



**ANNAMACHARYA INSTITUTE OF TECHNOLOGY AND SCIENCES, TIRUPATI
(AUTONOMOUS)**

**Course structure for Four Year Regular B.Tech. Degree Program
AK-19 (Effective for the batches admitted from 2019-20)
ELECTRICAL & ELECTRONICS ENGINEERING (EEE)**

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

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	LC	19ALC0201	Electrical and Electronics Engineering Workshop	0	0	2	1	30	70	100
6	BS	19ABS9907	Applied Physics Lab	0	0	3	1.5	30	70	100
7	ES	19AES0503	Problem Solving and Programming Lab	0	0	4	2	30	70	100
8	HS	19AHS9902	Communicative English I Lab	0	0	2	1	30	70	100
TOTAL							18.5	240	560	800

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	19AES0101	Basics of Civil and Mechanical Engineering	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	LC	19ALC0301	Engineering Workshop	0	0	2	1	30	70	100
6	ES	19AES0301	Engineering Graphics Lab	1	0	4	3	30	70	100
7	ES	19AES0102	Basics of Civil and Mechanical Engineering Lab	0	0	3	1.5	30	70	100
8	BS	19ABS9909	Chemistry Lab	0	0	3	1.5	30	70	100
9	ES	19AES0504	Data Structures Lab	0	0	3	1.5	30	70	100
TOTAL							21.5	270	630	900

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
1	BS	19ABS9912	Transform Techniques and Complex Variables	3	0	0	3	30	70	100
2	HS	19AHS9903	Communicative English II	2	0	0	2	30	70	100
3	ES	19AES0505	Internet of Things (IoT)	2	0	0	2	30	70	100
4	PC	19APC0201	Electrical Circuit Analysis	3	0	0	3	30	70	100
5	PC	19APC0401	Electronic Devices and Circuits	3	0	0	3	30	70	100
6	PC	19APC0202	Engineering Electromagnetics	3	1	0	4	30	70	100
7	MC	19AMC9903	Environmental Studies	2	0	0	0	30	--	30
PRACTICAL										
8	HS	19AHS9904	Communicative English II Lab	0	0	2	1	30	70	100
9	ES	19AES0506	Internet of Things (IoT) Lab	0	0	2	1	30	70	100
10	PC	19APC0203	Electrical Circuit Analysis Lab	0	0	3	1.5	30	70	100
11	PC	19APC0404	Electronic Devices and Circuits Lab	0	0	2	1	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
1	BS	19ABS9916	Numerical Methods and Probability	3	1	0	4	30	70	100
2	ES	19AES0509	Basics of Python Programming	2	0	0	2	30	70	100
3	ES	19AES0302	Design Thinking and Product Innovation	2	0	0	2	30	70	100
4	PC	19APC0204	Electrical Machines - I	3	1	0	4	30	70	100
5	PC	19APC0406	Analog Electronic Circuits	2	0	0	2	30	70	100
6	PC	19APC0408	Digital Electronic Circuits	2	0	0	2	30	70	100
7	MC	19AMC9901	Biology for Engineers	3	0	0	0	30	--	30
PRACTICAL										
8	PR	19APR0201	Socially Relevant Projects (15 hours / semester)	0	0	0	0.5	50	--	50
9	PC	19APC0205	Electrical Machines - I Lab	0	0	3	1.5	30	70	100
10	ES	19AES0510	Basics of Python Programming Lab	0	0	2	1	30	70	100
11	ES	19AES0303	Design Thinking and Product Innovation Lab	0	0	2	1	30	70	100
12	PC	19APC0409	Analog and Digital Electronic Circuits Lab	0	0	3	1.5	30	70	100
TOTAL							21.5	380	700	1080

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
1	PC	19APC0206	Power Systems - I	3	0	0	3	30	70	100
2	PC	19APC0207	Electrical Machines - II	2	1	0	3	30	70	100
3	PC	19APC0208	Control Systems	2	1	0	3	30	70	100
4	PC	19APC0209	Power Electronics	3	0	0	3	30	70	100
5	PE	19APC0403	Signals and Systems	3	0	0	3	30	70	100
		19APC0425	Analog and Digital IC Applications							
		19APC0426	Linear System Analysis							
6	OE	19AHEMB01	Managerial Economics and Financial Analysis	3	0	0	3	30	70	100
		19APC0510	Computer Networks							
		19APC0412	Analog and Digital Communications							
7	MC	19AMC9902	Constitution of India	3	0	0	0	30	---	30
PRACTICAL										
8	PC	19APC0210	Electrical Machines - II Lab	0	0	2	1	30	70	100
9	PC	19APC0211	Control Systems Lab	0	0	2	1	30	70	100
10	PC	19APC0212	Power Electronics Lab	0	0	2	1	30	70	100
11	PR	19APR0202	Socially Relevant Projects (15 Hours /Sem)	0	0	0	0.5	50	---	50
TOTAL							21.5	350	630	980

