

**SRI VENKATESWARA COLLEGE OF ENGINEERING
(AUTONOMOUS)**

Karakambadi Road Tirupati-517 507



Department of Computer Science & Engineering

**Course Structure for
I, II, III & IV Years
R 20 Regulations**

SRI VENKATESWARA COLLEGE OF ENGINEERING

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Karakambadi Road, TIRUPATI - 517507

Computer Science & Engineering

B.Tech I Semester

S.No	CourseNo	CourseName	Category	L-T-P	Credits
1.	MA20ABS101	Linear Algebra and Calculus	BS	3-0-0	3
2.	CH20ABS103	Chemistry	BS	3-0-0	3
3.	CS20AES101	Problem Solving using C	ES	3-0-0	3
4.	EE20AES101	Basic Electrical & Electronics Engineering	ES	3-0-0	3
5.	ME20AES101	Engineering Workshop	ES	0-0-3	1.5
6.	CS20AES103	IT Workshop	ES	0-0-3	1.5
7.	CH20ABS104	Chemistry Lab	BS	0-0-3	1.5
8.	CS20AES102	Problem Solving using C Lab	ES	0-0-3	1.5
9.	EE20AES102	Basic Electrical & Electronics Engineering Lab	ES	0-0-2	1.5
10.	EG20AMC101	Speech & Oral Communication	MC	2-0-0	0
				Total	19.5

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B.Tech II Semester

S.No	CourseNo	CourseName	Category	L-T-P/D	Credits
1.	MA20ABS201	Differential Equations and Vector Calculus	BS	3-0-0	3
2.	PH20ABS103	Applied Physics	BS	3-0-0	3
3.	EG20AHS101	Communicative English	HS	3-0-0	3
4.	CS20AES201	Data Structures	ES	3-0-0	3
5.	ME20AES102	Engineering Drawing	ES	1-0-0/2	2
6.	ME20AES103	Engineering Graphics Lab	ES	0-0-2	1
7.	EG20AHS102	Communicative English Lab	HS	0-0-3	1.5
8.	PH20ABS104	Applied Physics Lab	BS	0-0-3	1.5
9.	CS20AES202	Data Structures Lab	ES	0-0-3	1.5
10.	BA20AMC201	Universal Human Values	MC	3-0-0	0
11	BA20AHS201	Mandatory course (AICTE Suggested): Universal Human Values	HS	3-0-0	*3
12.	MA20AMC101	Logical Skills for Professionals – I	MC	2-0-0	0
Total					19.5

*UHV is considered as Credit Based Course From 2021 Batch

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B. Tech III Semester

S. No	Course No	Course Name	Category	L-T-P	Credits
1	MA20ABS303	Discrete Mathematics & Graph Theory	BS	3-0-0	3
2	EC20AES301	Digital Electronics & Microprocessors	ES	3-0-0	3
3	CS20APC305	Software Engineering	PC	3-0-0	3
4	CS20APC303	Database Management Systems	PC	3-0-0	3
5	IT20APC301	Python Programming	PC	3-0-0	3
6	EC20AES302	Digital Electronics & Microprocessors Lab	ES	0-0-3	1.5
7	CS20APC304	Database Management Systems Lab	PC	0-0-3	1.5
8	IT20APC302	Python Programming Lab	PC	0-0-3	1.5
9	AM20ASC301	Skill oriented course-I Linux Administration	SC	1-0-2	2
10	CH20AMC201	Mandatory non-credit course-II Environmental Science	MC	2-0-0	0
11	EG20AMC302	Enhancing English Language Skills (Lateral Entry Students Only)	MC	2-0-0	0
12	BA20AHS201	Mandatory course (AICTE Suggested): Universal Human Values(Lateral Entry Students Only)	HS	3-0-0	*3
				Total	21.5

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B. Tech IV Semester

S. No	Course No	Course Name	Category	L-T-P	Credits
1	MA20ABS401	Numerical Methods, Probability and Statistics	BS	3-0-0	3
2	CS20APC401	Object Oriented Programming Through Java	PC	3-0-0	3
3	CS20APC301	Computer Organization and Architecture	PC	3-0-0	3
4	AM20APC301	Design and Analysis of Algorithms	PC	3-0-0	3
5	BA20AHS301	Humanities Elective-I Managerial Economics and Financial Analysis	HS	3-0-0	3
	BA20AHS302	Business Environment			
	BA20AHS303	Organizational Behavior			
6	CS20APC402	Object Oriented Programming Through Java Lab	PC	0-0-3	1.5
7	CS20APC302	Computer Organization and Architecture Lab	PC	0-0-3	1.5
8	AM20APC302	Algorithms Lab	PC	0-0-3	1.5
9	IT20ASC401	Skill Oriented Course-II Exploratory Data Analysis With R	SC	1-0-2	2
10	CS20AMC401	Mandatory non-credit course-III Design Thinking for Innovation	MC	2-0-0	0
11	SH20AAC401	NSS/YOGA/Cultural Activities/Sports	AC	0-0-2	0
12	MA20AMC401	Engineering Mathematics (Lateral Entry Students Only)	MC	2-0-0	0.0
				Total	21.5
Community Service Project – After the end of IV Semester – 4 Weeks – 1.5 Credits					
Honors/Minor courses (The hours distribution can be 3-0-2 or 3-1-0 also)				0-0-2	0

