



# AMRITA SAI INSTITUTE OF SCIENCE AND TECHNOLOGY (AUTONOMOUS)


Approved by AICTE, New Delhi; Permanently Affiliated to JNTUK, Kakinada,  
Recognized by UGC under 2(f) & 12(B) of 1956 Act.,  
An ISO 9001:2015 Certified institution, Accredited by NAAC "A" Grade,  
Paritala, Kanchikacherla, Krishna Dist., Andhra Pradesh – 521 180.  
www.amritasai.org.in, Phone: 0866-2428399



## 1.2.1 Percentage of New Courses introduced out of the total number of courses across all the programs offered during the last five years.

S.NO	YEAR	ENGINEERING	PG-MBA/MCA /M.TECH	TOTAL NO OF NEW COURSES	TOTAL COURSES	PERCENTAGE
1	2022-23	49	09	58	1357	24.02%
2	2021-22	49	67	116		
3	2020-21	59	49	108		
4	2019-20	33	11	44		
5	2018-19	--	--	--		
GRAND TOTAL				326		

  
COORDINATOR

  
IQAC Coordinator  
Amrita Sai Institute of Science & Technology  
Amrita Sai Nagar, Paritala -521180

  
PRINCIPAL

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Amrita Sai Institute of Science and Technology  
Amrita Sai Nagar, Paritala  
Krishna Dist 521 180



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## NEWLY ADDED COURSES A.Y- 2022-23

S.No	Name of the Course	Regulation	Year/Sem	Course Code	Name of New Courses Introduced	Year of Introduction
1	B.Tech	AR-20	III-I	20CE5T4	Digital Image Processing	2022-23
2	B.Tech		III-I	20CE5T5B	Earthquake Resistance Design	2022-23
3	B.Tech		III-I	20CE5T5C	Theory Of Elasticity	2022-23
4	B.Tech		III-I	20SI5L7	Summer Internship	2022-23
5	B.Tech		III-II	20CE6T2	Geotechnical Engineering	2022-23
6	B.Tech		III-II	20CE6T3	Environmental Engineering	2022-23
7	B.Tech		III-II	20CE6T4A	Water Resource Engineering	2022-23
8	B.Tech		III-II	20CE6T4B	Waste Water Management	2022-23
9	B.Tech		III-II	20CE6T5	Machine Learning	2022-23
10	B.Tech		III-II	20SO6S4	Coding And Technical Training	2022-23
11	B.Tech		III-II	20MC6T7	Employability Skills	2022-23
12	B.Tech	AR-22	I-I	22ES1T5	Introduction To Engineering	2022-23
13	B.Tech		I-II	22ES2T5	IOT	2022-23
14	B.Tech	AR-20	III-I	20EE5T1	Electrical Measurements & Instrumentation	2022-23
15	B.Tech		III-I	20EE5T3	Power Electronics & Converters	2022-23
16	B.Tech		III-I	20OE5T4	Renewable Energy Sources	2022-23
17	B.Tech		III-I	20EE5L1	Electrical Measurements & Instrumentation Lab	2022-23
18	B.Tech		III-I	20EE5L2	Power Electronics & Converters Lab	2022-23
19	B.Tech		III-I	20SE5S1	Advanced English Communication Training	2022-23
20	B.Tech		III-II	20EL6T4C	Advanced Control systems	2022-23
21	B.Tech		III-II	20CS6T5A	Internet Of Things	2022-23
22	B.Tech		III-II	20EE6L1	Power Systems & Simulation Lab	2022-23
23	B.Tech		III-II	20EE6L2	Micro Processor & Micro Controllers Lab	2022-23
24	B.Tech		III-II	20SE6S1	Coding & Technical Training	2022-23
25	B.Tech		III-II	20EE6MC1	Research Methodology	2022-23
26	B.Tech		AR-22	I-I	22MC1T6	Learning An Art Form
27	B.Tech	AR-20	III-I	20MEST2	Kinematics & Theory Of Machines	2022-23
28	B.Tech		III-I	20MEST5	Automation in Manufacturing	2022-23
29	B.Tech		III-I	20ME5S3	Advanced English Communication Testing	2022-23
30	B.Tech		III-II	20ME6S4	Coding & Technical Training	2022-23

31	B.Tech	AR-20	III-II	20MC6T6	Professional Ethics & Human Values	2022-23
32	B.Tech		III-I	20EC5L3	Verbal, Quantitative & Reasoning	2022-23
33	B.Tech		III-II	20EC6T2	Linear & Digital IC Applications	2022-23
34	B.Tech		III-II	20EC6L2	Linear & Digital IC Applications Lab	2022-23
35	B.Tech		III-II	20EC6L3	Antenna Design & Microwave Engineering Lab	2022-23
36	B.Tech		III-II	20EC6T6	Coding & Technical Training	2022-23
37	B.Tech		III-I	20MC5T1	Professional Ethics And Human Values	2022-23
38	B.Tech		III-II	20CS6T1	Artificial Intelligence Technologies	2022-23
39	B.Tech		III-II	20CS6T2	Machine Learning Technologies	2022-23
40	B.Tech		III-II	20CS6T1	Cyber Security	2022-23
41	B.Tech		III-II	20CS6T2	Artificial Intelligence And Machine Learning	2022-23
42	B.Tech		III-II	20CS6T4A	Computer Graphics	2022-23
43	B.Tech		III-II	20CS6T4B	Block Chain Technologies	2022-23
44	B.Tech		III-II	20CS6T4C	Human Computer Interaction	2022-23
45	B.Tech		III-II	20CS6T4D	Neural Networks And Fuzzy Logic	2022-23
46	B.Tech		III-II	20CS6T4E	Android Mobile Application Development	2022-23
47	B.Tech		IV-II	18CS8T3A	Internet Of Things	2022-23
48	B.Tech		IV-II	18CS8T3B	Natural Language Processing	2022-23
49	B.Tech		IV-II	18CS8T3C	Deep Learning	2022-23
50	M.TECH		AR-22	I-I	22VLES1T1	Rtl Simulation And Synthesis With Plds
51	M.TECH	I-I		22VLES1T2	Micro Controllers And Programmable Digital Signal Processors	2022-23
52	M.TECH	I-I		22VLES1L2	Micro Controllers And Programmable Digital Signal Processors Lab	2022-23
53	M.TECH	I-II		22VLES2T1	Analog & Digital CMOS VLSI Design	2022-23
54	M.TECH	I-II		22VLES2T2	Real Time Operating Systems	2022-23
55	M.TECH	I-II		22VLES2T4	Network Security And Cryptography	2022-23
56	M.TECH	I-II		22VLES2L1	Analog & Digital CMOS VLSI Design Lab	2022-23
57	M.TECH	I-II		22VLES2L2	Real Time Operating Systems Lab	2022-23
58	M.TECH	I-II			Mini Project	2022-23

  
ICAC Coordinator

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PARITALA(P), KANCHIKACHERLA(M), KRISHNA(D)-521180(A.P.)

**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING  
(COMMON TO EEE, CIVIL, CSD, CBA, CIC, CSM, MECH & ECE)  
COURSE STRUCTURE FOR AR22 REGULATION**

**I YEAR I SEMESTER:**

SNO	SUBCODE	COURSE TITLE	CATEGORY	L	T	P	CREDITS
1	22HS1T1	ENGLISH-I	HSC	3	0	0	3
2	22BS1T2	MATHEMATICS-I	BSC	3	0	0	3
3	22BS1T3	PHYSICS	BSC	3	0	0	3
4	22ES1T4	C PROGRAMMING	ESC	3	0	0	3
5	22ES1T5	BASICS OF ENGINEERING & TECHNOLOGY	ESC	1	0	4	3
6	22HS1L1	ENGLISH LAB -I	HSC LAB	0	0	3	1.5
7	22BS1L2	PHYSICS & WORKSHOP LAB	BSCLAB	0	0	3	1.5
8	22ES1L3	C PROGRAMMING LAB	ESCLAB	0	0	3	1.5
9	2CS1MC1	LEARNING AN ART FORM	MC	2	0	0	0
<b>TOTAL CREDITS</b>							<b>19.5</b>

