Course Name: B. Tech CE with Specialization in Smart Infrastructure Management

Course Structure

FIRST YEAR

SEMESTER I								
S. No	**Type**	**Course Code**	**Course Title**	**L**	**T**	**P**	**Contact Hrs/wk**	**Credits**
1	Theory	**SMA41101**	Engineering Mathematics-I	3	1	0	4	4
2	Theory		Applied Science	3	0	0	3	3
3	Theory	**ECS41101 / EEE41102**	Introduction to Programming / Electrical and Electronics Technology	3	0	0	3	3
4	Theory	**HEN41117**	HSSM –I (English Communication- I)	3	0	0	3	3
5	Theory	**/ SBT41108**	HSSM –II (Human Values & Ethics and Psychology) / Life Sciences	3	0	0	3	3
6	Practical		Applied Science Lab	0	0	3	3	2
7	Practical	**ECS41201 / EEE41202**	Programming Lab / Electrical and Electronics Technology Lab	0	0	3	3	2
8	Practical	**ECE41201/ EME41204**	Engineering Drawing and CAD/Engineering Workshop	0	0	3	3	2
9	Practical	**EMC41201**	Communication and Collaboration Skill –I	0	0	2	2	1
10	Practical		Avant Garde Project-I	0	0	2	2	1
			Total	**15**	**1**	**13**	**29**	**24**

SEMESTER II								
S. No	**Type**	**Course Code**	**Course Title**	**L**	**T**	**P**	**Contact Hrs/wk**	**Credits**
1.	Theory	**SMA41102**	Engineering Mathematics– II	3	1	0	4	4
2.	Theory	**EEE41102 /ECS41101**	Electrical and Electronics Technology/ Introduction to Programming	3	0	0	3	3
3.	Theory	**SBT41108 /**	Life Sciences/ HSSM –II (Human Values & Ethics and Psychology)	3	0	0	3	3
4.	Theory	**EME41102**	Engineering Mechanics	3	1	0	4	4
5.	Theory		Environmental Science	3	0	0	3	3
6.	Practical	**EEE41202 /ECS41201**	Electrical and Electronics Technology Lab/ Programming Lab	0	0	3	3	2
7.	Practical	**EME41204/ECE41201**	Engineering Workshop/Engineering Drawing and CAD	0	0	3	3	2
8.	Practical	**EMC41202**	Communication and Collaboration Skill -II	0	0	2	2	1
9.	Practical		Avant Garde Project-II	0	0	2	2	1
			Total	**15**	**2**	**10**	**27**	**23**

Total Credits (First Year): 47

HSSM: Humanities, Social Sciences & Management
BSC: Basic Science
ESC: Engg. Science

SECOND YEAR

Semester-III								
S. No	**Type**	**Course Code**	**Subject Name**	**L**	**T**	**P**	**Contact Hrs/wk**	**Credits**
1.	Theory BSC	**SMA42109**	Engineering Mathematics– III	3	1	0	4	4
2.	Theory	**ECE42101**	Engineering Geology	3	0	0	3	3

	ESC							
3.	Theory HSSM		HSSM-IV (Economics for Engineers)	3	0	0	3	3
4.	Theory PC	**ECE42103**	Prof. Core – I Building Planning and Material	3	0	0	3	3
5.	Theory PC	**ECE42105**	Prof. Core – II Fluid Mechanics & Hydraulic Machinery	3	0	0	3	3
6.	Theory PC	**ECE42107**	Prof. Core – III Structural Mechanics I	3	0	0	3	3
7.	Practical PC	**ECE42201**	Prof. Core Lab – I Fluid Mechanics Lab	0	0	3	3	2
8.	Practical		Interdisciplinary Project AU	1	0	3	4	3
9.	Practical		Design Thinking-I	0	0	3	3	2
10.	Practical		Avant Garde Project-III	0	0	2	2	1
11.	Practical		#Adamas Foundation (CSR Activity)	__	_	_	_____	1
			Total	**19**	**1**	**11**	**31**	**28**

