ANNAMACHARYA INSTITUTE OF TECHNOLOGY AND SCIENCES, TIRUPATI
(AUTONOMOUS)
AK20-REGULATIONS
ELECTRONICS and COMMUNICATION ENGINEERING (ECE)
(Effective for the batches admitted in 2022)

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 Semester (B. Tech –I year)

S. No.	Category	Course Code	Course Title	Hours per week			Credits	Scheme of Examination (Max. Marks)		
				L	T/CLC	P		CIE	SEE	Total
Theory										
1	BSC	20ABS9901	Algebra and Calculus	2	1	0	3	30	70	100
2	BSC	20ABS9902	Applied Physics	2	1	0	3	30	70	100
3	HSMC	20AHS9901	Communicative English	2	1	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	2	1	0	3	30	70	100
6	HSMC	20AHS9902	Communicative English Laboratory	0	0	3	1.5	30	70	100
7	BSC	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**

II Semester (B. Tech –I year)

S. No.	Category	Course Code	Course Title	Hours per week			Credits	Scheme of Examination (Max. Marks)		
				L	T/CLC	P		CIE	SEE	Total
Theory										
1	BSC	20ABS9906	Differential Equations and Vector Calculus	2	1	0	3	30	70	100
2	BSC	20ABS9904	Chemistry	2	1	0	3	30	70	100
3	ESC	20AES0201	Network Theory	2	1	0	3	30	70	100
4	ESC	20AES0502	Data Structures	2	1	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**

III Semester (B. Tech –II year)

S. No.	Category	Course Code	Course Title	Hours per week			Credits	Scheme of Examination (Max. Marks)		
				L	T/CLC	P		CIE	SEE	Total
Theory										
1	BSC	20ABS9912	Transform Techniques and Complex Variables	2	1	0	3	30	70	100
2	PCC	20APC0401	Electronic Devices and Circuits	2	1	0	3	30	70	100
3	PCC	20APC0402	Switching Theory and Logic Design	2	1	0	3	30	70	100
4	PCC	20APC0403	Signals and Systems	2	1	0	3	30	70	100
5	HSMC	20AHSMB01	Managerial Economics and Financial Analysis	2	1	0	3	30	70	100
6	PCC	20APC0404	Electronic Devices and Circuits Laboratory	0	0	3	1.5	30	70	100
7	PCC	20APC0405	Signals and Systems Laboratory	0	0	3	1.5	30	70	100
8	PCC	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	3	0	0	0	30		30
TOTAL							21.5	370	560	930

IV Semester (B. Tech –II year)

S. No.	Category	Course Code	Course Title	Hours per week			Credits	Scheme of Examination (Max. Marks)		
				L	T/CLC	P		CIE	SEE	Total
Theory										
1	ESC	20AES0509	Basics of Python Programming	2	1	0	3	30	70	100
2	PCC	20APC0407	Probability Theory and Stochastic Process	2	1	0	3	30	70	100
3	PCC	20APC0408	Electromagnetic Theory and Transmission Lines	2	1	0	3	30	70	100
4	PCC	20APC0409	Analog Communication Systems	2	1	0	3	30	70	100
5	PCC	20APC0410	Electronic Circuit Analysis	2	1	0	3	30	70	100
6	ESC	20AES0510	Basics of Python Programming Laboratory	0	0	3	1.5	30	70	100
7	PCC	20APC0411	Analog Communication Systems Laboratory	0	0	3	1.5	30	70	100
8	PCC	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)

V Semester (B. Tech –III year)

S. No.	Category	Course Code	Course Title	L	T/CLC	P	Credits	CIE	SEE	Total
			Theory							
1	PCC	20APC0413	Antennas and Wave Propagation	2	1	0	3	30	70	100
2	PCC	20APC0414	Digital Communication Systems	2	1	0	3	30	70	100
3	PCC	20APC0415	Integrated Circuits and Applications	2	1	0	3	30	70	100
4	OEC	20APC0515	Operating Systems	2	1	0	3	30	70	100
		20AOE0202	Programmable Logic Controllers							
		20APC0213	Control Systems							
5	PEC	20APE0401	VLSI Design	2	1	0	3	30	70	100
		20APE0402	Computer Organization							
		20APE0403	Digital System Design							
6	PCC	20APC0416	Digital Communication Systems Laboratory	0	0	3	1.5	30	70	100
7	PCC	20APC0417	Integrated Circuits and Applications Laboratory	0	0	3	1.5	30	70	100
8	SOC	20AHE9902	Principles of Effective Public Speaking	1	0	2	2	100	-	100
9	MC	20AMC9904	Professional Ethics and Human Values	2	1	0	0	30	-	30
10	CSP	20CSP0401	Community Service Project	0	0	0	1.5	100	-	100
			TOTAL				21.5	440	490	930