**I YEAR II SEMESTER:**

S.NO	SUBCODE	COURSE TITLE	CATEGORY	L	T	P	CREDITS
1	22HS2T1	ENGLISH-II	HSC	3	0	0	3
2	22BS2T2	MATHEMATICS-II	BSC	3	0	0	3
3	22BS2T3	CHEMISTRY	BSC	3	0	0	3
4	22ES2T4	PYTHON PROGRAMMING	ESC	3	0	0	3
5	22ES2T5	BASICS OF IOT	ESC	3	0	0	3
6	22HS2L1	ENGLISH LAB	HSCLAB	0	0	3	1.5
7	22BS2L2	CHEMISTRY & ITWS LAB	BSCLAB	0	0	3	1.5
8	22ES2L3	PYTHON LAB	ESCLAB	0	0	3	1.5
9	22CS2MC1	ENVIRONMENTAL STUDIES	MC	2	0	0	0
<b>TOTAL CREDITS</b>							<b>19.5</b>



## II YEAR I SEMESTER:

S.NO	SUB CODE	COURSE TITLE	CATEGORY	L	T	P	CREDITS
1	20BS3T1	Numerical Methods and Complex Variables	BSC	3	0	0	3
2	20EC3T2	Electronic Devices and Circuits	PCC	3	0	0	3
3	20EC3T3	Signals and Systems	PCC	3	1	0	4
4	20EC3T4	Switching Theory and Logic Design	PCC	2	0	0	2
5	20EC3T5	Network Theory	PCC	3	0	0	3
6	20EC3L1	Electronic Devices and Circuits Lab	PCC(LAB)	0	0	3	1.5
7	20EC3L2	Network Theory Lab	PCC(LAB)	0	0	3	1.5
8	20EC3L3	Switching Theory and Logic Design Lab	PCC(LAB)	0	0	3	1.5
9	20EC3S3	*PCB Design *GIT	SOC*	1	0	2	2
10	20EC3M3	Constitution of India	Mandatory course	2	0	0	0
<b>TOTAL CREDITS</b>							<b>21.5</b>

## II YEAR II SEMESTER:

S.NO	SUB CODE	COURSE TITLE	CATEGORY	L	T	P	CREDITS
1	20BS4T1	Probability and Statistics	BSC / PCC	3	0	0	3
2	20EC4T2	Computer Architecture and Organization	ESC	3	0	0	3
3	20EC4T3	Electronic Circuit Analysis	PCC	3	0	0	3
4	20EC4T4	Analog and Digital Communications	PCC	3	0	0	3
5	20HS4T1	Communicative English - II	HSS	3	0	0	3
6	20EC4L1	MATLAB and Arduino Programming Lab	ESC/PCC (Interdisciplinary) (LAB)	0	0	3	1.5
7	20EC4L2	Electronic Circuits Analysis Lab	PCC (LAB)	0	0	3	1.5
8	20EC4L3	Analog and Digital Communications Lab	PCC(LAB)	0	0	3	1.5
9	20EC4S4	*Mini projects on PCB *eSim	SOC*	1	0	2	2
<b>TOTAL CREDITS</b>							<b>21.5</b>
Internship 2 Months (Mandatory) during summer vacation, MOOCs-NPTEL/edx				3	0	2	4

Prepared

Chairman

Member(s)  
 J. Santosh Kumar  
 H. ...





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**III YEAR I SEMESTER:**

SNO	SUB CODE	COURSE TITLE	CATEGORY	L	T	P	CREDITS
1	20EC5T1	Pulse and Digital Circuits	PCC	2	0	0	2
2	20EC5T2	Electromagnetic waves and Transmission lines	PCC	3	0	0	3
3	20EC5T3	Linear and Digital Integrated Circuit Applications	PCC	3	1	0	4
4	20EC5T4A 20EC5T4B 20EC5T4C 20EC5T4D 20EC5T4E	1. Introduction to MEMS 2. Bio-Medical Engineering 3. CMOS-Design 4. Nano electronics 5. Scientific computing	OEC/JOE	3	0	0	3
5	20EC5T5	Random Variables and Stochastic Processes	PEC	3	0	0	3
6	20EC5L1	Pulse and Digital Circuits Lab	PCC Lab	0	0	3	1.5
7	20EC5L2	Linear and Digital Integrated Circuit Applications Lab	PCC Lab	0	0	3	1.5
8	20EC5S1	*Mini projects *R	SAC/SSC*	1	0	2	2
9	20MC5T1	Professional Ethics & Human Values	Mandatory course	2	0	0	0
Summer Internship 2 Months (Mandatory) after second year (to be evaluated during V semester)				0	0	0	1.5
<b>TOTAL CREDITS</b>							<b>21.5</b>
Internship 2 Months (Mandatory) during summer vacation, MOOCs-NPTEL/edx				3	0	2	4

**III YEAR II SEMESTER:**

S.NO	SUB CODE	COURSE TITLE	CATEGORY	L	T	P	CREDITS
1	20EC6T1	Control Systems	PCC	3	0	0	3
2	20EC6T2	Digital Signal Processing	PCC	3	0	0	3
3	20EC6T3	Micro Processors & Micro Controllers	PCC	3	0	0	3
4	20EC6T4	VLSI Design	PEC	3	0	0	3
5	20EC6T5A 20EC6T5B 20EC6T5C 20EC6T5D 20EC6T5E	1. OOPs through Java 2. Data Mining 3. Industrial Robotics 4. Power Electronics 5. Artificial Neural Networks	OEC/JOE	2	0	2	3
6	20EC6L1	MPMC Lab	PCC Lab	0	0	3	1.5
7	20EC6L2	Digital Signal Processing Lab	PCC Lab	0	0	3	1.5
8	20EC6L3	VLSI Lab	PCC Lab	0	0	3	1.5
9	20EC6S1	*Mini projects * Latex	SAC/ SSC*	1	0	2	2
<b>TOTAL CREDITS</b>							<b>21.5</b>
Honors/Minor courses			MOOCs/EDX	3	0	2	4
<b>Industrial/Research Internship (Mandatory) 2 Months during summer vacation</b>							

Prepared

Chairman

Member(s)  
I. Santirabha  
H. e. a. y



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**IV YEAR I SEMESTER:**

S.NO	SUB CODE	COURSE TITLE	CATEGORY	L	T	P	CREDITS	
1	20EC7T1	Digital Image & Video Processing	PEC	3	0	0	3	
2	20EC7T2	Fiber Optic Communication	PEC	3	0	0	3	
3	20EC7T3	Computer Networks	PEC	3	0	0	3	
4	20EC7T4A	1. Satellite Communication	OEC/ JOE	2	0	2	3	
	20EC7T4B	2. Wireless Sensor Networks						
	20EC7T4C	3. Mobile Communication and Networks						
	20EC7T4D	4. Microwave Theory and Techniques						
5	20EC7T5A	1. Embedded systems	OEC/ JOE	2	0	2	3	
	20EC7T5B	2. Error correcting codes						
	20EC7T5C	3. High Speed Electronics						
	20EC7T5D	4. Adaptive Signal Processing						
6	20EC7T6	Personality Development	*HSS Elective	3	0	0	3	
7	20EC7S1	*Mini projects	SAC/SSC*	1	0	2	2	
		*RDBMS						
Industrial/Research Internship 2 Months (Mandatory) after third year (to be evaluated during VII semester)							3	
<b>TOTAL CREDITS</b>							<b>23</b>	
Honors/Minor courses				MOOCs/EDX	3	0	2	4

**IV YEAR II SEMESTER:**

S.NO	SUB CODE	COURSE TITLE	CATEGORY	L	T	P	CREDITS
1	20EC8 PROJ	Project, Project work, seminar and internship in industry	Major Project	0	0	0	12
<b>TOTAL CREDITS</b>							<b>12</b>

Total Credits:- 21.5+21.5+21.5+21.5+23+12=121 (3<sup>rd</sup> sem to 8<sup>th</sup> sem)

*EKL*  
Prepared

*[Signature]*  
Chairman

*[Signature]*  
Member(s)  
*Heena*





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**DEPARTMENT OF CIVIL ENGINEERING**

