



**MARRI LAXMAN REDDY**  
**INSTITUTE OF TECHNOLOGY AND MANAGEMENT**

(AN AUTONOMOUS INSTITUTION)

(Approved by AICTE, New Delhi & Affiliated to JNTUH, Hyderabad)

Accredited by NBA and NAAC with 'A' Grade & Recognized Under Section 2(f) & 12(B) of the UGC act, 1956

**B.Tech – Civil Engineering**  
**Course Structure (R20)**  
**Applicable From 2020-21 Admitted Batch**  
**Structure Breakup**

S.No	Category	Breakup of credits (Total 160 credits)
1	Humanities and Social Sciences including Management courses (HSMC)	10
2	Basic Sciences Courses (BS)	23
3	Engineering Sciences courses including Workshop, Drawing basics of electrical/mechanical/computer etc.(ES)	23
4	Professional Core courses (PC)	65
5	Professional Electives (PE)	18
6	Open Electives (OE)	9
7	Project work, Seminar and Internship in industry or elsewhere (PS)	12
8	Mandatory Courses	-
	<b>TOTAL</b>	<b>160</b>

**I YEAR I SEMESTER**

S. No.	Course Code	Course Title	Course Area	Hours Per Week			Credits	Scheme of Examination Maximum Marks		
				L	T	P		Internal (CIE)	External (SEE)	Total
1	2010001	Engineering Mathematics - I	BS	3	1	0	4	30	70	100
2	2010007	Engineering Physics	BS	3	1	0	4	30	70	100
3	2010501	Programming for Problem Solving	ES	3	1	0	4	30	70	100
4	2010072	Engineering Physics Lab	BS	0	0	3	1.5	30	70	100
5	2010571	Programming for Problem Solving Lab	ES	0	0	3	1.5	30	70	100
6	2010371	Engineering Drawing Practice	ES	1	0	4	3	30	70	100
7		Induction Programme		3 Weeks				-	-	-
<b>Total Credits</b>				<b>10</b>	<b>3</b>	<b>10</b>	<b>18</b>	<b>180</b>	<b>420</b>	<b>600</b>

**I YEAR II SEMESTER**

S. No.	Course Code	Course Title	Course Area	Hours Per Week			Credits	Scheme of Examination Maximum Marks		
				L	T	P		Internal (CIE)	External (SEE)	Total
1	2020002	Engineering Mathematics - II	BS	3	1	0	4	30	70	100
2	2020008	Engineering Chemistry	BS	3	1	0	4	30	70	100
3	2020111	Engineering Mechanics	PC	3	1	0	4	30	70	100
4	2020009	Communicative English	HSMC	2	0	0	2	30	70	100
5	2020372	Engineering Workshop	ES	1	0	3	2.5	30	70	100
6	2020073	Engineering Chemistry Lab	BS	0	0	3	1.5	30	70	100
7	2020074	Communicative English Lab	HSMC	0	0	2	1	30	70	100
8	2026665	Oops through C++	MC	0	2	0	0	-	-	-
9	2020021	Environmental Science	MC	3	0	0	0	-	-	-
<b>Total Credits</b>				<b>15</b>	<b>5</b>	<b>8</b>	<b>19</b>	<b>210</b>	<b>490</b>	<b>700</b>

**II YEAR I SEMESTER**

S. No.	Course Code	Course Title	Course Area	Hours Per Week			Credits	Scheme of Examination Maximum Marks		
				L	T	P		Internal (CIE)	External (SEE)	Total
1	2030112	Strength of Materials - I	PC	3	0	0	3	30	70	100
2	2030113	Surveying and Geomatics	PC	3	0	0	3	30	70	100
3	2030004	Probability and Statistics	BS	3	1	0	4	30	70	100
4	2030202	Basic Electrical and Electronics Engineering	ES	3	0	0	3	30	70	100
5	2030502	Data Structures	ES	3	0	0	3	30	70	100
6	2030171	Surveying Laboratory	PC	0	0	3	1.5	30	70	100
7	2030272	Basic Electrical and Electronics Engineering Laboratory	ES	0	0	2	1	30	70	100
8	2030572	Data Structures Laboratory	ES	0	0	2	1	30	70	100
9	2030022	Gender Sensitization	MC	2	0	0	0	-	-	-
<b>Total Credits</b>				<b>17</b>	<b>1</b>	<b>7</b>	<b>19.5</b>	<b>240</b>	<b>560</b>	<b>800</b>

