ANNAMACHARYA INSTITUTE OF TECHNOLOGY AND SCIENCES, TIRUPATI (AUTONOMOUS)

COMPUTER SCIENCE AND ENGINEERING
(Effective for the batches admitted in 2019-20)

I B. Tech – I Semester (Theory – 3, Lab – 4)

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 & Calculus	3	1	0	4	30	70	100
2	BS	19ABS9904	Chemistry	3	0	0	3	30	70	100
3	ES	19AES0501	Problem Solving and Programming	3	1	0	4	30	70	100
PRACTICAL										
4	ES	19AES0301	Engineering Graphics Lab	1	0	4	3	30	70	100
5	LC	19ALC0301	Engineering Workshop	0	0	2	1	30	70	100
6	BS	19ABS9909	Chemistry Lab	0	0	3	1.5	30	70	100
7	ES	19AES0503	Problem Solving and Programming Lab	0	0	4	2	30	70	100
TOTAL							**18.5**	**210**	**490**	**700**

I B. Tech – II Semester (Theory – 5, Lab – 5)

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	19AES0202	Basics of Electrical and Electronics Engineering	3	0	0	3	30	70	100
2	BS	19ABS9911	Probability and Statistics	3	1	0	4	30	70	100
3	BS	19ABS9902	Applied Physics	3	0	0	3	30	70	100
4	ES	19AES0502	Data Structures	3	0	0	3	30	70	100
5	HS	19AHS9901	Communicative English - I	0	0	2	2	30	70	100
PRACTICAL										
5	LC	19ALC0501	Computer Science and Engineering Workshop Lab	0	0	2	1	30	70	100
6	HS	19AHS9902	Communicative English - I Lab	0	0	2	1	30	70	100
7	ES	19AES0204	Basics of Electrical and Electronics Engineering Lab	0	0	3	1.5	30	70	100
8	BS	19ABS9907	Applied Physics 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**	**300**	**700**	**1000**

II B. Tech – I Semester (Theory – 7, Lab – 3)

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	19ABS9921	Numerical Methods	3	0	0	3	30	70	100
2	ES	19AES0509	Basics of Python Programming	2	0	0	2	30	70	100
3	ES	19AES0104	Basic Civil & Mechanical Engineering	3	0	0	3	30	70	100
4	PC	19APC0501	Discrete Mathematics	3	0	0	3	30	70	100
5	PC	19APC0502	Database Management Systems	3	0	0	3	30	70	100
6	PC	19APC0503	Digital Logic Design	3	0	0	3	30	70	100
7	MC	19AMC9901	Biology for Engineers	2	0	0	0	30	-	30
PRACTICAL										
8	ES	19AES0510	Basics of Python Programming Lab	0	0	2	1	30	70	100
9	ES	19AES0105	Basic Civil & Mechanical Engineering Lab	0	0	3	1.5	30	70	100
10	PC	19APC0505	Database Management Systems Lab	0	0	4	2	30	70	100
			TOTAL				21.5	300	630	930

II B. Tech – II Semester (Theory – 7, Lab – 5)

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	19APC0512	Object Oriented Programming through Java	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 & Product Innovation	2	0	0	2	30	70	100
4	PC	19APC0506	Computer Organization	3	0	0	3	30	70	100
5	PC	19APC0511	Design and Analysis of Algorithms	3	0	0	3	30	70	100
6	PC	19APC0509	Formal Languages and Automata Theory	3	0	0	3	30	70	100
7	MC	19AMC9903	Environmental Studies	2	0	0	0	30	-	30
PRACTICAL										
8	PR	19APR0501	Socially Relevant Project (15 Hrs / Sem)	0	0	0	0.5	50	-	50
9	HS	19AHS9904	Communicative English II Lab	0	0	2	1	30	70	100
10	ES	19AES0303	Design Thinking & Product Innovation Lab	0	0	2	1	30	70	100
11	PC	19APC0504	Computer Organization Lab	0	0	2	1	30	70	100
12	PC	19APC0514	Object Oriented Programming through Java Lab	0	0	4	2	30	70	100
			TOTAL				21.5	380	700	1080