**V-SEM- III Year**

Sl.No	Subcode	Course Title	Hours per week			Credits
			L	T	P	
1	20CE5T1	Concrete Technology	3	0	0	3
2	20CE5T2	Structural Analysis -II	3	0	0	3
3	20CE5T3	Transportation Engineering -II	3	0	0	3
4	20OE5T4	Open Elective-I (Groundwater Development)	2	0	2	3
5	20PE5T5	Professional Elective -I (Design and Drawing Reinforced Concrete Structure)	3	0	0	3
6	20CE5L1	Concrete Technology Lab	0	0	3	1.5
7	20CE5L2	Transportation Engineering Lab	0	0	3	1.5
8	20SO5T6A 20SO5T6B 20SO5T6C 20SO5T6D 20SO5T6E	1.Web and Mobile Development-3 2.Cloud Computing-3 3.Cyber Security-3 4.Data Analyst-3 5. Computer Aided Drawing -2	1	0	2	2
9	20MC5T7	Professional Ethics & Human Values	2	0	0	
10	20SI5L7	Summer Internship	0	0	0	1.5
11		Total				21.5

Sl.No	Category	Course Code	Total Credits
1	Professional Core Course	PCC,PCC Lab	12
2	Professional Elective Course	PEC	3
3	Open Elective Course	OEC	3
4	Skill Oriented Course	SOC	2
5	Summer Internship	SI	1.5
		Total Credits	21.5





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**DEPARTMENT OF CIVIL ENGINEERING**

**VI-SEM- III Year**

Sl.No	Subcode	Course Title	Hours per week			Credits
			L	T	P	
1	20CE6T1	Geotechnical Engineering	3	0	0	3
2	20CE6T2	Water Resource Engineering -I	3	0	0	3
3	20CE6T3	Environmental Engineering	3	0	0	3
4	20PE6T4	Professional Elective -II (Design and Drawing Steel Structure)	3	0	0	3
5	20OE6T5	Open Elective-II (Traffic Engineering)	2	0	2	3
6	20CE6L1	Computer Aided Drawing Lab	0	0	3	1.5
7	20CE6L2	Environmental Engineering Lab	0	0	3	1.5
8	20CE6L3	Geotechnical Engineering Lab	0	0	3	1.5
9	20SO6T6A	1.Web and Mobile Development-4	1	0	2	2
	20SO6T6B	2.Cloud Computing-4				
	20SO6T6C	3.Cyber Security-4				
	20SO6T6D	4.Data Analyst-4				
	20SO6T6E	5.Green Building				
10	20MC6T7	Employability Skills	2	0	0	
Total Credits						21.5

Industrial/Research Internship (Mandatory) 2 Months during summer vacation

Sl.No	Category	Course Code	Total Credits
1	Professional Core Course	PCC,PCC Lab	13.5
2	Professional Elective Course	PEC	3
3	Open Elective Course	OEC	3
4	Skill Oriented Course	SOC	2
Total Credits			21.5



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**VII-SEM- IV Year**

Sl.No	Category	Course Title	Hours per week			Credits
			L	T	P	
1	20PE7T1	Professional Elective -III (Construction Technology and Management)	3	0	0	3
2	20PE7T2	Professional Elective -IV (Estimation Specification and Contract)	3	0	0	3
4	20PE7T3	Professional Elective -V (Water Resource Engineering-II)	3	0	0	3
5	20OE7T4	Open Elective-III (Prestressed Concrete)	2	0	2	3
6	20OE7T5	Open Elective-4 (Solid and Hazardous waste Management)	2	0	2	3
7	20MC7T6	IPR & Patents	3	0	0	3
8	20SO7T7A	1.Web and Mobile Development-5	1	0	2	2
	20SO7T7B	2.Cloud Computing-5				
	20SO7T7C	3.Cyber Security-5				
	20SO7T7D	4.Data Analyst-5				
	20SO7T7E	5.Advanced Foundation Engineering				
9	20RI7L1	Research Internship	0	0	0	3
Total Credits						23

Sl.No	Category	Course Code	Total Credits
1	Professional Elective Course	PEC	9
2	Open Elective Course	OEC	6
3	Humanities and Science	HS	3
4	Skill Oriented Course	SOC	2
5	Research Internship	RI	3
Total Credits			23



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**DEPARTMENT OF CIVIL ENGINEERING****VIII-SEM- IV Year**

Sl.No	Category	Course Title	Hours per week			Credits
			L	T	P	
1	20MP8P1	Main Project (Data Processing, Report Writing and MOOC)	0	0	0	12

**Professional Electives**

Sl.No	Professional Elective -I	Sl.No	Professional Elective -II
1	Design and Drawing Reinforced Concrete Structure	1	Design and Drawing Steel Structure
2	Earthquake Resistance Design	2	Matrix analysis of structures
3	Theory of Elasticity	3	Structural Dynamics
4	Finite Element Methods	4	Sub Structure Design
Sl.No	Professional Elective -III	Sl.No	Professional Elective -IV
1	Construction Technology and Management	1	Estimation Specification and Contract
2	Experimental Stress Analysis	2	Theory of plates and shells
3	Repair and Rehabilitation of structure	3	Industrial structures
4	Stability of structures	4	Earth Retaining Structure
Sl.No	Professional Elective -V		
1	Water Resource Engineering-II		
2	Spatial Data Analysis		
3	Analysis and Design of tall building		
4	Advanced Pavement Design		

**Open Electives**

Open Elective-I		Open Elective-II	
1	Ground water Development	1	Advanced Structural Analysis
2	Ground Improvement Techniques	2	Advanced Transportation
3	Tall Building	3	Environmental Impact Assessment
4	Advanced Hydrology	4	Traffic Engineering
Open Elective-III		Open Elective-IV	
1	Bridge Engineering	1	Plastic analysis and design



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Recognized by UGC under 2(f) & 12(B) of 1956 Act,  
ISO 9001:2015 Certified Institution, Accredited by NAAC "A" Grade,  
Paritala, Kanchikacherla, Krishna Dist, Andhra Pradesh- 521180.  
www.amritasai.edu.in, Phone: 0866 2428399.



**DEPARTMENT OF CIVIL ENGINEERING**

2	Soil Dynamics and Foundation	2	Solid Hazardous waste management
3	Prestressed Concrete	3	Waste Water Management
4	Water Resource system planning	4	Pavement Analysis and Design



## B. Tech. Course Structure – Mechanical Engineering - AR20 Regulation

### Semester I (First year)

SNO	CATEGORY	SUB CODE	COURSE TITLE	L	T	P	CREDITS
1	BSC	20BS1T1	ENGINEERING PHYSICS	3	0	0	3
2	BSC	20BS1T2	ORDINARY DIFFERENTIAL EQUATIONS AND CALCULUS	3	0	0	3
3	ESC	20ES1T3	ELECTRICAL CIRCUIT ANALYSIS	3	0	0	3
4	ESC	20ES1T4	C PROGRAMMING	3	0	0	3
5	ESC	20ES1T5	ENGINEERING GRAPHICS AND DESIGN	1	0	4	3
6	BSC	20BS1L1	ENGINEERING/APPLIED PHYSICS LAB	0	0	3	1.5
7	ESC	20ES1L2	C PROGRAMMING LAB	0	0	3	1.5
8	ESC	20ES1L3	ENGINEERING WORKSHOP & ITWS LAB	0	0	3	1.5
9	MC	20MC1T6	ENVIRONMENTAL STUDIES	2	0	0	0
TOTAL CREDITS							19.5

Category	CREDITS
Basic Science course	7.5
Engineering Science Courses	7.5
Humanities and social science	4
<b>TOTAL CREDITS</b>	<b>19.5</b>

### Semester II (First year)

S.NO	CATEGORY	SUB CODE	COURSE TITLE	L	T	P	CREDITS
1	HSMC	20HS2T1	COMMUNICATIVE ENGLISH-I	3	0	0	3
2	BSC	20BS2T2	LINEAR ALGEBRA & TRANSFORMATIONS	3	0	0	3
3	BSC	20BS2T3	ENGINEERING CHEMISTRY	3	0	0	3
4	ESC	20ES2T4	PYTHON PROGRAMMING	3	0	0	3
5	ESC	20ES2T5	ENGINEERING MECHANICS	3	0	0	3
6	HSMC	20HS2L1	COMMUNICATIVE ENGLISH LAB	0	0	3	1.5
7	BSC	20BS2L2	ENGINEERING CHEMISTRY LAB	0	0	3	1.5
8	ESC	20ES2L3	PYTHON LAB	0	0	3	1.5
TOTAL CREDITS							19.5

