



JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY ANANTAPUR
(Established by Govt. of A.P., Act. No. 30 of 2008)
ANANTHAPURAMU – 515 002 (A.P) INDIA

Course Structure for B.Tech. - R15 Regulations
Common to ECE/ME/EIE/IT

I B.Tech. - I Semester

S.No	Course code	Subject	Theory	Tu / Lab	Credits
1.	15A52101	Functional English	3	1 -	3
2.	15A54101	Mathematics – I	3	1 -	3
3.	15A05101	Computer Programming	3	1 -	3
4.	15A51101	Engineering Chemistry	3	1 -	3
5.	15A01101	Environmental Studies	3	1 -	3
6.	15A52102	English Language Communication Skills Lab	-	- -	2
7.	15A51102	Engineering Chemistry Lab	-	- -	2
8.	15A05102	Computer Programming Lab	-	- -	2
					21

N. Raghupathi

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Dept. of Electronics & Communication Engg
Annamacharya Institute of
Technology & Sciences, TIRUPATI-517 520



JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY ANANTAPUR
(Established by Govt. of A.P., Act. No. 30 of 2008)
ANANTHAPURAMU - 515 002 (A.P) INDIA

Course Structure for B.Tech. - R15 Regulations

ELECTRONICS & COMMUNICATION ENGINEERING

I-II Semester

S.No	Course code	Subject	Th	Tu/Drg/Lab			Credits
1.	15A52201	English for Professional Communication	3	1	-	-	3
2.	15A54201	Mathematics - II	3	1	-	-	3
3.	15A04201	Network Analysis	3	1	-	-	3
4.	15A56101	Engineering Physics	3	1	-	-	3
5.	15A03101	Engineering Drawing	0	-	6	-	3
6.	15A04202	Network Analysis Lab	-	-	-	4	2
7.	15A56102	Engineering Physics Lab	-	-	-	4	2
8.	15A99201	Engineering and IT Workshop	-	-	-	4	2
			12	4	6	12	21

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY ANANTAPUR
Course Structure for ECE
B. Tech Course
(2015-16)

II B. Tech – I sem

S.No.	Course Code	Subject	T	Tu	Lab	C
1	15A54301	Mathematics-III	3	1	-	3
2	15A04301	Electronic Devices and Circuits	3	1	-	3
3	15A04302	Switching Theory and Logic Design	3	1	-	3
4	15A04303	Signals and Systems	3	1	-	3
5	15A04304	Probability Theory and Stochastic Processes	3	1	-	3
6	15A02306	Electrical Technology	3	1	-	3
7	15A04305	Electronic Devices and Circuits Laboratory	-	-	4	2
8	15A02307	Electrical Technology and Basic Simulation Laboratory	-	-	4	2
		Total	18	06	08	22

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY ANANTAPUR
Course Structure for ECE
B. Tech Course
(2015-16)

II B. Tech – II sem

S.No.	Course Code	Subject	T	Tu	Lab	C
1	15A54402	Mathematics-IV	3	1	-	3
2	15A04401	Electronic Circuit Analysis	3	1	-	3
3	15A04402	Analog Communication Systems	3	1	-	3
4	15A04403	Electromagnetic Theory and Transmission Lines	3	1	-	3
5	15A05201	Data Structures	3	1	-	3
6	15A02303	Control Systems Engineering	3	1	-	3
7	15A04404	Electronic Circuit Analysis Laboratory	-	-	4	2
8	15A04405	Analog Communication Systems Laboratory	-	-	4	2
9	15A04406	Comprehensive Online Examination-I	-	-	-	1
Total			18	06	08	23

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY ANANTAPUR
 (Established by Govt. of A.P., Act. No. 30 of 2008)
ANANTHAPURAMU – 515 002 (A.P.) INDIA.

Course Structure for B.Tech-R15 Regulations
Electronics & Communication Engineering

B.TechIII-I Semester(ECE)

S. No.	Course Code	Subject	L	T	P	C
1.	15A05402	Computer Organization	3	1	-	3
2.	15A04501	Antennas and Wave Propagation	3	1	-	3
3.	15A04502	Digital Communication Systems	3	1	-	3
4.	15A04503	Linear Integrated Circuits and Applications	3	1	-	3
5.	15A04504	Digital System Design	3	1	-	3
6.	15A04505 15A04506	MOOCS-I a. Linux Programming & Scripting b. MEMS & Microsystems	3	1	-	3
7.	15A04507	IC Applications Laboratory	-	-	4	2
8.	15A04508	Digital Communication Systems Laboratory	-	-	4	2
9.	15A99501	Audit course – Social Values & Ethics	2	0	2	0
Total:			20	06	10	22

*Either by MOOCS manner or Conventional manner

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B.TechIII-II Semester(ECE)