**II YEAR II SEMESTER**

S. No.	Course Code	Course Title	Course Area	Hours Per Week			Credits	Scheme of Examination Maximum Marks		
				L	T	P		Internal (CIE)	External (SEE)	Total
1	2040114	Strength of Materials - II	PC	3	0	0	3	30	70	100
2	2040115	Building Materials, Construction and Planning	PC	3	0	0	3	30	70	100
3	2040116	Fluid Mechanics	PC	3	0	0	3	30	70	100
4	2040117	Structural Analysis - I	PC	3	0	0	3	30	70	100
5	2040118	Engineering Geology	PC	2	0	0	2	30	70	100
6	2040504	Python	ES	2	0	0	2	30	70	100
7	2040172	Strength of Materials Laboratory	PC	0	0	3	1.5	30	70	100
8	2040173	Computer Aided Civil Engineering Drawing Laboratory	PC	0	0	2	1	30	70	100
9	2040573	Python Laboratory	ES	0	0	2	1	30	70	100
<b>Total Credits</b>				<b>16</b>	<b>0</b>	<b>7</b>	<b>19.5</b>	<b>270</b>	<b>630</b>	<b>900</b>

**III YEAR I SEMESTER**

S. No.	Course Code	Course Title	Course Area	Hours Per Week			Credits	Scheme of Examination Maximum Marks		
				L	T	P		Internal (CIE)	External (SEE)	Total
1	2050119	Hydraulics and Hydraulic Machinery	PC	3	0	0	3	30	70	100
2	2050120	Structural Analysis - II	PC	3	0	0	3	30	70	100
3	2050121	Structural Engineering - I (RCC)	PC	3	1	0	4	30	70	100
4	-	Professional Elective - I	PE	3	0	0	3	30	70	100
5	2050010	Business Economics and Financial Analysis	HSMC	2	0	0	2	30	70	100
6	2050174	Fluid Mechanics and Hydraulic Machinery Laboratory	PC	0	0	3	1.5	30	70	100
7	2050175	Concrete Technology Laboratory	PC	0	0	3	1.5	30	70	100
8	2050176	Engineering Geology Laboratory	PC	0	0	2	1	30	70	100
9	2050191	Internship*	PS	0	0	2	1	30	70	100
10	2050177	Artificial Intelligence in Construction	MC	0	2	0	0	-	-	-
<b>Total Credits</b>				<b>14</b>	<b>3</b>	<b>10</b>	<b>20</b>	<b>270</b>	<b>630</b>	<b>900</b>

**III YEAR II SEMESTER**

S. No.	Course Code	Course Title	Course Area	Hours Per Week			Credits	Scheme of Examination Maximum Marks		
				L	T	P		Internal (CIE)	External (SEE)	Total
1	2060122	Hydrology & Water Resources Engineering	PC	3	0	0	3	30	70	100
2	2060123	Transportation Engineering	PC	3	0	0	3	30	70	100
3	2060124	Structural Engineering - II (Steel)	PC	3	0	0	3	30	70	100
4	2060125	Geotechnical Engineering - I	PC	3	0	0	3	30	70	100
5	-	Professional Elective - II	PE	3	0	0	3	30	70	100
6	-	Open Elective - I	OE	3	0	0	3	30	70	100
7	2060178	Geotechnical Engineering Laboratory	PC	0	0	3	1.5	30	70	100
8	2060179	Transportation Engineering Laboratory	PC	0	0	3	1.5	30	70	100
9	2060075	Advanced English Communication Skills Lab	HSMC	0	0	2	1	30	70	100
10	2060180	Machine Learning in Construction	MC	0	2	0	0	-	-	-
<b>Total Credits</b>				<b>18</b>	<b>2</b>	<b>8</b>	<b>22</b>	<b>270</b>	<b>630</b>	<b>900</b>