Category	CREDITS
Basic Science course	7.5
Engineering Science Courses	12
<b>TOTAL CREDITS</b>	<b>19.5</b>

### Semester III (Second year)

S.NO	CATEGORY	SUB CODE	COURSE TITLE	L	T	P	CREDITS
1	BSC	20BS3T1	NUMERICAL METHODS AND COMPLEX VARIABLES	3	0	0	3
2	PCC-ME	20ME3T2	MATERIALS ENGINEERING	3	0	0	3
3	PCC-ME	20ME3T3	THERMO DYNAMICS	3	0	0	3

4	PCC-ME	20ME3T4	MECHANICS OF SOLIDS	3	0	0	3
5	PCC-ME	20ME3T5	FLUID MECHANICS & HYDRAULIC MACHINES	3	0	0	3
6	PCC-LAB-1	20ME3L1	COMPUTER AIDED ENGINEERING GRAPHICS PRACTICE	0	0	3	1.5
7	PCC-LAB 2	20ME3L2	MECHANICS OF SOLIDS& MATERIALS ENGINEERING LAB	0	0	3	1.5
8	PCC-LAB-3	20ME3L3	FLUID MECHANICS & HYDRAULIC MACHINES LAB	0	0	3	1.5
10	SKILL ORIENTED COURSE	20ME3S1	INDUSTRIAL APPLICATIONS OF CAD-I	1	0	2	2
			CLOUD COMPUTING-I				
			WEB & MOBILE DEVELOPMENT-I				
			CYBER SECURITY-I				
			DATA ANALYTICS-I				
11	MANDATORY COURSE (AICTE SUGGESTED)	20MC3T6	CONSTITUTION OF INDIA	2	0	0	0
<b>TOTAL CREDITS</b>							21.5

Category	CREDITS
Basic Science course	3
Professional core Courses	16.5
Skill oriented course*	2
<b>TOTAL CREDITS</b>	<b>21.5</b>

#### Semester IV (Second year)

S.NO	CATEGORY	SUB CODE	COURSE TITLE	L	T	P	CREDITS
1	BSC	20BS4T1	PROBABILITY AND STATISTICS	3	0	0	3
2	ESC	20ME4T2	MANUFACTURING PROCESSES	3	0	0	3
3	PCC-ME	20ME4T3	DESIGN OF MACHINE MEMBERS-I	3	0	0	3
4	PCC-ME	20ME4T4	APPLIED THERMO DYNAMICS	3	0	0	3
5	HSS	20HS4T5	COMMUNICATIVE ENGLISH--II	3	0	0	3
6	ESC-LAB	20ME4L1	ELECTRICAL CIRCUITS LAB	0	0	3	1.5
7	PCC-LAB	20ME4L2	THERMAL ENGINEERING LAB	0	0	3	1.5
8	PCC-LAB	20ME4L3	MANUFACTURING PROCESSES LAB	0	0	3	1.5
9	SKILL ORIENTED COURSE	20ME4S2	INDUSTRIAL APPLICATIONS OF CAD-II	1	0	2	2
			CLOUD COMPUTING-II				
			WEB & MOBILE DEVELOPMENT-II				
			CYBER SECURITY-II				
			DATA ANALYTICS-II				
<b>TOTAL CREDITS</b>							21.5

#### Internship 2 Months (Mandatory) during summer vacation

Category	CREDITS
Basic Science Courses	3
Professional core Courses	9
Engineering Science Courses	4.5



<b>Skill oriented course*</b>	2
Humanities and Social Sciences	3
<b>TOTAL CREDITS</b>	<b>21.5</b>

**Semester V (Third year)**

S.NO	CATEGORY	SUB CODE	COURSE TITLE	L	T	P	CREDITS
1	PCC-ME	20ME5T1	DESIGN OF MACHINE MEMBERS-II	3	0	0	3
2	PCC-ME	20ME5T2	KINEMATICS & THEORY OF MACHINES	3	0	0	3
3	PCC-ME	20ME5T3	MANUFACTURING TECHNOLOGY	3	0	0	3
4	OEC-1	20OE5T4	OPEN ELECTIVE-1	2	0	2	3
5	PEC-ME-1	20ME5T5	ELECTIVE-1	3	0	0	3
6	PCC-LAB	20ME5L1	MANUFACTURING TECHNOLOGY LAB	0	0	3	1.5
7	PCC-LAB	20ME5L2	THEORY OF MACHINES LAB	0	0	3	1.5
8	SKILL ORIENTED COURSE	20ME5S3	ADVANCED ENGLISH COMMUNICATION TESTING	1	0	2	2
9	MANDATORY COURSE (AICTE SUGGESTED)	20MC5T6	IPR & PATENTS	2	0	0	0
<b>Summer Internship 2 Months (Mandatory) after second year (to be evaluated during V semester)</b>				0	0	0	1.5
<b>TOTAL CREDITS</b>							<b>21.5</b>

Category	CREDITS
Professional core Courses	12
Professional Elective courses	3
Open Elective Course/Job oriented elective	3
Skill advanced course/ soft skill course*	2
Summer Internship	1.5
<b>TOTAL CREDITS</b>	<b>21.5</b>

**Semester VI (Third year)**

S.NO	CATEGORY	SUB CODE	COURSE TITLE	L	T	P	CREDITS
1	PCC-ME	20ME6T1	INSTRUMENTATION & CONTROL SYSTEMS	3	0	0	3
2	PCC-ME	20ME6T2	ENGINEERING METROLOGY	3	0	0	3
3	PCC-ME	20ME6T3	HEAT TRANSFER	3	0	0	3
4	PEC-ME-2	20ME6T4	ELECTIVE-2	3	0	0	3
5	OEC-2	20OE6T5	OPEN ELECTIVE-2	2	0	2	3

6	PCC-LAB	20ME6L1	HEAT TRANSFER LAB	0	0	3	1.5
7	PCC-LAB	20ME6L2	METROLOGY & INSTRUMENTATION LAB	0	0	3	1.5
	PCC-LAB	20ME6L3	SIMULATION LAB	0	0	3	1.5
8	SKILL ORIENTED COURSE	20ME6S4	CODING & TECHNICAL TRAINING	1	0	2	2
9	MANDATORY COURSE (AICTE SUGGESTED)	20MC6T6	PROFESSIONAL ETHICS & HUMAN VALUES	2	0	0	0
TOTAL CREDITS							21.5

**INDUSTRIAL/RESEARCH INTERNSHIP (MANDATORY) 2 MONTHS DURING SUMMER VACATION**

Category	CREDITS
Professional core courses	13.5
Professional Elective courses	3
Open Elective Course/Job oriented elective	3
Skill advanced course/ soft skill course*	2
Mandatory course (AICTE)	0
Industrial/Research Internship (Mandatory) 2 Months	-
<b>TOTAL CREDITS</b>	<b>21.5</b>

**Semester VII (Fourth year)**

S.NO	CATEGORY	SUB CODE	COURSE TITLE	L	T	P	CREDITS
1	PEC-ME-3	20ME7T1	ELECTIVE-3	3	0	0	3
2	PEC-ME-4	20ME7T2	ELECTIVE-4	3	0	0	3
3	PEC-ME-5	20ME7T3	ELECTIVE-5	3	0	0	3
4	OEC-3	20OE7T4	OPEN ELECTIVE-3	2	0	2	3
5	OEC-4	20OE7T5	OPEN ELCTIVE-4	2	0	2	3
6	HSS	20HS7T6	OPERATIONS RESEARCH	3	0	0	3
7	SKILL ORIENTED COURSE	20ME7S5	VERBAL QUANTITATIVE & REASONING TESTING	1	0	2	2
Industrial/Research Internship 2 Months (Mandatory) after third year (to be evaluated during VII semester				0	0	0	3
TOTAL CREDITS							23