S. No.	Course Code	Subject	L	T	P	C
1.	15A52301	Managerial Economics and Financial Analysis	3	1	-	3
2.	15A04601	Microprocessors & Microcontrollers	3	1	-	3
3.	15A04602	Electronic Measurements and Instrumentation	3	1	-	3
4.	15A04603	Digital Signal Processing	3	1	-	3
5.	15A04604	VLSI Design	3	1	-	3
6.	15A04605 15A04606 15A02605 15A01608	CBCC-I a. MATLAB Programming b. Industrial Electronics c. Neural Networks & Fuzzy Logic d. Intellectual Property Rights				
7.	15A04607	Microprocessors & Microcontrollers Laboratory	-	-	4	2
8.	15A04608	Digital Signal Processing Laboratory	-	-	4	2
9.	15A52602	Advanced English Language Communication (AELCS) Laboratory (Audit Course)	-	-	2	-
10.	15A04609	Comprehensive Online Examination-II	-	-	-	1
Total:			18	06	12	23

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B.Tech IV-I Semester(ECE)

S. No.	Course Code	Subject	L	T	P	C
1.	15A04701	Optical Fiber Communication	3	1	-	3
2.	15A04702	Embedded Systems	3	1	-	3
3.	15A04703	Microwave Engineering	3	1	-	3
4.	15A04704	Data Communications and Networking	3	1	-	3
5.	15A04705 15A04706 15A04707	CBCC-II a. Radar Systems b. Adaptive Signal Processing c. FPGA Design	3	1	-	3
6.	15A04708 15A04709 15A04710	CBCC-III a. Digital Image Processing b. Cellular & Mobile Communication c. Real Time Systems	3	1	-	3
7.	15A04711	Microwave and Optical Communication Laboratory	-	-	4	2
8.	15A04712	VLSI & Embedded Systems Laboratory	-	-	4	2
Total:			18	06	08	22

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B.Tech IV-II Semester(ECE)

S. No.	Course Code	Subject	L	T	P	C
1.	15A04801 15A04802	MOOCS-II* a. Advanced Digital Signal Processing- Multirate & Wavelet b. Low Power VLSI Circuits & Systems	3	1	-	3
2.	15A04803 15A04804	MOOCS-III * a. Pattern Recognition & Applications b. RF Integrated Circuits	3	1	-	3
3.	15A04805	Comprehensive Viva Voce	-	-	4	2
4.	15A04806	Technical Seminar	-	-	4	2
5.	15A04807	Project Work	-	-	24	12
Total:			6	02	32	22

2 Theory + 1 Comprehensive Viva voce + 1 Technical Seminar + 1 Project work

*Either by MOOCS manner or Self-study or Conventional manner

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1.1.3 - ECE - File No: 3

ANNAMACHARYA INSTITUTE OF TECHNOLOGY AND SCIENCES, TIRUPATI
(AUTONOMOUS)
AK19-REGULATIONS
ELECTRONICS and COMMUNICATION ENGINEERING (ECE)
(Effective for the batches admitted in 2019-20)
INDUCTION PROGRAM (3 weeks duration)

- ❖ Physical activity
- ❖ Creative Arts
- ❖ Universal Human Values
- ❖ Literary
- ❖ Proficiency Modules
- ❖ Lectures by Eminent People
- ❖ Visits to local Areas
- ❖ Familiarization to Dept./Branch & Innovations

I B.Tech – I Semester

I B.Tech – I Semester										
S. No.	Category	Course Code	Course Title	Hours per week			Credits	Scheme of Examination (Max. Marks)		
				L	T	P		CIE	SEE	Total
Theory										
1	BS	19ABS9901	Algebra and Calculus	3	1	0	4	30	70	100
2	BS	19ABS9902	Applied Physics	3	0	0	3	30	70	100
3	ES	19AES0501	Problem Solving and Programming	3	1	0	4	30	70	100
4	HS	19AHS9901	Communicative English - I	2	0	0	2	30	70	100
Practical										
5	WS	19ALC0401	Electronics and Communication Engineering Workshop	0	0	2	1	30	70	100
6	BS	19ABS9907	Applied Physics Laboratory	0	0	3	1.5	30	70	100
7	ES	19AES0503	Problem Solving and Programming Laboratory	0	0	4	2	30	70	100
8	HS	19AHS9902	Communicative English - I Laboratory	0	0	2	1	30	70	100
TOTAL							18.5	240	560	800

I B.Tech – II Semester

I B. Tech – II Semester										
S. No.	Category	Course Code	Course Title	Hours per week			Credits	Scheme of Examination (Max. Marks)		
				L	T	P		CIE	SEE	Total
Theory										
1	ES	19AES0201	Network Theory	3	0	0	3	30	70	100
2	BS	19ABS9906	Differential Equations and Vector Calculus	3	1	0	4	30	70	100
3	BS	19ABS9904	Chemistry	3	0	0	3	30	70	100
4	ES	19AES0502	Data Structures	3	0	0	3	30	70	100
Practical										
5	WS	19ALC0301	Engineering Workshop Practice	0	0	2	1	30	70	100
6	ES	19AES0301	Engineering Graphics Laboratory	1	0	4	3	30	70	100
7	ES	19AES0203	Network Theory Laboratory	0	0	3	1.5	30	70	100
8	BS	19ABS9909	Chemistry Laboratory	0	0	3	1.5	30	70	100
9	ES	19AES0504	Data Structures Laboratory	0	0	3	1.5	30	70	100
TOTAL							21.5	270	630	900