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B. Tech V Semester

IIIB. Tech-I Semester(Theory-5,lab-2,SOC-1MC-3)					
S. No	Course No	Course Name	Category	L-T-P	Credits
1	CS20APC501	Computer Networks	PC	3-0-0	3
2	CS20APC502	Formal Languages and Compiler Design	PC	3-0-0	3
3	CS20APC504	Operating Systems	PC	3-0-0	3
4	CE20AOE501 EC20AOE501 EE20AOE501 ME20AOE502	Open Elective-I Basics of civil engineering Basic VLSI Design Introduction to control Systems Solar and wind energy systems	OE	3-0-0	3
5	CS20APE501 CS20APE502 CS20APE503 CS20APE504 CS20APE505	Professional Elective-I Advanced Computer Architecture Data Warehousing and Data mining Digital Image Processing Object Oriented Analysis Design & Testing Principles of Programming Languages	PE	3-0-0	3
6	CS20APC503	Computer Networks Lab	PC	0-0-3	1.5
7	CS20APC505	Operating Systems Lab	PC	0-0-3	1.5
8	EG20ASC301	Skill Oriented Course-III Soft Skills	SC	1-0-2	2
9	BA20AMC502	Mandatory non-credit course-IV Intellectual Property Rights	MC	2-0-0	0
10	CH20AMC301	Mandatory non-credit course-V Biology for Engineers	MC	2-0-0	0
11	CS20AIP501	Evaluation of Summer Internship (4 Weeks)	IP		1.5
12	CS20ATS501	Technical Seminar Presentation-I	TS		0.5
13	IT20AMC501	Problem Solving and Programming (Lateral Entry Students only)	MC	2-0-0	0
				Total	22
14	Honors/Minor courses (The hours distribution can be 3-0-2 or 3-1-0 also)			4-0-0	4
15	Honors/Minor courses (NPTEL/MOOCs)			2-0-0	2

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B.Tech VI Semester

IIIB.Tech-IISemester(Theory-5,lab-3,SOC-1MC-2)					
S. No	Course No	Course Name	Category	L-T-P	Credits
1	CS20APC601	Cryptography and Network Security	PC	3-0-0	3
2	CS20APC603	Machine Learning	PC	3-0-0	3
3	CS20APC605	Web and Internet Technologies	PC	3-0-0	3
4	CS20APE601 CS20APE602 CS20APE603 CS20APE604 CS20APE605	Professional Elective-II Artificial Intelligence Big Data Analytics Computer Vision Internet of Things Software Testing	PE	3-0-0	3
5	ME20AOE501 EE20AOE503 EC20AOE602 CE20AOE603	Open Elective-II Introduction to Automation Renewable Energy Resources Signal Processing Water Resources Planning & Management	OE	3-0-0	3
6	CS20APC602	Cryptography and Network Security Lab	PC	0-0-3	1.5
7	CS20APC604	Machine Learning Lab	PC	0-0-3	1.5
8	CS20APC606	Web and Internet Technologies Lab	PC	0-0-3	1.5
9	CS20ASC601	Skill Oriented Course-V Dev Ops	SC	1-0-2	2
10	BA20AMC501	Mandatory non-credit course-V Constitution of India	MC	2-0-0	0
11	CS20ATS601	Technical Seminar Presentation-II	TS		0.5
12	AM20AMC601	AI Tools Techniques & Applications for LE	MC	2-0-0	0
13.	MA20AMC301	LogicalSkillsforProfessionals - II	MC	2-0-0	0

Industrial/Research/Mini Project (Mandatory) 1 Month during summer vacation				
			Total	22
13	Honors / Minor courses (The hours distribution can be 3-0-2 or 3-1-0 also)	4-0-0	4	
14	Honors/Minor courses (NPTEL/MOOCs)	2-0-0	2	

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B. Tech VII Semester

IVB.Tech-ISEmester(Theory-6,lab-0,SOC-1)					
S. No	Course No	Course Name	Category	L-T-P	Credits
1	CS20APE701 CS20APE702 CS20APE703 CS20APE704 CS20APE705	Professional Elective-III Block Chain Technologies Data Science Data Visualization Techniques Distributed Computing Service oriented Architecture	PE	3-0-0	3
2	CS20APE706 CS20APE707 CS20APE708 CS20APE709 CS20APE710	Professional Elective-IV Advanced Language Processors Cyber Security Deep Learning Full Stack Development Software Project Management	PE	3-0-0	3
3	CS20APE711 CS20APE712 CS20APE713 CS20APE714 CS20APE715	Professional Elective-V Agile Methodologies Cloud Computing Malware Analysis Natural language processing Reinforcement Learning	PE	3-0-0	3
4	CE20AOE701 EE20AOE603 ME20AOE602 EC20AOE702	Open Elective-III Air Pollution and Quality Control Optimization Techniques Through MATLAB Power Generation Techniques Principles of Communication Engineering	OE	3-0-0	3
5	EE20AOE701 EC20AOE705 CE20AOE705 ME20AOE702	Open Elective-IV Embedded Systems Introduction to Image Processing Low Cost Housing Techniques Robotics in Industrial Engineering	OE	3-0-0	3
6	BA20AHS701 BA20AHS705 BA20AHS706	Humanities Elective-II Business Ethics and Corporate Governance Management Science Strategic Management	HS	3-0-0	3
7	CS20ASC701	Skill Oriented Course-V MOOC-2 (NPTEL)/Digital Marketing	SC	1-0-2	2

8	CS20AIP701	Industrial/Research Internship 1 Month Evaluation Mini Project	IP	0-0-0	3
9	CS20APW701	Project Work Stage-I	PW		2
10	CS20ATS701	Technical Seminar Presentation- III	TS		0.5
				Total	25.5
11	Honors/Minor courses (The hours distribution can be 3-0-2 or 3-1-0 also)			4-0-0	4

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B. Tech VIII Semester

S. No	Course No	Course Name	Category	L-T-P	Credits
1	CS20APW801	Project Work Stage - II / Full Internship in Industry	PW	0-0-0	8.5
				Total	8.5