Category	CREDITS
Professional Elective courses	9
Open Elective Course/Job oriented elective	6
Humanities and Social Science Elective	3
Skill advanced course/ soft skill course*	2
Industrial/Research Internship	3
<b>TOTAL CREDITS</b>	<b>23</b>

**Semester VIII (Fourth year)**

Sl. No.	Category	Code	Course Title	Hours per week			Credits
1	MAJOR PROJECT	20ME8P1	PROJECT WORK, SEMINAR AND INTERNSHIP IN INDUSTRY	0	0	0	12
<b>Total credits</b>							<b>12</b>

**L-LECTURE; T-TUTORIAL; P-PRACTICAL; C-CREDITS;**

**ONE LECTURE/TUTORIAL INSTRUCTIONAL SPAN IS 50 MINUTES**

**TOTAL COURSE CREDITS → 19.5+19.5+21.5+21.5+21.5+21.5+23+12 = 160**

**ELECTIVE-1**

1. QUALITY & RELIABILITY ENGINEERING
2. MACHINE TOOL DESIGN
3. AUTOMATION IN MANUFACTURING
4. ALTERNATIVE SOURCES OF ENERGY
5. SWAYAM/MOOCs NPTEL

**ELECTIVE-2**

6. CAD/CAM
7. SOLAR ENERGY
8. IC ENGINES & GAS TURBINES
9. COMPOSITE MATERIALS
10. SWAYAM/MOOCs NPTEL

**ELECTIVE-3**

11. AUTOMATION IN MANUFACTURING
12. REFRIGERATION & AIR CONDITIONING
13. UNCONVENTIONAL MACHINING PROCESSES
14. QUALITY & RELIABILITY ENGINEERING
15. SWAYAM/MOOCs NPTEL

**ELECTIVE-4**

16. MECHANICAL VIBRATIONS
17. INDUSTRIAL ROBOTICS
18. PRODUCTION PLANNING & CONTROL
19. DESIGN FOR MANUFACTURE
20. SWAYAM/MOOCs NPTEL

**ELECTIVE-5**

21. GAS DYNAMICS & JET PROPULSION
22. NON-DESTRUCTIVE EVALUATION
23. ADDITIVE MANUFACTURING
24. OPTIMIZATION TECHNIQUES
25. SWAYAM/MOOCs NPTEL

## DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

### COURSE STRUCTURE FOR AR20 REGULATION

#### I YEAR I SEMESTER:

SNO	SUB CODE	COURSE TITLE	CATEGORY	L	T	P	CREDITS
1	20BS1T1	Engineering Physics	BSC	3	0	0	3
2	20BS1T2	Ordinary Differential Equations & Calculus	BSC	3	0	0	3
3	20ES1T3	Electrical Circuit Analysis-I	ESC	3	0	0	3
4	20ES1T4	C Programming	ESC	3	0	0	3
5	20ES1T5	Engineering Graphics And Design	ESC	1	0	4	3
6	20BS1L1	Engineering/Applied Physics Lab	BSL	0	0	3	1.5
7	20ES1L2	C Programming Lab	ESL	0	0	3	1.5
8	20ES1L3	Engineering workshop & ITWS Lab	ESL	0	0	3	1.5
9	20MC1T6	Environmental Studies	MC	2	0	0	0
<b>TOTAL CREDITS</b>							<b>19.5</b>

#### I YEAR II SEMESTER:

S.NO	SUB CODE	COURSE TITLE	CATEGORY	L	T	P	CREDITS
1	20HS2T1	Communicative English-I	BSC	3	0	0	3
2	20BS2T2	Linear Algebra & Transformations	BSC	3	0	0	3
3	20BS2T3	Engineering Chemistry	ESC	3	0	0	3
4	20ES2T4	Python Programming	ESC	3	0	0	3
5	20ES2T5	Engineering Mechanics	ESC	3	0	0	3
6	20HS2L1	Communicative English Lab	BSL	0	0	3	1.5
7	20BS2L2	Engineering Chemistry Lab	ESL	0	0	3	1.5
8	20ES2L3	Python Lab	ESL	0	0	3	1.5
<b>TOTAL CREDITS</b>							<b>19.5</b>

#### II YEAR I SEMESTER:

SNO	SUB CODE	COURSE TITLE	CATEGORY	L	T	P	CREDITS
1	20BS3T1	Numerical Methods & Complex Variables	BSC	3	0	0	3
2	20EE3T2	Electrical Circuit Analysis - II	PCC	3	0	0	3
3	20EE3T3	Electrical Machines-I	PCC	3	0	0	3
4	20BE3T4	Electronic Devices & Circuits	PCC	3	0	0	3
5	20EE3T5	Power Systems-I	PCC	3	0	0	3
6	20EE3L1	Electrical Circuits Laboratory	PCL	0	0	3	1.5
7	20EE3L2	Electrical Machines-I Laboratory	PCL	0	0	3	1.5
8	20EE3L3	Electronic Devices & Circuits Laboratory	PCL	0	0	3	1.5
9	20EE3S1	Electrical Safety	SOC	1	0	2	2
10	20EE3MC1	Essence of Indian Traditional Knowledge	MC	2	0	0	0
<b>TOTAL CREDITS</b>							<b>21.5</b>

#### II YEAR II SEMESTER:

SNO	SUBCODE	COURSE TITLE	CATEGORY	L	T	P	CREDITS
1	20EE4T1	Electromagnetic Fields	ESC	3	0	0	3



2	20EE4T2	Control Systems	PCC	3	0	0	3
3	20EE4T3	Power Systems-II	PCC	3	0	0	3
4	20EE4T4	Electrical Machines-II	PCC	3	0	0	3
5	20HS4T5	Communicative English-II	HSC	3	0	0	3
6	20EE4L1	Communicative English-II Lab	HSL	0	0	3	1.5
7	20EE4L2	Electrical Machines-II Laboratory	PCL	0	0	3	1.5
8	20EE4L3	Control Systems Lab	PCL	0	0	3	1.5
9	20EE4S1	Robotics And Humanoids	SOC	1	0	2	2
<b>TOTAL CREDITS</b>							<b>21.5</b>
<b>Internship 4 weeks to 8 weeks (Mandatory) during summer vacation</b>							

### III YEAR I SEMESTER:

SNO	SUB CODE	COURSE TITLE	CATEGORY	L	T	P	CREDITS
1	20EE5T1	Electrical Measurements & Instrumentation	PCC	3	0	0	3
2	20EE5T2	Pulse & Digital Circuits	PCC	3	0	0	3
3	20EE5T3	Power Electronics & Converters	PCC	3	0	0	3
4	20EE5T4	Open Elective-I	OEL	3	0	0	3
5	20EE5T5	Elective-I	PEL	3	0	0	3
6	20EE5L1	Electrical Measurements & Instrumentation Lab	PCL	0	0	3	1.5
7	20EE5L2	Power Electronics & Converters Lab	PCL	0	0	3	1.5
8	20EE5S1	Advanced English Communication Training	SOC	1	0	2	2
9	20EE5MC1	Constitution of India	MC	2	0	0	0
Summer Internship 4 weeks to 8 weeks (Mandatory) After Second Year (To Be Evaluated During V Semester)				0	0	0	1.5
<b>TOTAL CREDITS</b>							<b>21.5</b>

### III YEAR II SEMESTER:

SNO	SUB CODE	COURSE TITLE	CATEGORY	L	T	P	CREDITS
1	20EE6T1	Micro Processor & Micro Controllers	PCC	3	0	0	3
2	20EE6T2	Linear And Digital Integrated Circuit Applications	PCC	3	0	0	3
3	20EE6T3	Power System Analysis	PCC	3	0	0	3
4	20EE6T4	Elective-II	PEL	3	0	0	3
5	20EE6T5	Open Elective-II	OEL	3	0	0	3
6	20EE6L1	Power Systems & Simulation Lab	PCL	0	0	3	1.5
7	20EE6L2	Micro Processor & Micro Controllers Lab	PCL	0	0	3	1.5
8	20EE6L3	Linear And Digital I C Applications Lab	PCL	0	0	3	1.5
9	20EE6S1	Coding & Technical Training	SOC	1	0	2	2
10	20EE6MC1	Research Methodology	MC	2	0	0	0
<b>TOTAL CREDITS</b>							<b>21.5</b>
<b>Industrial/Research Internship (Mandatory) 4 weeks to 8 weeks During Summer Vacation</b>							

