

**JNTUH COLLEGE OF ENGINEERING HYDERABAD
(AUTONOMOUS)**

**5 Year Integrated Dual Degree Program (IDP)
(B.Tech. + M.Tech.)**

ELECTRONICS AND COMMUNICATION ENGINEERING

COURSE STRUCTURE

(Applicable from the batch admitted from the Academic Year 2017-18 and onwards)

I YEAR

I SEMESTER

S.No.	Group	Subject	L	T	P	Credits
1	BS	Mathematics - I	4	1	0	4
2	HS	English	3	0	0	3
3	ES	Computer Programming and Data Structures	4	1	0	4
4	ES	Engineering Graphics	3	0	3	4
5	ES	Environmental Science	3	0	0	3
6	ES	Computer Programming and Data Structures Lab	0	0	3	2
7	HS	English Language Communication Skills Lab	0	0	3	2
8	ES	Engineering Workshop	0	0	3	2
		NSS/NCC/NSO				
		Total Credits	17	2	12	24

I YEAR

II SEMESTER

S.No.	Group	Subject	L	T	P	Credits
1	BS	Mathematics-II	3	1	0	3
2	ES	Basic Electrical and Electronics Engineering	4	0	0	4
3	BS	Applied Physics	3	1	0	3
4	BS	Engineering Chemistry	3	1	0	3
5	ES	Engineering Mechanics	3	1	0	3
6	BS	Computational Mathematics	2	0	0	2
7	ES	Basic Electrical and Electronics Engineering Lab	0	0	3	2
8	HS	Applied Physics Lab	0	0	3	2
9	BS	Computational Mathematics Lab	0	0	3	2
		NSS/NCC/NSO				
		Total Credits	18	4	9	24

II YEAR

I SEMESTER

S.No.	Group	Subject	L	T	P	Credits
1	BS	Mathematics - III	4	0	0	4
2	PC	Signals and Systems	4	1	0	4
3	PC	Electrical Technology	4	0	0	4
4	PC	Analog Electronics	4	0	0	4
5	ES	Network Analysis	4	1	0	4
6	HS	Gender Sensitization Lab	-	-	-	-
7	PC	Analog Electronics Lab-I	0	0	3	1
8	PC	Electrical Technology Lab	0	0	3	2
9	ES	Basic Simulation Lab	0	0	3	1
		Total Credits	20	2	9	24

II YEAR**II SEMESTER**

S.No.	Group	Subject	L	T	P	Credits
1	PC	Switching Theory and Logic Design	3	1	0	3
2	PC	Pulse and Digital Circuits	3	1	0	3
3	PC	Electromagnetic Theory and Transmission Lines	4	0	0	4
4	PC	Analog Communications	3	1	0	3
5	PC	Control Systems	3	1	0	3
6	PC	Analog Communications Lab	0	0	3	2
7	PC	Pulse and Digital Circuits Lab	0	0	3	2
8	PC	Analog Electronics Lab-II	0	0	3	2
9	HS	Human Values and Professional Ethics	2	0	0	2
Total Credits			18	4	9	24

III YEAR**I SEMESTER**

S.No.	Group	Subject	L	T	P	Credits
1	PC	Linear and Digital IC Applications	4	0	0	4
2	PC	Antennas and Wave Propagation	4	0	0	4
3	PC	Digital Communications	3	1	0	3
4	OE - I	Open Elective –I	3	0	0	3
5	HS	Managerial Economics and Financial Analysis	4	0	0	4
6	PC	Linear IC Applications Lab	0	0	3	2
7	PC	Digital Communications Lab	0	0	3	2
8	PC	Design Lab	0	0	3	2
Total Credits			18	1	9	24