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
1	PC	19APC0213	Power Systems - II	3	0	0	3	30	70	100
2	PC	19APC0214	Electrical Measurements and Instrumentation	3	0	0	3	30	70	100
3	PC	19APC0215	Power System Analysis	3	0	0	3	30	70	100
4	PC	19APC0216	Neural Networks and Fuzzy Logic	3	0	0	3	30	70	100
5	OE	19APC0417	Microprocessors and Microcontrollers	3	0	0	3	30	70	100
		19APE0306	Renewable energy technologies							
		19AOE0511	Business Data Analytics							
6	HE	19AHE9902	Principles of Effective Public Speaking	3	0	0	3	30	70	100
		19AHE9907	Optics							
		19AHE9909	Quantum Mechanics							
7	MC	19AMC9904	Professional Ethics and Human values	3	0	0	0	30	--	30
PRACTICAL										
8	PC	19APC0217	Power Systems Lab	0	0	2	1	30	70	100
9	PC	19APC0420	Microprocessors and Microcontrollers Lab	0	0	2	1	30	70	100
10	PC	19APC0218	Electrical Measurements Lab	0	0	2	1	30	70	100
11	PR	19APR0203	Socially Relevant Projects (15 hours / semester)	0	0	0	0.5	50	--	50
12	PR	19APR0204	Industrial Training/ Internship/ Research Projects in National Laboratories/Academic Institutions	0	0	0	0	--	--	--
TOTAL							21.5	350	630	980

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
1	PC	19APC0219	Switch Gear and Protection	3	0	0	3	30	70	100
2	PC	19APC0220	High Voltage Engineering	2	0	0	2	30	70	100
3	OE	19APE0411	Embedded Systems	3	0	0	3	30	70	100
		19APC0502	Data Base Management Systems							
		19APC0101	Mechanics of materials							
4	PE	19APE0201	Electrical Distribution Systems	3	0	0	3	30	70	100
		19APE0202	Power Semi-conductor Drives							
		19APE0203	Advanced Control Systems							
5	PE	19APE0204	Power System Operation and Control	3	0	0	3	30	70	100
		19APE0205	Flexible AC Transmission Systems							
		19APC0418	Digital Signal Processing							
6	HE	19AHE9901	Technical Writing	2	0	0	2	30	70	100
		19AHE9906	Effective technical Communication							
		19ASA0501	Soft skills							
PRACTICAL										
8	PC	19APC0221	Switchgear and Protection Lab	0	0	2	1	30	70	100
9	PR	19APR0205	Socially Relevant Projects (15 hours / semester)	0	0	0	0.5	50	--	50
10	PR	19APR0206	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

S.No	Category	Course Code	Course Title	Hours per week			Credits	Scheme of Examination (Max. Marks)		
				L	T	P		CIE	SEE	Total
1	MOOCS	19AOE0515	The joy of computing using Python (MOOCS-NPTEL)	3	0	0	3	-	-	100
		19AOE0516	Principles of Management (MOOCS-NPTEL)							
		19AOE0517	Introduction to Industry 4.0 and Industrial internet of things (MOOCS-NPTEL)							
2	MOOCS	19APE0206	Design of photovoltaic systems (MOOCS-NPTEL)	3	0	0	3	-	-	100
		19APE0207	Solar Energy Engineering and Technology (MOOCS-NPTEL)							
		19APE0208	Physics of Renewable Energy Systems (MOOCS-NPTEL)							
PRACTICAL										
3	PR	19APR0207	Technical Paper Presentation/Seminar	0	0	0	0	50	0	50
4	PR	19APR0208	Project	3	0	0	9	60	140	200
TOTAL							15	110	140	450
Grand Total of all semesters							160	2340	4480	7020