.</b>	<b>Course Code</b>	<b>Course</b>	<b>L/T/P</b>	<b>Contact hrs/week</b>	<b>Credits</b>	<b>Ext/Int</b>	<b>Category</b>
1.	16MG003	Principles of Management	2/0/0	2	2	60/40	HS
2.	16EC326	Microwave and Optical Communication	4/0/0	4	4	60/40	PC
3.	16EC4XX	Program Elective-III	3/0/0	3	3	60/40	PE
4.	16EC4XX	Program Elective-IV	3/0/0	3	3	60/40	PE
5.	16EC4XX	Program Elective-V	3/0/0	3	3	60/40	PE
6.	16EC327	Wireless Communication & Networks	3/0/0	3	3	60/40	PC
7.	16EC328	Microwave and Optical Communication Laboratory	0/0/3	3	2	40/60	PC
<b>Total</b>				<b>21</b>	<b>20</b>	<b>700</b>	

SEMESTER VIII							
S No.	Course Code	Course	L/T/P	Contact hrs/week	Credits	Ext/Int	Category
1.	16EC603	Project Work	0/0/24	24	12	40/60	PW
<b>Total</b>				<b>24</b>	<b>12</b>	<b>100</b>	

#### HUMANITIES SCIENCES (10 credits)

S. No	Course Code	Course Title	L/T/P	Contact Hrs/Wk	Credits	Category
1	16EN001	Communication skills	2/0/2	4	3	HS
2	16CH003	Environmental Science	3/0/0	3	3	HS
3	16EN003	Business Communication skills Laboratory	0/0/3	3	2	HS
4	16MG003	Principles of Management	2/0/0	2	2	HS

#### BASIC SCIENCES (24 Credits)

S. No	Course Code	Course Title	L/T/P	Contact Hrs/Wk	Credits	Category
1.	16MA101	Linear Algebra, Calculus And Its Applications	3/2/0	5	4	BS
2.	16PH103	Engineering Physics	3/0/2	5	4	BS
3.	16MA102	Integral Calculus and Laplace Transform	3/2/0	5	4	BS
4.	16CH105	Engineering Chemistry	3/0/2	5	4	BS
5.	16MA104	Discrete Transform and Fourier Analysis	3/2/0	5	4	BS
6.	16MA143	Probability and Random Process	3/2/0	5	4	BS

#### ENGINEERING SCIENCES (23 Credits)

S. No	Course Code	Course Title	L/T/P	Contact Hrs/Wk	Credits	Category
1.	16CS201/ 16IT201	Problem Solving Techniques and C Programming	3/0/2	5	4	ES
2.	16ME204	Engineering Practices Laboratory	0/0/3	3	2	ES
3.	16CS212	LINUX and Programming in C++	3/0/2	5	4	ES
4.	16ME205	Engineering Graphics laboratory	0/0/3	3	2	ES
5.	16CS213	Data Structures & Algorithms	3/0/2	5	4	ES
6.	16EC201	Electric Circuits	4/0/0	4	4	ES
7	16EC208	Electrical Machines & Control Systems	3/0/0	3	3	ES

#### PROGRAM CORE (80 credits)

S. No	Course Code	Course Title	L/T/P	Contact Hrs/Wk	Credits	Category
1.	16EC301	Fundamentals of Electrical & Electronics Engineering	3/0/0	3	3	PC
2.	16EC302	Electronic Devices	3/0/0	3	3	PC
3.	16EC303	Electron Devices and Electric Circuits Laboratory	0/0/3	3	2	PC
4.	16EC304	Electronic Circuits	4/0/0	4	4	PC
5.	16EC305	Digital Electronics	4/0/0	4	4	PC
6.	16EC306	Electromagnetics	4/0/0	4	4	PC
7.	16EC307	Digital Electronics Laboratory	0/0/3	3	2	PC
8.	16EC308	Electronic Circuits Laboratory	0/0/3	3	2	PC
9.	16EC309	Analog Integrated Circuits	3/0/0	3	3	PC
10.	16EC310	Analog and Pulse Communication	3/0/0	3	3	PC
11.	16EC311	Signals and Systems	3/0/2	5	4	PC
12.	16EC312	Transmission Lines and Waveguides	3/0/0	3	3	PC
13.	16EC313	Analog Integrated Circuits Laboratory	0/0/3	3	2	PC
14.	16EC314	Analog and Pulse Communication Laboratory	0/0/3	3	2	PC
15.	16EC315	Microcontrollers & Interfacing	3/0/0	3	3	PC

16.	16EC316	Digital Signal Processing	3/0/2	5	4	PC
17.	16EC317	Digital Communication	3/0/0	3	3	PC
18.	16EC318	Computer Networks & Interfacing	3/0/0	3	3	PC
19.	16EC319	Microcontrollers Laboratory	0/0/3	3	2	PC
20.	16EC320	Digital Communication and Networks Laboratory	0/0/3	3	2	PC
21.	16EC321	Embedded Systems	3/0/0	3	3	PC
22.	16EC322	VLSI Circuits	3/0/0	3	3	PC
23.	16EC323	Antennas & Wave Propagation	3/0/0	3	3	PC
24.	16EC324	VLSI Circuits Laboratory	3/0/0	3	2	PC
25.	16EC325	Embedded Systems Laboratory	0/0/3	3	2	PC
26.	16EC326	Microwave and Optical Communication	4/0/0	4	4	PC
27.	16EC327	Wireless Communication & Networks	3/0/0	3	3	PC
28.	16EC328	Microwave and Optical Communication Laboratory	0/0/3	3	2	PC