III YEAR**II SEMESTER**

S.No.	Group	Subject	L	T	P	Credits
1	OE-II	Open Elective-II	3	0	0	3
2	PE-I	Professional Elective-I	4	0	0	4
3	PE-II	Professional Elective-II	4	0	0	4
4	PC	Microprocessors and Microcontrollers	4	0	0	4
5	PC	Digital Signal Processing	4	0	0	4
6	HS	Advanced English Language and Communication Skills Lab	0	0	3	1
7	PC	Digital Signal Processing Lab	0	0	3	2
8	PC	Microprocessors and Microcontrollers Lab	0	0	3	2
Total Credits			19	0	9	24

During Summer Vacation between III and IV Years: Industry Oriented Mini Project

IV YEAR**I SEMESTER**

S.No.	Group	Subject	L	T	P	Credits
1	PC	Microwave Engineering	4	0	0	4
2	PE-III (UG)	Professional Elective - III	4	0	0	4
3	PGC -I	Advanced Digital Signal Processing	4	0	0	4
4	PGE - I	PG Elective - I	4	0	0	4
5	PGE - II	PG Elective - II	4	0	0	4
6	PGE - III	PG Elective - III	4	0	0	4
7	PC (UG) Lab	Microwave Engineering Lab	0	0	3	2
8	PGC Lab	Advanced Digital Signal Processing Lab	0	0	4	2
9	CoC(UG)	Industrial Training / Mini Project Evaluation				2
Total Credits			24	0	7	30

IV YEAR**II SEMESTER**

S.No.	Group	Subject	L	T	P	Credits
1	HS (UG)	Management Science	4	0	0	4
2	PGC - II	Advanced Computer Networks	4	0	0	4
3	PGE – IV	PG Elective - IV	4	0	0	4
4	PGC Lab	Advanced Computer Networks Lab	0	0	4	2
5	DC(UG)	Major Project				14
Total Credits			12	0	4	28

V YEAR**I SEMESTER**

S.No.	Group	Subject	L	T	P	Credits
1	PGC - III	Wireless Communications and Networks	4	0	0	4
2	PGE - V	PG Elective - V	4	0	0	4
3	PGE - VI	PG Elective - VI	4	0	0	4
4	PGE - VII	PG Elective - VII	4	0	0	4
5	PG	PG Project Stage - I	4	0	0	12
6	PG	Seminar	0	0	3	2
Total Credits			20	0	3	30

V YEAR**II SEMESTER**

S.No.	Group	Subject	L	T	P	Credits
1	PG	PG Project Stage - II	-	-	-	18
2	PG	Comprehensive Viva	-	-	-	4
Total Credits						22

OPEN ELECTIVE- I		
S.No.	Subject	Offering Department
1	Disaster Management	Civil Engineering
2	Non – Conventional Power Generation	Electrical and Electronics Engineering
3	Electrical Engineering Materials	
4	Nano-Technology	
5	Operations Research	Mechanical Engineering
6	Basics of Thermodynamics	
7	Fabrication Processes	
8	Electronic Measuring Instruments	Electronics and Communication Engineering
9	OOPS through JAVA	Computer Science and Engineering
10	Computer Graphics	
11	Engineering Materials	Metallurgical Engineering
12	Metallurgy for Non Metallurgists	
13	Industrial Pollution Control Engineering	Chemical Engineering

OPEN ELECTIVE- II		
S.No.	Subject	Offering Department
1	Estimation, Quantity Survey and Valuation	Civil Engineering
2	Design Estimation and Costing of Electrical Systems	Electrical and Electronics Engineering
3	Energy Storage Systems	
4	Mechatronics	
5	Jet propulsion and Rocket Engineering	Mechanical Engineering
6	Ergonomics	
7	Mechatronics	
8	Principles of Electronic Communications	Electronics and Communication Engineering
9	Cyber Security	Computer Science and Engineering
10	Database Management Systems	
11	Corrosion Engineering	Metallurgical Engineering
12	Testing of Materials	
13	Solid Waste Management	Chemical Engineering

Professional Elective (PE) Subjects Lists**PE-I**

1. Cellular and Mobile Communications
2. Computer Organization and Operating Systems
3. Digital Image Processing
4. Television Engineering