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II B. Tech – I Semester

S. No	Category	Course Code	Course Title	Hours per week			Credits	Scheme of Examination (Max. Marks)		
				L	T	P		CIE	SEE	Total
Theory										
1	BS	19ABS9912	Transform Techniques and Complex Variables	3	0	0	3	30	70	100
2	ES	19AES0509	Basics of Python Programming	2	0	0	2	30	70	100
3	ES	19AES0505	Internet of Things (IoT)	2	0	0	2	30	70	100
4	PC	19APC0401	Electronic Devices and Circuits	3	0	0	3	30	70	100
5	PC	19APC0402	Electromagnetic Theory and Transmission Lines	3	0	0	3	30	70	100
6	PC	19APC0403	Signals and Systems	3	1	0	4	30	70	100
7	MC	19AMC9903	Environmental Studies	2	0	0	0	30	-	30
Practical										
8	ES	19AES0510	Basics of Python Programming Laboratory	0	0	2	1	30	70	100
9	PC	19APC0404	Electronic Devices and Circuits Laboratory	0	0	2	1	30	70	100
10	ES	19AES0506	Internet of Things (IoT) Laboratory	0	0	2	1	30	70	100
11	PC	19APC0405	Signals and Systems Laboratory	0	0	3	1.5	30	70	100
TOTAL							21.5	330	700	1030

II B. Tech – II Semester

S. No	Category	Course Code	Course Title	Hours per week			Credits	Scheme of Examination (Max. Marks)		
				L	T	P		CIE	SEE	Total
Theory										
1	BS	19ABS9920	Probability and Random Variables	3	0	0	3	30	70	100
2	HS	19AHS9903	Communicative English II	2	0	0	2	30	70	100
3	ES	19AES0302	Design Thinking and Product Innovation	2	0	0	2	30	70	100
4	PC	19APC0208	Control Systems	3	0	0	3	30	70	100
5	PC	19APC0406	Analog Electronic Circuits	3	0	0	3	30	70	100
6	ES	19AES0101	Basics of Civil and Mechanical Engineering	3	0	0	3	30	70	100
7	MC	19AMC9901	Biology for Engineers	2	0	0	0	30	-	30
Practical										
8	HS	19AHS9904	Communicative English II Laboratory	0	0	2	1	30	70	100
9	ES	19AES0303	Design Thinking and Product Innovation Laboratory	0	0	2	1	30	70	100
10	PC	19APC0407	Analog Electronic Circuits Laboratory	0	0	3	1.5	30	70	100
11	ES	19AES0102	Basics of Civil and Mechanical Engineering Laboratory	0	0	3	1.5	30	70	100
12	PR	19APR0401	Socially Relevant Projects (15 Hours/Semester)	0	0	0	0.5	50	-	50
TOTAL							21.5	380	700	1080


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III B. Tech – I Semester

S. No	Category	Course Code	Course Title		Hours per week			Credits	Scheme of Examination (Max. Marks)		
					L	T	P		CIE	SEE	Total
Theory											
1	PC	19APC0410	Digital Electronics and Logic Design		3	0	0	3	30	70	100
2	PC	19APC0411	Antennas and Wave Propagation		3	0	0	3	30	70	100
3	PC	19APC0412	Analog and Digital Communications		3	0	0	3	30	70	100
4	PC	19APC0413	Integrated Circuits and Applications		3	0	0	3	30	70	100
5	PE	19APE0401	Professional Elective – I	Information Theory and Coding	3	0	0	3	30	70	100
		MATLAB Programming									
		Computer System Architecture									
6	OE	19AOE0501	Open Elective – I (Inter disciplinary)	Database Management Systems	3	0	0	3	30	70	100
		19AOE0502		Operating Systems							
		19AOE0202		Programmable Logic Controllers							
7	MC	19AMC9902	Constitution of India		3	0	0	0	30	-	30
Practical											
8	PC	19APC0414	Digital Electronics and Logic Design Laboratory		0	0	2	1	30	70	100
9	PC	19APC0415	Analog and Digital Communications Laboratory		0	0	2	1	30	70	100
10	PC	19APC0416	Integrated Circuits and Applications Laboratory		0	0	2	1	30	70	100
11	PR	19APR0402	Socially Relevant Projects (15 Hours/Semester)		0	0	0	0.5	50	-	50
TOTAL								21.5	350	630	980


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III B. Tech – II Semester

III B. Tech – II Semester											
S. No	Category	Course Code	Course Title		Hours per week			Credits	Scheme of Examination (Max. Marks)		
					L	T	P		CIE	SEE	Total
Theory											
1	PC	19APC0417	Microprocessors and Microcontrollers		3	0	0	3	30	70	100
2	PC	19APC0418	Digital Signal Processing		3	0	0	3	30	70	100
3	PC	19APC0419	Microwave Engineering and Optical Communications		3	0	0	3	30	70	100
4	PE	19APE0404	Professional Elective - II	Real Time Operating Systems	3	0	0	3	30	70	100
		19APE0405		VLSI Design							
		19APE0406		MEMS							
5	HE	19AHE9902	Humanities Elective - I	Principles of Effective Public Speaking	3	0	0	3	30	70	100
		19AHSMB01		Managerial Economics and Financial Analysis							
		19AOE0518		Scripting Languages							
6	OE	19APC0216	Open Elective-II (Inter disciplinary)	Neural Networks and Fuzzy Logic	3	0	0	3	30	70	100
		19AHE9907		Advanced Optics							
		19AHE9905		Materials Chemistry							
7	MC	19AMC9904	Professional Ethics and Human Values		3	0	0	0	30	-	30
Practical											
8	PC	19APC0420	Microprocessors and Microcontrollers Laboratory		0	0	2	1	30	70	100
9	PC	19APC0421	Digital Signal Processing Laboratory		0	0	2	1	30	70	100
10	PC	19APC0422	Microwave Engineering and Optical Communications Laboratory		0	0	2	1	30	70	100
11	PR	19APR0403	Socially Relevant Projects (15 Hours/Semester)		0	0	0	0.5	50	-	50
12	PR	19APR0404	Industrial Training/ Internship/ Research Projects in National Laboratories/Academic Institutions		0	0	0	0	-	-	-
TOTAL								21.5	350	630	980