S. No.	Open Elective*(OE/JOE come for NPTEL)
1	The Joy of Computing Using Python
2	Computer Architecture
3	An Introduction to Artificial Intelligence
4	Environment and Development
5	Soft Skills
6	Public Speaking
7	Ethical Hacking
8	Cloud Computing
9	Electronic Systems for Cancer Diagnosis
10	Remote Sensing Essentials
11	Sustainable Transportation Systems

Student shall register any number of MOOC courses listed above (Open) by the department as approved by the BOS from III year. But student is required to submit the pass certificate on NPTEL platform for at least one course with in the Programme duration (Before IV-II examination notification released).

VI Semester (B. Tech –III year)

S. No.	Category	Course Code	Course Title	Hours per week			Credits	Scheme of Examination (Max. Marks)		
				L	T/CLC	P		CIE	SEE	Total
Theory										
1	PCC	20APC0418	Microprocessors and Microcontrollers	2	1	0	3	30	70	100
2	PCC	20APC0419	Digital Signal Processing	2	1	0	3	30	70	100
3	PCC	20APC0420	Microwave and Optical Communications	2	1	0	3	30	70	100
4	PEC (MOOCS)	20MOC0402	Low Power VLSI Circuits and Systems MEMS and Microsystems VLSI physical Design	2	1	0	3	25	75	100
5	PCC	20APC0421	Microprocessors and Microcontrollers Laboratory	0	0	3	1.5	30	70	100
6	PCC	20APC0422	Digital Signal Processing Laboratory	0	0	3	1.5	30	70	100
7	PCC	20APC0423	Microwave and Optical Communications Laboratory	0	0	3	1.5	30	70	100
8	SOC	20ASA0501	Basics of Cloud Computing	1	0	2	2	100	-	100
9	MC	20AMC9903	Environmental Studies	3	0	0	0	30	-	30
TOTAL							**18.5**	**335**	**495**	**830**
Internship 2 Months (Mandatory) during summer vacation										

VII Semester (B. Tech –IV year)

S. No.	Category	Course Code	Course Title	Hours per week			Credits	Scheme of Examination (Max. Marks)		
				L	T/CLC	P		CIE	SEE	Total
Theory										
1	PC	20APC0424	Pattern Recognition and Applications	2	1	0	3	30	70	100
2	PEC	20APE0407	Digital Image Processing	2	1	0	3	30	70	100
		20APE0408	Adaptive Signal Processing							
		20APE0409	Television Engineering							
3	PEC	20APE0410	Electronic Measurements and Instrumentation	2	1	0	3	30	70	100
		20APE0418	Sensors and IOT							
		20APE0412	RF Integrated Circuits							
4	PEC(MOOCS)	20MOC0403	Radar Systems	2	1	0	3	25	75	100
			Satellite Communications							
			Wireless Communications							
5	OEC	20APC0516	Computer Networks	2	1	0	3	30	70	100
		20APE0203	Neural Networks and Fuzzy Logic							
		20AOE0402	Bio Medical Instrumentation							
6	OEC	20APC0502	Data Base Management Systems	2	1	0	3	30	70	100
		20APE0416	Computer System Architecture							
		20AOE0301	Robotics							
7	SOC	20ASA0401	Embedded Systems and Unmanned Aerial Vehicle	1	0	2	2	100	-	100
8	PR	20APR0401	Evaluation of Industry Internship (III-II Summer Internship)	0	0	0	3	100	-	100
TOTAL							**23**	**375**	**425**	**800**

VIII Semester (B. Tech –IV year)

S. No.	Category	Course Code	Course Title	Hours per week			Credits	Scheme of Examination (Max. Marks)		
				L	T/CLC	P		CIE	SEE	Total
Theory										
1	MOOCS	20MOC401	MOOC-NPTEL	0	0		3	25	75	100
2	PR	20APR0402	Internship	0	0		3	100	-	100
3	PR	20APR0403	Project work	0	0		9	60	140	200
TOTAL							**15**	**185**	**215**	**400**
Grand Total							**163**	**2595**	**3925**	**6520**