### IV YEAR I SEMESTER:

SNO	SUB CODE	COURSE TITLE	CATEGORY	L	T	P	CREDITS
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1	20EE7T1	ELECTIVE-III	PEL	3	0	0	3
2	20EE7T2	ELECTIVE-IV	PEL	3	0	0	3
3	20EE7T3	ELECTIVE-V	PEL	3	0	0	3
4	20EE7T4	OPEN ELECTIVE-III	OEL	3	0	0	3
5	20EE7T5	OPEN ELECTIVE-IV	OEL	3	0	0	3
6	20EE7T6	HUMANITIES AND SOCIAL SCIENCE ELECTIVE	HSL	3	0	0	3
7	20EE7S1	VERBAL, QUANTATIVE & REASONING TRAINING	SOC	1	0	2	2
Summer Internship 4 weeks to 8 weeks (Mandatory) After Third Year (To Be Evaluated During VII Semester)				0	0	0	3
<b>TOTAL CREDITS</b>							<b>23</b>

#### IV YEAR II SEMESTER:

SNO	SUB CODE	COURSE TITLE	CATEGORY	L	T	P	CREDITS
1	20EE8P1	MAJOR PROJECT	PROJECT	0	0	0	12
<b>TOTAL CREDITS</b>							<b>12</b>

#### ELECTIVE-I:

- SIGNALS & SYSTEMS
- COMMUNICATION SYSTEMS
- COMPUTER NETWORKS
- INTERNET OF THINGS APPLICATIONS TO ELECTRICAL ENGINEERING
- VLSI DESIGN
- RENEWABLE ENERGY SOURCES
- ELECTRICAL ESTIMATION & COSTING

#### ELECTIVE-II:

- UTILIZATION OF ELECTRICAL ENERGY
- DATA BASE MANAGEMENT SYSTEMS
- ADVANCED CONTROL SYSTEMS
- ELECTRICAL MACHINE DESIGN
- HYBRID ELECTRIC VEHICLES
- OPTIMIZATION TECHNIQUES

#### ELECTIVE-III:

- OPERATING SYSTEMS
- NEURAL NETWORKS & FUZZY LOGIC
- HIGH VOLTAGE ENGINEERING
- ENERGY AUDITING, CONSERVATION & MANAGEMENT
- BATTERY MANAGEMENT SYSTEMS & CHARGING STATIONS

#### ELECTIVE-IV:

- ELECTRICAL DISTRIBUTION SYSTEMS PLANNING & AUTOMATION
- HVAC & DC TRANSMISSION
- FLEXIBLE ALTERNATING CURRENT TRANSMISSION SYSTEMS
- POWER QUALITY
- SMART GRID
- SPECIAL ELECTRICAL MACHINES

**ELECTIVE-V:**

- POWER SYSTEMS OPERATIONS & CONTROL
- SWITCHED MODE POWER CONVERTERS & SUPPLIES
- AI APPLICATIONS TO ELECTRICAL ENGINEERING
- SWITCH GEAR & PROTECTION

**OPEN ELECTIVE-I:**

**OPEN ELECTIVE-II:**

**OPEN ELECTIVE-III:**

**OPEN ELECTIVE-IV:**

**HUMANITIES AND SOCIAL SCIENCE ELECTIVE**

- 22HS7E1 – PROFESSIONAL ETHICS & HUMAN VALUES
- 22HS7E2 – UNDERSTANDING HARMONY
- 22HS7E3 – IPR & PATENTS
- 22HS7E4 – MANAGERIAL ECONOMICS & FINANCIAL ANALYSIS



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[www.amritasai.edu.in](http://www.amritasai.edu.in), 0866 2428399



M-TECH (VLSI & ES)

C-  
I-5 = sub

**I Semester**

S. No.	Sub Code	Name of the Subject	L	T	P	C
1	20VLES1T1	Digital System Design	3	0	-	3
2	20VLES1T2	VLSI Technology and Design	3	0	-	3
3	20VLES1T3	CMOS Analog IC Design	3	0	-	3
4	20VLES1T4	Advanced Microcontrollers and Programmable Digital Signal Processors	3	0	-	3
5	20VLES1T5A	<b>Elective I</b> 1. Embedded -C 2. CMOS Digital IC Design 3. Soft Computing Techniques 4. Cyber Security	3	0	-	3
	20VLES1T5B					
	20VLES1T5C					
	20VLES1T5D					
6	20VLES1T6A	<b>Elective II</b> 1. Advanced Operating Systems 2. System on Chip Design 3. Network Security and Cryptography	2	0	0	2
	20VLES1T6B		3	0	-	3
	20VLES1T6C					
7	20VLES1L1	VLSI Laboratory	-	0	3	2
8	20VLES1A1	Audit Course-1	2	0	0	0
<b>Total Credits</b>						20

**II Semester**

S.No.	Sub Code	Name of the Subject	L	P	C	
1	20VLES2T1	Embedded System Design	4	-	3	
2	20VLES2T2	CMOS Mixed Signal Circuit Design	4	-	3	
3	20VLES2T3	Embedded Real Time Operating Systems	4	-	3	
4	20VLES2T4	Design For Testability	4	-	3	
5	20VLES2T5A	<b>Elective III</b> 1. DSP Processors & Architectures 2. Low Power VLSI Design 3. VLSI Signal Processing	4	-	3	
	20VLES2T5B					
	20VLES2T5C					
6	20VLES2T6A	<b>Elective IV</b> 1. Micro Electro Mechanical Systems (MEMS) Design 2. CPLD and FPGA Architectures and Applications 3. Semiconductor Memory Design and Testing	-	-	4	2
	20VLES2T6B		4	-	3	
	20VLES2T6C					
7	20VLES2L1	Embedded System Design Laboratory	-	3	2	
8	20VLES2A1	Audit Course-2	2	0	0	
<b>Total Credits</b>						20

SKL

RF

Head of the Department  
Electronics and Communication Engineering  
Amrita Sai Institute of Science and Technology  
PARITALA (Paritala), Kakinada (M),  
Krishna District, Andhra Pradesh - 521 180

MEMBER(S)  
He





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S-2

### III Semester

### M.Tech (VLSI & ES)

S. No.	Subject	L	T	P	Credits
1	20VLES3T1A 20VLES3T1B 20VLES3T1C	3	0	0	3
	1. IOT and its Applications ✓ 2. Artificial Intelligence 3. Hardware Software Co-Design				
2	20VLES3T2A 20VLES3T2B 20VLES3T2C 20VLES3T2D 20VLES3T2E 20VLES3T2F	3	0	0	3
	1. Business Analytics ✓ 2. Industrial Safety 3. Operations Research 4. Cost Management of Engineering Projects 5. Composite Materials 6. Waste to Energy				
3	20VLES3T3	2	0	0	2
	Research methodology and IPR ✓				
4	20VLES3P4	-	-	-	10
	Dissertation Phase -I /Industrial Project Work Part - I				
	<b>Total Credits</b>				<b>18</b>


### IV Semester

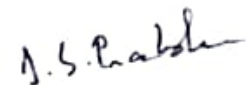
S. No.	Subject	L	T	P	Credits
1	20VLES4Proj	--	0	--	16
	Dissertation Phase -I /Industrial Project Work Part - II				
	<b>Total Credits</b>				<b>16</b>

\*Students going for Industrial Project/Thesis will complete these courses through MOOCs

#### Audit Course 1 & 2

1. English for Research Paper Writing ✓
2. Disaster Management
3. Sanskrit for Technical Knowledge
4. Value Education
5. Constitution of India ✓
6. Pedagogy Studies
7. Stress Management by Yoga
8. Personality Development through Life Enlightenment Skills

  
 Head of the Department  
 Electronics and Communication Engineering  
 Amrita Sai Institute of Science and Technology,  
 PARITALA (Post), Kanchikacharla (M),  
 Krishna District - P. O. 521 180

  
 MEMBER(S)  
 He...