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IV B. Tech – I Semester

IV B. Tech – I Semester												
S. No	Category	Course Code	Course Title		Hours per week			Credits	Scheme of Examination (Max. Marks)			
					L	T	P		CIE	SEE	Total	
Theory												
1	PC	19APC0423	Digital Image Processing		3	0	0	3	30	70	100	
2	PC	19APC0424	Electronic Measurements and Instrumentation		2	0	0	2	30	70	100	
3	OE	19APC0510	Open Elective-III (Inter disciplinary)	Computer Networks	3	0	0	3	30	70	100	
		19AOE0304		Robotics								
		19AOE0301		Management Science								
4	PE	19APE0407	Professional Elective-III	Radar Systems	3	0	0	3	30	70	100	
		19APE0408		Digital System Design								
		19APE0409		RF System Design								
5	PE	19APE0410	Professional Elective-IV	Satellite Communication	3	0	0	3	30	70	100	
		19APE0411		Embedded Systems								
		19APE0412		Digital IC Design								
6	HE	19AHE9901	Humanities Elective – II	Technical Writing	2	0	0	2	30	70	100	
		19AHE9906		Effective Technical Communication								
Practical												
7	PC	19APC0427	Embedded Systems and UAV Laboratory		0	0	0	1	30	70	100	
8	PR	19APR0405	Socially Relevant Projects (15 Hours/Semester)		0	0	0	0.5	50	-	50	
9	PR	19APR0406	Industrial Training/Internship/Research Projects in National Laboratories/Academic Institutions		0	0	0	1.5	50	-	50	
TOTAL									19	310	490	800

IV B. Tech – II Semester

IV B. Tech – II Semester											
S. No	Category	Course Code	Course Title		Hours per week			Credits	Scheme of Examination (Max. Marks)		
					L	T	P		CIE	SEE	Total
Theory											
1	OE	19AOE0101	Open Elective – IV (Inter disciplinary) (MOOC-I)	Structural Health Monitoring	3	0	0	3	-	-	-
		An Introduction to Artificial Intelligence									
		Electricity and Safety Measures									
2	PE	19APE0413	Professional Elective-V (MOOC-II)	Electronic Systems for Cancer diagnosis	3	0	0	3	-	-	-
		Wireless Communications									
		Speech Processing									
Practical											
3	PR	19APR0407	Technical Paper Presentation/Seminars		0	0	0	0	50	-	50
4	PR	19APR0408	Project		0	0	0	9	60	140	200
TOTAL								15	110	140	250

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ANNAMACHARYA INSTITUTE OF TECHNOLOGY AND SCIENCES, TIRUPATI
(AUTONOMOUS)
AK20-REGULATIONS
ELECTRONICS and COMMUNICATION ENGINEERING (ECE)
(Effective for the batches admitted in 2020-21)

INDUCTION PROGRAM (3 weeks duration)

- ❖ Physical activity
- ❖ Creative Arts
- ❖ Universal Human Values
- ❖ Literary
- ❖ Proficiency Modules
- ❖ Lectures by Eminent People
- ❖ Visits to local Areas
- ❖ Familiarization to Dept./Branch and Innovations

I B. Tech – I Semester

I B. Tech – I Semester										
S. No.	Category	Course Code	Course Title	Hours per week			Credits	Scheme of Examination (Max. Marks)		
				L	T	P		CIE	SEE	Total
Theory										
1	BSC	20ABS9901	Algebra and Calculus	3	0	0	3	30	70	100
2	BSC	20ABS9902	Applied Physics	3	0	0	3	30	70	100
3	HSMC	20AHS9901	Communicative English	3	0	0	3	30	70	100
4	ESC	20AES0304	Engineering Workshop Practice	1	0	4	3	30	70	100
5	ESC	20AES0501	Problem Solving and Programming	3	0	0	3	30	70	100
6	HSMC	20AHS9902	Communicative English Laboratory	0	0	2	1.5	30	70	100
7	BSCL	20ABS9907	Applied Physics Laboratory	0	0	3	1.5	30	70	100
8	ESC	20AES0503	Problem Solving and Programming Laboratory	0	0	3	1.5	30	70	100
TOTAL							19.5	240	560	800