III B. Tech – I Semester (Theory – 7, Lab – 4) – AK19

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	19APC0515	Operating Systems	3	0	0	3	30	70	100
2	PC	19APC0521	Artificial Intelligence	3	0	0	3	30	70	100
3	PC	19APC0520	Compiler Design	3	0	0	3	30	70	100
4	PC	19APC0507	Software Engineering	2	0	0	2	30	70	100
5	OE	19APE0417 19AOE0303 19APC0428	Open Elective I Sensors and IoT Optimization Techniques Microprocessor and Interfacing	3	0	0	3	30	70	100
6	PE	19APE0501 19APE0502 19APE0503	Professional Elective I Data Warehousing and Mining Design Patterns Computer Graphics	3	0	0	3	30	70	100
7	MC	19AMC9904	Professional Ethics and Human Values	3	0	0	0	30	-	30
PRACTICAL										
8	PR	19APR0502	Socially Relevant Projects (15 Hrs/Semester)	0	0	0	0.5	50	-	50
9	PC	19APC0517	Operating System Lab	0	0	3	1.5	30	70	100
10	PC	19APC0522	Artificial Intelligence Lab	0	0	3	1.5	30	70	100
11	PC	19APC0508	Compiler Design Lab	0	0	2	1	30	70	100
			TOTAL				21.5	350	630	980

III B. Tech – II Semester (Theory – 7, Lab – 4) – AK19

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	19APC0510	Computer Networks	3	0	0	3	30	70	100
2	PC	19APC0516	Grid and Cloud Computing	3	0	0	3	30	70	100
3	PC	19APC0513	Machine Learning	3	0	0	3	30	70	100
4	PC	19APC0523	Web Programming	3	0	0	3	30	70	100
5	PE	19APE0504 19APE0505 19APE0506	Professional Elective II Object Oriented Analysis and Design Cyber Security Big Data Analytics	3	0	0	3	30	70	100
6	OE	19AHEMB02 19APC0216 19APE0413	Open Elective II (Inter-Disciplinary Elective II) Entrepreneurship Development Neural Networks and Fuzzy Logic Cellular and Mobile Communications	3	0	0	3	30	70	100
7	MC	19AMC9902	Constitution of India	3	0	0	0	30	-	30
PRACTICAL										
8	PR	19APR0503	Socially Relevant Projects (15 Hrs / Sem)	0	0	0	0.5	50	-	50
9	PC	19APC0525	Computer Networks Lab	0	0	2	1	30	70	100
10	PC	19APC0518	Grid and Cloud Computing Lab	0	0	2	1	30	70	100
11	PC	19APC0524	Web Programming Lab	0	0	2	1	30	70	100
12	Internship has to be carried during Summer Break. Evaluation will be done in next semester.									
			TOTAL				21.5	350	630	980

IV B. Tech – I Semester (Theory – 6, Lab – 4) – AK19

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	19APC0519	Cryptography and Network Security	2	0	0	2	30	70	100
2	PC	19APC0526	Mobile Application Development	2	0	0	2	30	70	100
3	OE	19APC0423 19APE0411 19APE0418	Open Elective III (Inter Discipline Elective III) Digital Image Processing Embedded Systems Enabling Technologies For Data Science & Analytics: IoT	3	0	0	3	30	70	100
4	PE	19APE0507 19APE0508 19APE0509 19APE0513 19APE0514	Professional Elective III Deep Learning Techniques Real Time Operating Systems Blockchain Technology Agile Methodologies Adhoc & Sensor Networks	3	0	0	3	30	70	100
5	PE	19APE0510 19APE0511 19APE0512 19APE0515 19APE0516	Professional Elective IV Data Analytics Natural Language Processing Software Project Management Linux Environment System Distributed Systems	3	0	0	3	30	70	100
6	HE	19AHE9903/ 19AHE9910/ 19AHSMB01	Humanities Elective I Professional Communication Mathematical Modeling and Simulation Managerial Economics and Financial Analysis	2	0	0	2	30	70	100
PRACTICAL										
7	PC	19APC0528	Cryptography and Network Security Lab	0	0	2	1	30	70	100
8	PC	19APC0527	Mobile Application Development Lab	0	0	2	1	30	70	100
9	PR	19APR0504	Socially Relevant Projects (15 Hrs / Sem)	0	0	0	0.5	50	-	50
10	PR	19APR0505	Industrial Training / Internship / Research Projects in National Laboratories / Academic Institutions	0	0	3	1.5	50	-	50
			TOTAL				19	340	560	900