# Amrita Sai Institute of Science and Technology (Autonomous)

Approved by AICTE, New Delhi; Permanently Affiliated to JNTUK, Kakinada  
Recognized by UGC under 2(f) & 12(B) of 1956 Act  
ISO 9001:2015 Certified Institution. Accredited by NAAC with 'A' grade  
Amrita Sai Nagar, Paritala, Krishna District, Andhra Pradesh - 521 180  
[www.amritasai.edu.in](http://www.amritasai.edu.in), 0866 2428399




## I Semester

S. No.	SUB CODE	Name of the Subject	L	T	P	C
1	22VLES1T1	RTL Simulation and Synthesis with PLDs	3	0	0	3
2	22VLES1T2	Microcontrollers and Programmable Digital Signal Processors	3	0	0	3
3	22VLES1T3	1. CMOS Digital IC Design 2. CAD of Digital System 3. VLSI signal processing	3	0	0	3
4	22VLES1T4	1. Programming Languages for Embedded Systems 2. System Design with Embedded Linux 3. Advanced Operating Systems	3	0	0	3
5	22VLES1T5	Research methodology and IPR	2	0	0	2
6	22VLES1L1	RTL Simulation and Synthesis with PLDs Lab	0	0	4	2
7	22VLES1L2	Microcontrollers and Programmable Digital Signal Processors Lab	0	0	4	2
8		Audit Course-1	2	0	0	0
TOTAL CREDITS						18

## II Semester

S. No.	SUB CODE	Name of the Subject	L	T	P	C
1	22VLES2T1	Analog and Digital CMOS VLSI Design	3	0	0	3
2	22VLES2T2	Real Time Operating Systems	3	0	0	3
3	22VLES2T3	1. Memory Architectures 2. SoC Design 3. Low power VLSI Design	3	0	0	3
4	22VLES2T4	1. Communication Buses and Interfaces 2. Network Security and Cryptography 3. Physical design automation	3	0	0	3
5	22VLES2L1	Analog and Digital CMOS VLSI Design Lab	0	0	4	2
6	22VLES2L2	Real Time Operating Systems Lab	0	0	4	2
7		Mini Project	0	0	4	2
8		Audit Course-2	2	0	4	0
TOTAL CREDITS						18

  
 Head of the Department  
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 Krishna District, A.P. - 521180



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## III Semester

S. No.	SUB CODE	Name of the Subject	L	T	P	C
1	22VLES3T1	1.IOT and its Applications 2.Artificial Intelligence 3. Hardware Software Co-Design	3	0	0	3
2	22VLES3T2	1.Business Analytics 2. Industrial Safety 3. Operations Research 4. Cost Management of Engineering Projects 5. Composite Materials 6. Waste to Energy	3	0	0	3
3	Dissertation	Dissertation Phase -I /Industrial Project (to be continued and evaluated next semester)	0	0	20	8
TOTAL CREDITS						14

## IV Semester

1 Dissertation Project/ Dissertation Phase-II (continued from III semester) 0 0 32 16 Total 16

S. No.	SUB CODE	Name of the Subject	L	T	P	C
1	Dissertation	Project/ Dissertation Phase-II (continued from III semester)	0	0	32	10
TOTAL CREDITS						10

\*Students going for Industrial Project/Thesis will complete these courses through MOOCs

## Audit Course 1& 2

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Head of the Department  
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Amrita sai Institute of Science and Technology  
PARITALA (Post), Kanchikacharla(M),  
Krishna District - P. 521180



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# AMRITA SAI INSTITUTE OF SCIENCE AND TECHNOLOGY (AUTONOMOUS)

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ACCREDITED BY NAAC WITH "A" GRADE



PARITALA(P), KANCHIKACHERLA(M), KRISHNA (D)-521 180(A. P.)

## DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS

### SEMESTER - I

S. No.	Subject Code	Subject Title	L	T	P	C	CE	SE	Tot
1	20MCA2301	Computer Organization	3	-	-	3	40	60	100
2	20MCA2302	Database Management Systems	3	1	-	4	40	60	100
3	20MCA2303	Object Oriented Programming through Java	3	1	-	4	40	60	100
4	20MCA2304	Operating Systems	3	1	-	4	40	60	100
5	20MCA2305	Web Design and Development	3	1	-	4	40	60	100
6	20MCA2351	Database Management Systems Lab	-	-	3	1.5	40	60	100
7	20MCA2352	Object Oriented Programming through Java Lab	-	-	3	1.5	40	60	100
8	20MCA2353	Web Design and Development Lab	-	-	3	1.5	40	60	100
9	20MCA5354	Personality Development Course (Logical Reasoning and English for Professionals)	-	-	2	0	100	-	100
			15	4	11	23.5	420	480	900

L: Lecture

T: Tutorial

P: Practical

C: Credits

CE: Continuous Evaluation

SE: Semester End Evaluation

Tot: Total Marks

PREPARED

CHAIRMAN

MEMBER(S)



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PARITALA(P), KANCHIKACHERLA(M), KRISHNA (D)-521 180(A. P.)

**DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS**

**SEMESTER - II**

S. No.	Subject Code	Subject Title	L	T	P	C	CE	SE	Tot
1	20MCA2401	Statistics with R	3	-	-	3	40	60	100
2	20MCA2402	Computer Networks	3	1	-	4	40	60	100
3	20MCA2403	Design and Analysis of Algorithms	3	1	-	4	40	60	100
4	20MCA2404	Mobile Application Development	3	1	-	4	40	60	100
5	20MCA2405	Industrial Management	3	-	-	3	40	60	100
6	20MCA2451	Statistics with R Lab	-	-	3	1.5	40	60	100
7	20MCA2452	Computer Networks Lab	-	-	3	1.5	40	60	100
8	20MCA2453	Mobile Application Development Lab	-	-	3	1.5	40	60	100
9	20MCA4454	Seminar	-	-	2	1	40	60	100
10	20MCA5455	Personality Development Course (Aptitude and Campus Recruitment Training)	-	-	2	0	100	-	100
			15	3	13	23.5	460	540	1000

L: Lecture

T: Tutorial

P: Practical

C: Credits

CE: Continuous Evaluation

SE: Semester End Evaluation

Tot: Total Marks

PREPARED

CHAIRMAN

MEMBER(S)

**I<sup>st</sup> YEAR****I-SEMESTER**

S.No	Course Code	course	Marks	L	T	P	C
1	20AJMB101	Management and Organizational Behavior	100	4	0	0	4
2	20AJMB102	Managerial Economics	100	4	0	0	4
3	20AJMB103	Accounting for Managers	100	4	0	0	4
4	20AJMB104	Quantitative Analysis for Business Decisions	100	4	0	0	4
5	20AJMB105	Legal and Business Environment	100	4	0	0	4
6	20AJMB106	Business Communication and Soft skills	100	2	0	2	4
7	20AJMB107 Open Elective	Cross Cultural Management Rural Innovation projects MOOCs : SWAYAM/NPTEL- Related to Management Courses other than listed courses in the syllabus	100	4	0	0	4
8	20AJMB108	Business Communication and Soft skills Lab	50	0	0	2	2
9	20AJMB109	Information Technology – Lab I(Spreadsheet and Tally)	50	0	0	2	2
<b>Total</b>			<b>800</b>	<b>28</b>	<b>0</b>	<b>2</b>	<b>32</b>

**II SEMESTER**

S.No	Course Code	Courses	Marks	L	T	P	C
1	20AJMB201	Financial Management	100	4	0	0	4
2	20AJMB202	Human Resource Management	100	4	0	0	4
3	20AJMB203	Marketing Management	100	4	0	0	4
4	20AJMB204	Operations Management	100	4	0	0	4
5	20AJMB205	Business Research Methods	100	4	0	0	4
6	20AJMB206 Open Elective	Project Management Technology Management Lean Management Database Management System	100	4	0	0	4
7	20AJMB207	IT-lab 2(Programming R)	50	0	0	2	2
<b>Total</b>			<b>650</b>	<b>24</b>	<b>0</b>	<b>2</b>	<b>26</b>