I B. Tech – II Semester

I B. Tech – II Semester										
S. No.	Category	Course Code	Course Title	Hours per week			Credits	Scheme of Examination (Max. Marks)		
				L	T	P		CIE	SEE	Total
Theory										
1	BSC	20ABS9906	Differential Equations and Vector Calculus	3	0	0	3	30	70	100
2	BSC	20ABS9904	Chemistry	3	0	0	3	30	70	100
3	ESC	20AES0201	Network Theory	3	0	0	3	30	70	100
4	ESC	20AES0502	Data Structures	3	0	0	3	30	70	100
5	ESC	20AES0301	Engineering Graphics	1	0	4	3	30	70	100
6	ESC	20AES0203	Network Theory Laboratory	0	0	3	1.5	30	70	100
7	BSC	20ABS9909	Chemistry Laboratory	0	0	3	1.5	30	70	100
8	ESC	20AES0504	Data Structures Laboratory	0	0	3	1.5	30	70	100
9	MC	20AMC9902	Constitution of India`	3	0	0	0	30		30
TOTAL							19.5	270	560	830

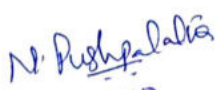
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II B. Tech – III Semester

II B. Tech – III Semester										
S. No.	Category	Course Code	Course Title	Hours per week			Credits	Scheme of Examination (Max. Marks)		
				L	T	P		CIE	SE E	Total
Theory										
1	BSC	20ABS9912	Transform Techniques and Complex Variables	3	0	0	3	30	70	100
2	PCC	20APC0401	Electronic Devices and Circuits	3	0	0	3	30	70	100
3	PCC	20APC0402	Switching Theory and Logic Design	3	0	0	3	30	70	100
4	PCC	20APC0403	Signals and Systems	3	0	0	3	30	70	100
5	HSS	20AHSMBO1	Managerial Economics and Financial Analysis	3	0	0	3	30	70	100
6	PCCL	20APC0404	Electronic Devices and Circuits Laboratory	0	0	3	1.5	30	70	100
7	PCCL	20APC0405	Signals and Systems Laboratory	0	0	3	1.5	30	70	100
8	PCCL	20APC0406	Switching Theory and Logic Design Laboratory	0	0	3	1.5	30	70	100
9	SOC	20ASC0401	Electronic Circuit Design	1	0	2	2	100	-	100
10	MC	20AMC9901	Biology for Engineers	2	0	0	0	30		30
TOTAL							21.5	370	560	930

II B. Tech – IV Semester

II B. Tech – IV Semester										
S. No.	Category	Course Code	Course Title	Hours per week			Credits	Scheme of Examination (Max. Marks)		
				L	T	P		CIE	SEE	Total
Theory										
1	ESC	20AES0509	Basics of Python Programming	3	0	0	3	30	70	100
2	PCC	20APC0407	Probability Theory and Stochastic Process	3	0	0	3	30	70	100
3	PCC	20APC0408	Electromagnetic Theory and Transmission Lines	3	0	0	3	30	70	100
4	PCC	20APC0409	Analog Communication Systems	3	0	0	3	30	70	100
5	PCC	20APC0410	Electronic Circuit Analysis	3	0	0	3	30	70	100
6	ESCL	20AES0510	Basics of Python Programming Laboratory	0	0	3	1.5	30	70	100
7	PCCL	20APC0411	Analog Communication Systems Laboratory	0	0	3	1.5	30	70	100
8	PCCL	20APC0412	Electronic Circuit Analysis Laboratory	0	0	3	1.5	30	70	100
9	SOC	20ASC0402	Internet of Things	1	0	2	2	100	-	100
10	HSC	20AHS9905	Universal Human Values	2	1	0	3	30	70	100
TOTAL							24.5	370	630	1000
Community service Project with credits\										
(To visit the selected community to conduct survey (Socio-economic & domain survey) and conduct sensitization/awareness program/activities at the end of IV- semester before commencement of V-semester and complete immersion programme also during V-Semester and submit report in V - semester. Assessment will be done at the end of V-Semester)										
Honors/Minor courses (The hours distribution can be 3-0-2 or 3-1-0 also)				4	0	0	4	100		100


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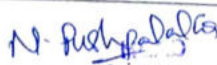
III B. Tech – V Semester

III B. Tech – V Semester										
S. No.	Category	Course Code	Course Title	Hours per week			Credits	Scheme of Examination (Max. Marks)		
				L	T	P		CIE	SEE	Total
Theory										
1	PCC	20APC0413	Antennas and Wave Propagation	3	0	0	3	30	70	100
2	PCC	20APC0414	Digital Communication Systems	3	0	0	3	30	70	100
3	PCC	20APC0415	Integrated Circuits and Applications	3	0	0	3	30	70	100
4	OEC/JOE	20APC0515	Operating Systems	3	0	0	3	30	70	100
		20AOE0202	Programmable Logic Controllers							
		20APC0213	Control Systems							
5	PEC	20APE0401	VLSI Design	3	0	0	3	30	70	100
		20APE0402	Computer Organization							
		20APE0403	Digital System Design							
6	PCCL	20APC0416	Digital Communication Systems Laboratory	0	0	3	1.5	30	70	100
7	PCCL	20APC0417	Integrated Circuits and Applications Laboratory	0	0	3	1.5	30	70	100
8	SAC/SSC	20AHE9902	Principles of Effective Public Speaking	1	0	2	2	100	-	100
9	MC	20AMC9904	Professional Ethics and Human Values	3	0	0	0	30	-	30
10	CSP	20CSP0401	Community Service Project	0	0	0	1.5	100	-	100
TOTAL							21.5	440	490	930
Honors/Minor courses (The hours distribution can be 3-0-2 or 3-1-0 also)				4	0	0	4	100		100