**PROGRAM ELECTIVE COURSES (18 Credits)**

S. No	Course Code	Course Title	L/T/P	Contact Hrs/Wk	Credits	Category
<b>PROGRAM ELECTIVES</b>						
<b>COMMON ELECTIVES</b>						
1	16EC401	Digital Image Processing	3/0/0	3	3	PE
2	16EC402	Internet of Everything	3/0/0	3	3	PE
3	16EC403	Television and Video Engineering	3/0/0	3	3	PE
4	16EC404	Nano Electronics	3/0/0	3	3	PE
5	16EC405	Robotics	3/0/0	3	3	PE
6	16EC406	Information Theory and Coding Techniques	3/0/0	3	3	PE
7	16EC407	Soft Computing	3/0/0	3	3	PE
<b>Elective Stream I-VLSI Design</b>						
1.	16EC408	Hardware Description Languages	3/0/0	3	3	PE
2.	16EC409	ASIC and FPGA Design	3/0/0	3	3	PE
3.	16EC410	Testing and Verification of VLSI circuits	3/0/0	3	3	PE
4.	16EC411	Digital Low Power VLSI Design	3/0/0	3	3	PE
5.	16EC412	Analog CMOS Circuit Design	3/0/0	3	3	PE
6.	16EC413	CAD for VLSI Circuits	3/0/0	3	3	PE
7.	16EC414	SOC Design	3/0/0	3	3	PE
<b>Elective Stream II - Embedded Systems</b>						
1.	16EC415	Computer Architecture	3/0/0	3	3	PE
2.	16EC416	ARM Processor Architecture & Programming	3/0/0	3	3	PE
3.	16EC417	Sensors for Industrial Applications	3/0/0	3	3	PE
4.	16EC418	Automotive Electronics	3/0/0	3	3	PE
5.	16EC419	Real-Time Operating Systems	3/0/0	3	3	PE
6.	16EC420	Advanced Microprocessor and Microcontroller	3/0/0	3	3	PE
7.	16EC421	Embedded Linux	3/0/0	3	3	PE
<b>Elective Stream III - Communication &amp; Networking</b>						
1.	16EC422	Next Generation Networks	3/0/0	3	3	PE
2.	16EC423	Wireless Sensor Networks	3/0/0	3	3	PE
3.	16EC424	Body Area Networks	3/0/0	3	3	PE
4.	16EC425	Smart Antenna	3/0/0	3	3	PE
5.	16EC426	RF System Design and MEMS	3/0/0	3	3	PE
6.	16EC427	High Speed Networks	3/0/0	3	3	PE
7.	16EC428	Cognitive Radio Communication	3/0/0	3	3	PE
<b>Open Elective Courses offered by ECE</b>						
1.	16EC501	Introduction to VLSI & Embedded Systems	3/0/0	3	3	OE
2.	16EC502	Microcontrollers for Industrial applications	3/0/0	3	3	OE
3.	16EC503	Computer Communication and Networks	3/0/0	3	3	OE

**MANDATORY COURSES (4 Credits)**

S.No	Course Code	Course Title	Category
1.	16EC701	C Programming	MC
2.	16EC702	Embedded C	MC
3.	16EC703	Java	MC
4.	16EC704	PHP	MC
5.	16EC705	Foreign Language/Spoken Hindi	MC
6.	16EC706	Life Skills/Professional Ethics/Industrial Psychology	MC
7.	16EC707	Environmental Awareness	MC
8.	16EC708	Domain Specific certification/MOOC certification	MC

**ONE CREDIT COURSES**

S. No	Course Code	Course Title	Credits
1.	16EC901	Simulation Program with Integrated Circuit Emphasis	1
2.	16EC902	PCB design	1
3.	16EC903	PLC and SCADA	1
4.	16EC904	CCNA/ CCSP Networking	1
5.	16EC905	4G Core Network Operations, Administration & Maintenance	1
6.	16EC906	IPv6 Fundamental & Deployment	1
7.	16EC907	Advance Mobile communication Technologies	1
8.	16EC908	Timing issues in Digital Circuits	1
9.	16EC909	Embedded RTOS design	1
10.	16EC910	Embedded LINUX/ C	1
11.	16EC911	System Design	1
12.	16EC912	Measurement System Analysis	1

**SCHEME OF CREDIT DISTRIBUTION - SUMMARY**

S. No	Stream	Credits/Semester								Credits	%	AICTE %
		I	II	III	IV	V	VI	VII	VIII			
1.	Humanities (HS)	6					2	2		10	<b>5.55</b>	5-10
2.	Basic Sciences(BS)	8	8	4	4					24	<b>13.3</b>	15-20
3.	Engineering Sciences(ES)	6	10	4		3				23	<b>12.77</b>	15-20
4.	Program Core(PC)	3	5	16	17	17	16	6		80	<b>44.44</b>	30-40
5.	Program Electives(PE)					3	6	9		18	<b>10</b>	10-15
6.	Open Electives(OE)							3		3	<b>1.66</b>	5-10
7.	Project Work(PW)				2		2		12	16	<b>8.8</b>	10-15
8.	Mandatory Course			1	1	1	1			4	<b>2.2</b>	-
9.	Employability Skills									2	<b>1.1</b>	-
<b>Total</b>		<b>22</b>	<b>23</b>	<b>25</b>	<b>24</b>	<b>24</b>	<b>27</b>	<b>21</b>	<b>12</b>	<b>180</b>	<b>100</b>	