**II<sup>nd</sup> YEAR****III  
SEMESTER**

S.No	Course Code	Courses	Marks	L	T	P	C
1	20AJMB301	Strategic Management	100	4	0	0	4
2	20AJMB302	Operations Research	100	4	0	0	4
3	20AJMB3E1	Elective - 1	100	4	0	0	3
4	20AJMB3E2	Elective - 2	100	4	0	0	3
5	20AJMB3E3	Elective - 3	100	4	0	0	3
6	20AJMB3E4	Elective - 4	100	4	0	0	3
7	20AJMB303	Industrial Project based on Summer Internship	100	4	0	0	4
<b>Total</b>			<b>700</b>	<b>28</b>	<b>0</b>	<b>0</b>	<b>24</b>

**IV SEMESTER**

S.No	Course Code	Courses	Marks	L	T	P	C
1	20AJMB401	Supply Chain Management and Analytics	100	4	0	0	4
2	20AJMB402	Innovation and Entrepreneurship	100	4	0	0	4
3	20AJMB4E1	Elective - 5	100	4	0	0	3
4	20AJMB4E2	Elective - 6	100	4	0	0	3
5	20AJMB4E3	Elective - 7	100	4	0	0	3
6	20AJMB4E4	Elective - 8	100	4	0	0	3
7	20AJMB403	Comprehensive Viva- voce	50	0	0	0	2
<b>Total Marks / Credits</b>			<b>650</b>	<b>28</b>	<b>0</b>	<b>0</b>	<b>22</b>
			<b>2800</b>				<b>104</b>

\*Comprehensive Viva is to verify the student's knowledge as a whole from which he was studied during the two year course work.

### III SEMESTER

#### Human Resource Management

S. no	Course Code	SUBJECT TITLE
1	20AJMB3H1	Leadership and Change Management
2	20AJMB3H2	Performance Evaluation and Compensation Management
3	20AJMB3H3	Human Capital Management
4	20AJMB3H4	Manpower Planning, Recruitment, and Selection

### IV SEMESTER

#### Human Resource Management

S. no	Course Code	SUBJECT TITLE
5	20AJMB4H1	Labor Welfare and employment laws
6	20AJMB4H2	International HRM
7	20AJMB4H3	Employee Relations and Engagement
8	20AJMB4H4	Human Resources Development

### III SEMESTER FINANCE

S. no	Course Code	SUBJECT TITLE
1	20AJMB3F1	Investment Analysis and Portfolio Management
2	20AJMB3F2	Managing Banks and Financial Institutions
3	20AJMB3F3	Financial Markets and Services
4	20AJMB3F4	Taxation

### IV SEMESTER FINANCE

S. no	Course Code	SUBJECT TITLE
5	20AJMB4F1	Financial Derivatives
6	20AJMB4F2	Global Financial Management
7	20AJMB4F3	Financial Risk Management
8	20AJMB4F4	Strategic Financial Management

### III SEMESTER MARKETING

S. no	Course Code	SUBJECT TITLE
1	20AJMB3M1	Consumer Behavior
2	20AJMB3M2	Retail Management
3	20AJMB3M3	Customer Relationship Management
4	20AJMB3M4	Strategic Marketing Management

### IV SEMESTER MARKETING

S. no	Course Code	SUBJECT TITLE
5	20AJMB4M1	Services Marketing
6	20AJMB4M2	Promotional and Distribution Management
7	20AJMB4M3	Green Marketing
8	20AJMB4M4	Advertising and Brand Management

### III SEMESTER SYSTEMS

S. no	Course Code	SUBJECT TITLE
1	20AJMB3S1	Data Mining for Business Decisions
2	20AJMB3S2	Managing Software Projects
3	20AJMB3S3	Web Designing
4	20AJMB3S4	Business Analytics

### IV SEMESTER SYSTEMS

S. no	Course Code	SUBJECT TITLE
5	20AJMB4S1	Big Data Analytics
6	20AJMB4S2	Enterprise Resource Planning
7	20AJMB4S3	Cyber Laws & Security
8	20AJMB4S4	Information Systems Audit



# AR-20 CSE M.Tech



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### DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

#### I-SEMESTER

S.No	Course Code	Courses	Category	L	T	P	C
1	20CP1T1	<b>Program Core-1</b> Mathematical Foundations of Computer Science	PC	3	0	0	3
2	20CP1T2	<b>Program Core-2</b> Advanced Data Structures & Algorithms	PC	3	0	0	3
<b>Program Elective-1</b>							
3	20CP1T3A	1. Big Data Analytics	PE	3	0	0	3
	20CP1T3B	2. Digital Image Processing					
	20CP13C	3. Advanced Operating Systems					
<b>Program Elective-2</b>							
4	20CP1T4A	1. Advanced Computer Networks ✓	PE	3	0	0	3
	20CP1T4B	2. Internet of Things ✓					
	20CP1T4C	3. Object Oriented Software Engineering ✓					
5	20CP1C1	Research Methodology and IPR ✓	CC			0	2
6	20CP1L1	<b>Laboratory-1</b> Advanced Data Structures & Algorithms Lab	LB	0	0	4	2
7	20CP1L2	<b>Laboratory-2</b> Advanced Computing Lab	LB	0	0	4	2
8	20CP1A1	Audit Course-1* ✓	AC	2	0	0	0
<b>Total Credits</b>							18

\*Student has to choose any one audit course listed below.

#### II SEMESTER

S.No	Course Code	Courses	Cat	L	T	P	C
1	20CP2T1	(Program Core-3) Machine learning	PC	3	0	0	3
2	20CP2T2	(Program Core-4) MEAN Stack Technologies	PC	3	0	0	3
<b>Program Elective-3</b>							
3	20CP2T3A	Advanced Databases and Mining ✓	PE	3	0	0	3
	20CP2T3B	Ad Hoc & Sensor Networks ✓					
	20CP2T3C	Soft Computing ✓					
<b>Program Elective-4</b>							
4	20CP2T4A	1. Cloud Computing	PE	3	0	0	3
	20CP2T4B	2. Principles of computer security ✓					
	20CP2T4C	3. High Performance Computing ✓					
5	20CP2L1	<b>Laboratory-3</b> Machine Learning with python lab ✓	LB	0	0	4	2
6	20CP2L2	<b>Laboratory-4</b> MEAN Stack Technologies Lab ✓	LB	0	0	4	2
7		Mini Project with Seminar ✓	MP	2	0	0	2
8	20CP2A1	Audit Course-2* ✓	AC	2	0	0	0
<b>Total Credits</b>							18



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### DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

*\*Student has to choose any one audit course listed below.*

**Audit Course 1 & 2:**

- |                                       |  |
|---------------------------------------|--|
| 1. English for Research Paper Writing | 5. Constitution of India                                     |
| 2. Disaster Management                | 6. Pedagogy Studies  |
| 3. Sanskrit for Technical Knowledge   | 7. Stress Management by Yoga                                 |
| 4. Value Education III-               | 8. Personality Development through Life Enlightenment Skills |

SEMESTER

S.No	Course Code	Courses	Category	L	T	P	C
1	20CP3T1A	<b>Program Elective-5</b> 1. <b>Deep Learning</b> ✓	PE	3	0	0	3
	20CP3T1B	2. <b>Social Network Analysis</b> ✓					
	20CP3T1C	3. MOOCs-1 (NPTEL/SWAYAM) 12					
	20CP3T1D	4. <b>Week Program related to the programme which is not listed in the course structure</b> ✓					
2	20CP3T2A	<b>Open Elective</b> 1. MOOCs-2 (NPTEL/SWAYAM)-Any 12 Week Course on Engineering/ Management/ Mathematics offered by other than parent department	OE	3	0	0	3
	20CP3T2B	2. <b>Course offered by other departments in the college</b> ✓					
3	20CP3P1	<b>Dissertation-I/ Industrial Project #</b> ✓	PJ	0	0	20	10
<b>Total Credits</b>							16

*#Students going for Industrial Project/Thesis will complete these courses through MOOCs*

M. Tech. (CSE) IV SEMESTER							
S.No	Course Code	Courses	Category	L	T	P	C
1	20CP4P1	Dissertation-II	PJ	0	0	32	16
<b>Total Credits</b>							16

**Open Electives offered by the Department of CSE**

1. Python Programming
2. Principles of Cyber Security
3. Internet of Things
4. Machine Learning
5. Digital forensics
6. Next Generation Databases