III B. Tech –VI Semester

III B. Tech –VI Semester

S. No.	Category	Course Code	Course Title		Hours per week			Credits	Scheme of Examination (Max. Marks)		
					L	T	P		CIE	SE E	Total
Theory											
1	PCC	20APC0418	Microprocessors and Microcontrollers		3	0	0	3	30	70	100
2	PCC	20APC0419	Digital Signal Processing		3	0	0	3	30	70	100
3	PCC	20APC0420	Microwave and Optical Communications		3	0	0	3	30	70	100
4	PEC	20APE0404	Low Power VLSI Circuits and Systems		3	0	0	3	30	70	100
		20APE0405	MEMS and Microsystems								
		20APE0406	Industrial Electronics								
5	OEC/JOE	20AOE0518	Open Elective (Inter disciplinary) (MOOC-I)	An Introduction to Artificial Intelligence	0	0	0	3			100
		20AOE0516		R Programming							
		20AOE0201		Neural Networks and Fuzzy Logic							
6	PCCL	20APC0421	Microprocessors and Microcontrollers Laboratory		0	0	3	1.5	30	70	100
7	PCCL	20APC0422	Digital Signal Processing Laboratory		0	0	3	1.5	30	70	100
8	PCCL	20APC0423	Microwave and Optical Communications Laboratory		0	0	3	1.5	30	70	100
9	SAC/SSC	20ASA0501	Basics of Cloud Computing		1	0	2	2	100	-	100
10	MC	20AMC9903	Environmental Studies		2	0	0	0	30	-	30
TOTAL											
Internship 2 Months (Mandatory) during summer vacation								21.5	340	490	930
Honors/Minor courses (The hours distribution can be 3-0-2 or 3-1-0 also)					4	0	0	4	100		100


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IV B. Tech – VII Semester

IV B. Tech – VII Semester											
S. No.	Category	Course Code	Course Title	Hours per week			Credits	Scheme of Examination (Max. Marks)			
				L	T	P		CIE	SEE	Total	
Theory											
1	PC	20APC0424	Pattern Recognition and Applications	3	0	0	3	30	70	100	
2	PEC	20APE0407	Digital Image Processing	3	0	0	3	30	70	100	
		20APE0408	Adaptive Signal Processing								
		20APE0409	Television Engineering								
3	PEC	20APE0410	Professional Elective (MOOC-II)	0	0	0	3			100	
		20APE0411									Electronic Measurements and Instrumentation
		20APE0412									Electronic Systems for Cancer diagnosis
4	PEC	20APE0413	RF Integrated Circuits	3	0	0	3	30	70	100	
		20APE0414	Radar Systems								
		20APE0415	Satellite Communications								
5	OEC/JOE	20APC0510	Computer Networks	2	0	2	3	30	70	100	
		20APE0417	Sensors and IOT								
		20AOE0402	Bio Medical Instrumentation								
6	OEC/JOE	20APC0512	Data Base Management Systems	2	0	2	3	30	70	100	
		20APE0416	Computer System Architecture								
		20AOE0301	Robotics								
7	SAC/SSC	20ASA0401	Embedded Systems	1	0	2	2	100	-	100	
Industrial/Research Internship 2 Months (Mandatory) after third year (to be evaluated during VII semester)				0	0	0	3	100	-	100	
TOTAL							23	350	350	800	
Honors/Minor courses (The hours distribution can be 3-0-2 or 3-1-0 also)				4	0	0	4	100		100	

IV B. Tech – VIII Semester

IV B. Tech – VIII Semester										
S. No.	Category	Course Code	Course Title	Hours per week			Credits	Scheme of Examination (Max. Marks)		
				L	T	P		CIE	SEE	Total
Theory										
1	MP	20APR0401	Project work	0	0	0	12	60	140	200
TOTAL							12	60	140	200
Grand Total							163	2440	3780	6420

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY ANANTAPUR
ANANTHAPURAMU (A.P.)

COURSE STRUCTURE AND SYLLABUS

(For Affiliated Engineering Colleges w.e.f. 2017-18 Admitted Batch)
M.Tech -ECE-Digital Electronics and Communication Systems (DECS)

M.Tech I Semester

S.No	Subject Code	Subject	L	T	P	C
1.	17D06101	Structural Digital System Design	4	-	-	4
2.	17D38101	Error Control Coding	4	-	-	4
3.	17D38102	Digital Communication Techniques	4	-	-	4
4.	17D06108	Advanced Digital Signal Processing	4	-		4
5.		Elective-I	3	-	-	3
	17D06105	a. Advanced Operating Systems				
	17D06210	b. Low Power VLSI Design				
	17D38103	c. Advanced Computer Architecture				
6.		Elective-II	3	-	-	3
	17D38104	a. Transform Techniques				
	17D38105	b. Statistical Signal Processing				
	17D38106	c. Spread Spectrum Communication				
7.	17D38107	Structural Digital System Design Lab	-	-	3	2
8.	17D38108	Advanced Digital Signal Processing Lab	-	-	3	2
TOTAL			22	-	06	26