PE-II

1. Computer Networks
2. Digital System Design
3. Electronic Measurements and Instrumentation
4. Scripting Languages

PE-III

1. Radar Systems
2. Optical Communications
3. Satellite Communications
4. Artificial Neural Networks

PG Elective (PG E) Subjects List**PG E – I**

1. Transform Techniques
2. Bio-Medical Signal Processing.
3. RF Circuit Design

PG E – II

1. VLSI Technology and Design
2. Advanced Data Communications
3. Detection and Estimation Theory

PG E – III

1. Adhoc Wireless and Sensor Networks
2. Random Processes and Queuing Theory
3. TCP / IP and ATM Networks

PG E – IV

1. Adaptive Signal Processing
2. Embedded System Design
3. Network Security and Cryptography

PG E – V

1. Image and Video Processing
2. 4G Technologies
3. Multimedia and Signal Coding

PG E – VI

1. Coding Theory and Techniques
2. Software Defined Radio
3. Spread Spectrum Communications

PG E –VII

1. Digital Signal Processors and Architectures
2. Speech and Audio Signal Processing
3. Radar Signal Processing

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IV YEAR

I SEMESTER

S.No.	Group	Subject	L	T	P	Credits
1	PC	Microwave Engineering	4	0	0	4
2	PE-III (UG)	Professional Elective - III	4	0	0	4
3	HS (UG)	Management Science	4	0	0	4
4	PGC-I	Marketing Management	4	0	0	4
5	PGC-II	Human Resource Management	4	0	0	4
6	PGE-I	PG Elective-I	4	0	0	4
7	PC (UG) Lab	Microwave Engineering Lab	0	0	3	2
8	PGC Lab	Soft Skills Lab	0	0	4	2
9	EAC (UG)	Industrial Training / Mini Project Evaluation (Summer Program)				2
		Total Credits				30

IV YEAR

II SEMESTER

S.No.	Group	Subject	L	T	P	Credits
1	PGC-III	Research Methodology and Statistical Analysis	4	0	0	4
2	PGC-IV	Business Law and Regulation	4	0	0	4
3	PGE-II	PG Elective-II	4	0	0	4
4	PGC Lab	Statistical Analysis Lab using SPSS / Excel	0	0	4	2
5	PC (UG)	Major Project				14
		Total Credits				28

V YEAR

I SEMESTER

S.No.	Group	Subject	L	T	P	Credits
1	PGC-V	Strategic Management	4	0	0	4
2	PGE-III	PG Elective-III	4	0	0	4
3	PGE-IV	PG Elective-IV	4	0	0	4
4	PGE-V	PG Elective-V	4	0	0	4
5	PG	PG Project Stage – I				12
6	PG	Seminar	0	0	3	2
		Total Credits				30

V YEAR

II SEMESTER

S.No.	Group	Subject	L	T	P	Credits
1	PG	PG Project Stage-II				18
2	PG	Comprehensive Viva				4
		Total Credits				22

Core & Electives:

Group	Marketing/HR/Finance/Systems
PGC-I	Marketing Management
PGC-II	Human Resource Management
PGE-I	Sales and Distribution / Training and Development / Financial Management / Management Information System
PGC Lab	Soft Skills Lab
PGC-III core	Research Methodology & Statistical Analysis
PGC-IV core	Business Law & Regulation
PGE-II	Integrated Marketing Communications / Management of Industrial Relations / Security Analysis and Portfolio Management / Enterprise Resource Planning
PGC Lab	Statistical Analysis Lab using SPSS / Excel
PGC –V Core	Strategic Management
PGE-III	Retailing Management / Compensation & Reward Management / Strategic Investment and Financing Decisions/E-Business
PGE-IV	Services Marketing / Management of Change / International Financial Management/Cyber Security
PGE-V	International Marketing / Performance Management / Derivatives / Information System Control and Audit
<p>✎ <i>Students are advised to take prior approval from the Mentor of the Department of H&SS before selecting and finalizing the Electives.</i></p>	