**\*Students have to complete internship in II Year- II Semester Summer break, Evaluation is carried in III-I semester.**

**IV YEAR I SEMESTER**

S. No.	Course Code	Course Title	Course Area	Hours Per Week			Credits	Scheme of Examination Maximum Marks		
				L	T	P		Internal (CIE)	External (SEE)	Total
1	2070126	Environmental Engineering	PC	3	0	0	3	30	70	100
2	2070127	Estimation, Quantity Surveying and Valuation	PC	3	0	0	3	30	70	100
3	2070011	Fundamentals of Management	HSMC	3	0	0	3	30	70	100
4	-	Professional Elective - III	PE	3	0	0	3	30	70	100
5	-	Professional Elective - IV	PE	3	0	0	3	30	70	100
6	-	Open Elective - II	OE	3	0	0	3	30	70	100
7	2070181	Environmental Engineering Laboratory	PC	0	0	2	1	30	70	100
8	2070182	Computer Aided Design Laboratory	PC	0	0	2	1	30	70	100
9	2070192	Industry Oriented Mini Project**	PS	0	0	4	2	100	0	100
<b>Total Credits</b>				<b>18</b>	<b>0</b>	<b>8</b>	<b>22</b>	<b>340</b>	<b>560</b>	<b>900</b>

**IV YEAR II SEMESTER**

S. No.	Course Code	Course Title	Course Area	Hours Per Week			Credits	Scheme of Examination Maximum Marks		
				L	T	P		Internal (CIE)	External (SEE)	Total
1	-	Professional Elective - V	PE	3	0	0	3	30	70	100
2	-	Professional Elective - VI	PE	3	0	0	3	30	70	100
3	-	Open Elective - III	OE	3	0	0	3	30	70	100
4	2080193	Technical Seminar	PS	0	0	2	1	30	70	100
5	2080194	Major Project	PS	0	0	20	10	30	70	100
<b>Total Credits</b>				<b>9</b>	<b>0</b>	<b>22</b>	<b>20</b>	<b>150</b>	<b>350</b>	<b>500</b>

**\*\*Students have to complete industry oriented mini project in III Year- II Semester Summer break, Evaluation is carried in IV-I semester.**

**PE I - Professional Elective I**

S.No	Course Code	Course Title
1	2050141	Concrete Technology
2	2050142	Structural Dynamics and Earthquake Engineering
3	2050143	Pre-Fabricated structures
4	2050144	Introduction to Offshore Structures

**PE II - Professional Elective II**

S.No	Course Code	Course Title
1	2060145	Construction Project Management
2	2060146	Industrial Waste water Treatment
3	2060147	Waste Management
4	2060148	Environmental Impact Assessment

**PEIII – Professional Elective III**

S.No	Course Code	Course Title
1	2070149	Bridge Engineering
2	2070150	Railway, Airport and Harbour Engineering
3	2070151	Traffic Engineering
4	2070152	Pavement Analysis and Design

**PE IV - Professional Elective**

S.No	Course Code	Course Title
1	2070153	Design of Hydraulic Structures
2	2070154	Water Shed Management
3	2070155	Water Supply Network
4	2070156	Ground Water Hydrology

**PE V - Professional Elective V**

S.No	Course Code	Course Title
1	2080157	Introduction to Finite Element Methods
2	2080158	Advanced Structural Design
3	2080159	Repair and Rehabilitation of Structures
4	2080160	Prestressed concrete structures

**PE VI - Professional Elective VI**

S.No	Course Code	Course Title
1	2080161	Foundation Engineering
2	2080162	Ground Improvement Techniques
3	2080163	Introduction to Composite Materials
4	2080164	Remote Sensing and GIS

Open Electives

<b>S.No</b>	<b>Course Code</b>	<b>Course Title</b>
1	Open Elective 1	2060101 - Air and Noise Pollution Control
2	Open Elective 2	2070102 - Remote Sensing and GIS
3	Open Elective 3	2080103 - Disaster Management