M.Tech II Semester

S.No	Subject Code	Subject	L	T	P	C
1.	17D06201	Embedded System Design	4		-	4
2.	17D06209	Digital Image and Video Processing	4		-	4
3.	17D06204	Sensors and Actuators	4		-	4
4.	17D38201	Wireless Communications and Networks	4			4
5.		Elective-III	3		-	3
	17D38202	a. Internet of Things				
	17D38203	b. Speech Processing				
	17D38204	c. Software Defined Radio				
6.		Elective-IV	3		-	3
	17D06208	a. Network Security & Cryptography				
	17D38205	b. Wireless Adhoc Networks				
	17D38206	c. Optical Communication Technology				
7.	17D38207	Advanced Communication Systems Lab	-		3	2
8.	17D38208	Embedded System Design Lab	-		3	2
TOTAL			22		06	26


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M.Tech. II YEAR (III Semester)

S. No	Course Code	Subject	L	T	P	C
1.	17D20301 17D20302 17D20303	Elective – V (Open Elective) 1. Research Methodology 2. Human Values & Professional Ethics 3. Intellectual Property Rights	4	---	---	4
2.	17D38301	ELECTIVE – VI (MOOCs)	---	---	---	---
3.	17D38302	Comprehensive Viva Voce	---	---	---	2
4.	17D38303	Seminar	---	---	---	2
5.	17D38304	Teaching Assignment	---	---	---	2
6.	17D38305	Project Work Phase I	---	---	---	4
		Total	4			14

M.Tech. II YEAR (IV Semester)

S. No	Course Code	Subject	L	T	P	C
1.	17D38401	Project Work Phase II	---	---	---	12
		Total				12

Project Viva Voce Grades:

A: Very Good

B: Good

C: Satisfactory

D: Not Satisfactory

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ANNAMACHARYA INSTITUTE OF TECHNOLOGY AND SCIENCES, TIRUPATI
(AUTONOMOUS)
ELECTRONICS & COMMUNICATION ENGINEERING (ECE)
Specialization: Digital Electronics & Communication Systems (DECS)

Effective for the batches admitted in 2019-20(AK19 Regulations)

Semester I

S. No.	Category	Course Code	Course Title	Hours Per Week			Credits	Scheme of Examination (Max. Marks)		
				L	T	P		CIE	SEE	Total
Theory										
1	PC	19DPC3801	Digital Communication Techniques	3	0	0	3	40	60	100
2	PC	19DPC3802	Advanced Digital Signal Processing	3	0	0	3	40	60	100
3	PE	19DPE3801	Advanced Computer Architecture	3	0	0	3	40	60	100
		19DPE3802	Low Power VLSI Design							
		19DPE3803	Audio Video Coding and Compression							
4	PE	19DPE3804	Transform Techniques	3	0	0	3	40	60	100
		19DPE3805	Data Networks							
		19DPE3806	Error Control Coding							
5	PC	19MBA0110	Research Methodology and IPR	2	0	0	2	40	60	100
6	MC	19DMC9901	English for Research Paper Writing	2	0	0	0	40	0	40
		19DMC2001	Disaster Management							
		19DMC9902	Sanskrit for Technical Knowledge							
		19DMC9903	Value Education							
Practical										
7	PC	19DPC3803	Digital Communication Techniques Lab	0	0	4	2	40	60	100
8	PC	19DPC3804	Advanced Digital Signal Processing Lab	0	0	4	2	40	60	100
				16	0	8	18	320	420	740

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Semester II

S. No.	Category	Course Code	Course Name	Hours Per Week			Credits	Scheme of Examination (Max. Marks)		
				L	T	P		CIE	SEE	Total
Theory										
1	PC	19DPC3805	Pattern Recognition	3	0	0	3	40	60	100
2	PC	19DPC3806	Detection and Estimation of signals	3	0	0	3	40	60	100
3	PE	19DPE3807	Wireless Communication and Networks	3	0	0	3	40	60	100
		19DPE3808	Microcontrollers and Programmable Digital Signal Processors							
		19DPE3809	Sensors and Actuators							
4	PE	19DPE3810	Speech Processing	3	0	0	3	40	60	100
		19DPE3811	Network Security and Cryptography							
		19DPE3812	Optical Communication Technology							
5	MC	19DMC9904	Constitution of India	2	0	0	0	40	0	40
		19DMC5801	Pedagogy Studies							
		19DMC9905	Stress Management by Yoga							
		19DMC9906	Personality Development through Life Enlightenment Skills							
Practical										
6	PR	19DPR3801	Mini Project	0	0	4	2	40	60	100
7	PC	19DPC3807	Pattern Recognition Lab	0	0	4	2	40	60	100
8	PC	19DPC3808	Detection and Estimation of signals Lab	0	0	4	2	40	60	100
Total				14	0	12	18	320	420	740

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Semester III

S. No.	Category	Course Code	Course Name	Hours Per Week			Credits	Scheme of Examination (Max. Marks)		
				L	T	P		CIE	SEE	Total
Theory										
1	PE	19DPE3813	Remote Sensing	3	0	0	3	40	60	100
		19DPE3814	High Performance Networks							
		19DPE3815	MIMO Systems							
2	OE	19DOE5801	Business Analytics	3	0	0	3	40	60	100
		19DOE9001	Industrial Safety							
		19DOE9002	Operations Research							
		19DOE9004	Composite materials							
		19DOE2001	Waste to Energy							
		19DOE2002	Project Management							
Practical										
3	PR	19DPR3802	Dissertation – 1/ Industry oriented project	0	0	20	10	40	60	100
Total				6	0	20	16	120	180	300