IV B. Tech – II Semester (Theory – 2, Lab – 2) – AK19

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		**Open Elective IV (MOOCs)** Introduction to robotics System Design for Sustainability Design, Technology and Innovation Basics of software defined Radios Introduction to Smart Grid Introduction to Wireless and Cellular Communications Fiber Optic Communication Technology Stochastic control and communication Real-Time Digital Signal Processing Microwave Engineering Principles And Techniques Of Modern Radar Systems	3	0	0	3	-	-	-

			VLSI Interconnects							
			Developing Soft Skills and Personality							
			Body language: Key to professional Success							
			Psychology of Everyday							
			Introduction to Film Studies							
			Short Fiction in Indian Literature							
			Gender and literature							
			Educational Leadership							
			Entrepreneurship And IP Strategy							
			Globalization And Culture							
			Consumer Psychology							
			Public Speaking							
			Project Management							
			Training Of Trainers							
			Decision-Making Under Uncertainty							
			Strategy: An Introduction to game Theory							
			Organizational Behaviour							
			Customer Relationship Management							
			Decision Support System For Managers							
			Stress Management							
2	PE		**Professional Elective (MOOC's)** Data Science for Engineers Reinforcement Learning Introduction to Game Theory and Mechanism Design Introduction to Quantum Computing: Quantum Algorithms and Qiskit Advanced Distributed systems Parameterized Algorithms Computer Vision Scalable Data Science Spatial Informatics Demystifying Networking Social Network Analysis Design & Implementation of Human-Computer Interfaces Computational Complexity	3	0	0	3	-	-	-
PRACTICAL										
3	PR	19APR0506	Project I	0	0	18	9	60	140	200
4	PR	19APR0507	Technical Paper Presentation/Seminar	-	-	-	0	50	0	50
						TOTAL	15	110	140	250

Guidelines for MOOC Courses @ AITS::Tirupati

1. Two MOOC courses are introduced in AK19 curriculum in IV B.Tech II Semester (8Th Semester) Students should compulsorily submit the pass certificate generated by NPTEL for verification and for consideration of credits. As understood, Certificate by NPTEL will be issued only when a registered students submit assignments regularly as per schedule given and get a minimum of 10 out of 25 marks; and obtain a minimum of 30 marks out of 75 marks in the end examination. (Both criteria should be met to declare pass by NPTEL).

2. Out of two MOOC courses introduced, one MOOC shall be with 'Professional Elective Nature and another with 'open Elective' nature: Head of the department will announce options available on the NPTEL platform, and the students have to select 3 credited courses only to fit into the existing credit scheme.

3. Courses with minimum 8 weeks learning duration only shall be chosen for MOOC courses.

4. Marks or percentage obtained will be converted to grade points and reflects on the grade sheet.

5. Swayam NPTEL Courses will be notified on this platform before 1st November for January semester; and will be notified before 1st June for July semester. Accordingly HOD shall issue notification/circular to the teachers connected and to the concerned student groups.

6. In case the student fails/ absent in the MOOC courses in the regular examination he/she will be all owed to register for next supply examination in manual mode as he can't avail MOOC platform to clear the pending course during the next season. The pattern of examination for manual mode in supplementary will be same as that of NPTEL question paper.

7. Examination fee paid for the 8th semester to the exam branch of the college is only for project work, internships and seminars. The exam fee payable for taking NPTEL online courses shall be borne by the students only

8. Teachers connected to the student group for guidance of MOOC courses shall also register for the course, go though the e-content in it to provide proper guidance to the students and also to get his 'mentor certificate'.

9. Registration facility – extension of dates if any shall be continuously monitored by the HOD & students.