Semester IV

S. No.	Category	Course Code	Course Name	Hours Per Week			Credits	Scheme of Examination (Max. Marks)		
				L	T	P		CIE	SEE	Total
Practical										
1	PR	19DPR3803	Dissertation– 2	0	0	32	16	60	140	200
Total				0	0	32	16	60	140	200

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ANNAMACHARYA INSTITUTE OF TECHNOLOGY AND SCIENCES: TIRUPATI (AUTONOMOUS)

Department of Electronics & Communication Engineering

Specialization: Digital Electronics & Communication Systems (DECS)

Effective for the batches admitted from 2022-23

M. Tech – I Semester

S.No	Category	Course Code	Course Title	Hours per week			Credits	Scheme of Examination (Max. Marks)		
				L	T	P		CIE	SEE	Total
THEORY										
1	PC	22DPC3801	Digital CommunicationTechniques	3	0	0	3	40	60	100
2	PC	22DPC3802	Advanced Digital SignalProcessing	3	0	0	3	40	60	100
3	PE		Professional Elective I	3	0	0	3	40	60	100
		22DPE3801	Advanced ComputerArchitecture							
		22DPE3802	Low Power VLSI Design							
		22DPE3803	Audio Video Coding andCompression							
4	PE		Professional Elective II	3	0	0	3	40	60	100
		22DPE3804	Transform Techniques							
		22DPE3805	Data Networks							
		22DPE3806	Error Control Coding							
5	ML	22MBA0110	Research Methodology and IPR	2	0	0	2	40	60	100
6	MC		Audit course I	2	0	0	0	40	-	40-
		22DMC9901	1. English for Research Paper Writing							
		22DMC2001	2. Disaster Management							
		22DMC9902	3. Sanskrit for Technical Knowledge							
		22DMC9903	4. Value Education							
PRACTICAL										
7	PC	22DPC3803	Digital CommunicationTechniques Lab	0	0	4	2	40	60	100
8	PC	22DPC3804	Advanced Digital SignalProcessing Lab	0	0	4	2	40	60	100
Total							18			740

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M. Tech – II Semester

S.No	Category	Course Code	Course Title	Hours per week			Credits	Scheme of Examination (Max. Marks)		
				L	T	P		CIE	SEE	Total
THEORY										
1	PC	22DPC3805	Pattern Recognition	3	0	0	3	40	60	100
2	PC	22DPC3806	Detection and Estimationof signals	3	0	0	3	40	60	100
3	PE		Professional Elective III	3	0	0	3	40	60	100
		22DPE3807	Wireless Communicationand Networks							
		22DPE3808	Microcontrollers and Programmable DigitalSignal Processors							
		22DPE3809	Sensors and Actuators							
4	PE		Professional Elective IV	3	0	0	3	40	60	100
		22DPE3810	Speech Processing							
		22DPE3811	Network Security andCryptography							
		22DPE3812	Optical CommunicationTechnology							
5	MC		Audit course II	2	0	0	0	40	-	40
		22DMC9904	1.Constitution of India							
		22DMC5801	2. Pedagogy Studies							
		22DMC9905	3. Stress Management by Yoga							
		22DMC9906	4. Personality Development through Life Enlightenment Skills.							
PRACTICAL										
6	PC	22DPC3807	Pattern Recognition Lab	0	0	4	2	40	60	100
7	PC	22DPC3808	Detection and Estimationof signals Lab	0	0	4	2	40	60	100
PROJECT										
8	PR	22DPR3801	Technical Seminar	0	0	4	2	100	00	100
Total							18			740

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Department of Electronics & Communication Engineering

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Effective for the batches admitted from 2022-23

M. Tech –III Semester

S.No	Category	Course Code	Course Title	Hours per week			Credits	Scheme of Examination (Max. Marks)		
				L	T	P		CIE	SEE	Total
THEORY										
1	PE		Professional Elective IV	3	0	0	3	40	60	100
		22DPE3813	Remote Sensing							
		22DPE3814	High Performance Networks							
		22DPE3815	MIMO Systems							
2	OE		Open Elective I	3	0	0	3	40	60	100
		22DOE2001	1. Waste to Energy							
		22DOE2002	2. Project Management							
		22DOE9001	3. Industrial Safety							
		22DOE9002	4. Operations Research							
		22DOE5801	5. Business Analytics							
		22DOE9004	6. Composite Materials							
PROJECT										
3	PR	22DPR3802	Dissertation Phase – I	0	0	20	10	100	00	100
4	PR	22DPR3803	Co-curricular Activities	0	0	0	2			
TOTAL							18			300

M. Tech – IV Semester

S.No	Category	Course Code	Course Title	Hours per week			Credits	Scheme of Examination (Max. Marks)		
				L	T	P		CIE	SEE	Total
PROJECT										
1	PR	22DPR3804	Dissertation Phase – II	0	0	32	16	100	100	200
TOTAL							16			200


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