 # CSR Activity will be taken up during the summer break after 2nd semester, and will be evaluated in the 3rd semester.

SEMESTER-IV								
S. No	**Type**	**Course Cod**	**Subject Name**	**L**	**T**	**P**	**Contact Hrs/wk**	**Credits**
1.	Theory **BSC**	**SMA42111**	Engineering Mathematics-IV	3	0	0	3	3
2.	Theory **PC**	**ECE42102**	Prof. Core – IV Structural Mechanics II	3	0	0	3	3
3.	Theory **PC**	**ECE42104**	Prof. Core – V Soil Mechanics	3	0	0	3	3
4.	Theory **PC**	**ECE42106**	Prof. Core – VI Surveying	3	0	0	3	3
5.	Theory **PC**	**ECE42108**	Prof. Core – VII Water Resources Engineering	3	0	0	3	3
6.	Practical BSC	**SMA42211**	Numerical Techniques Lab	0	0	3	3	2
7.	Practical **PC**	**ECE42202**	Prof. Core Lab – II Surveying Practice Lab	0	0	3	3	2
8.	Practical **PC**	**ECE42204**	Prof. Core Lab – III Solid Mechanics Lab	0	0	3	3	2
9.	Practical		Design Thinking-II	0	0	3	3	2
10.	Practical		Avant Garde Project-IV	0	0	2	2	1
			Total	**15**	**0**	**14**	**29**	**24**

Total Credit (Second Year): 52

THIRD YEAR

SEMESTER –V								
S. No	**Type**	**Course Code**	**Subject Name**	**L**	**T**	**P**	**Contact Hrs /week**	**Credits**
1.	Theory PC	**ECE43101**	Prof. Core – VIII Design of RC Structure	3	0	0	3	3
2.	Theory PC	**ECE43103**	Prof. Core – IX Foundation Engineering	3	0	0	3	3
3.	Theory PC	**ECE 43105**	Prof. Core – X Transportation Engineering	3	0	0	3	3
4.		**CEH43101**	**Specialization Course-I Rural and Urban Planning**	**3**	**1**	**0**	**4**	**4**
5.	Theory PE	**ECE43107 / ECE43109**	**Prof. Elective – I** 1.Earthquake Engineering 2.Concrete Technology	3	0	0	3	3

		/ **ECE43111**	3.Solid Waste Management					
6.	Practical PC	**ECE43201**	Prof. Core Lab – IV Geotechnical Engineering Lab	0	0	3	3	2
7.	Practical PC	**ECE43203**	Prof. Core Lab – V Transportation Engineering Lab	0	0	3	3	2
8.	Practical PC	**ECE43205**	Prof. Core Lab – VI Civil Engineering Drawing	0	0	3	3	2
9.	**Practical**	**CEH43201**	**Specialization Lab-I Rural and Urban Planning Lab**	**0**	**0**	**3**	**3**	**2**
10.	Practical		Venture Ideation	0	0	2	2	1
11.	Practical		Avant Garde Project-V	0	0	2	2	1
			Total	**15**	**1**	**16**	**32**	**26**

SEMESTER –VI								
S. No	**Type**	**Course Code**	**Subject Name**	**L**	**T**	**P**	**Contact Hrs/wk**	**Credits**
1.	Theory PC	**ECE43102**	Prof. Core – XI Design of Steel Structure	3	0	0	3	3
2.	Theory PC	**ECE43104**	Prof. Core – XII Environmental Engineering	3	0	0	3	3
3.	Theory PE	**ECE43106/ ECE43108/ ECE43110**	**Prof. Elective – II** 1. Remote Sensing & GIS 2. Advanced Construction Materials & Techniques 3. Advanced Structural Analysis	3	0	0	3	3
4.	Theory OE	-----	**Open Elective – I**	2	0	0	2	2
5.		**CEH43102**	**Specialization Course-II Intelligent Waste Management**	3	1	0	4	4
6.		**CEH43104**	**Specialization Course-III Smart Materials and Infrastructure**	3	0	0	3	3
7.	Practical PC	**ECE43202**	Prof. Core Lab – VIII Environmental Engineering Lab	0	0	3	3	2

8.	Practical (Sessional) PC	**ECE43204**	Prof. Core Lab – IX Estimation & Valuation	0	0	3	3	2
9.	Practical PC	**ECE43206/ ECE43208**	**Prof. Elective-II Lab** 1. Remote Sensing & GIS Lab 2. Advanced Structural Analysis Lab	0	0	3	3	2
10.	**Practical PC**	**CEH43202**	**Specialization Lab-II Intelligent Waste Management Lab**	**0**	**0**	**3**	**3**	**2**
			Total	**17**	**1**	**12**	**30**	**26**

Total Credit (Third Year): 52

FOURTH YEAR

	SEMESTER-VII							
S. No	**Type**	**Course CODE**	**Subject Name**	**L**	**T**	**P**	**Contact Hrs/week**	**Credits**
1.	Theory HSSM		HSSM –V (Industrial Management)	3	0	0	3	3
2.	Theory PE	**ECE44101/ ECE44103/ ECE44105**	**Prof. Elective – III** 1. Air Pollution Control Engineering 2. Construction Planning & Management 3. Advanced RC Design	3	0	0	3	3
3.	Theory PE	**ECE44107/ ECE44109/ ECE44111**	**Prof. Elective – IV** 1. Repair and Rehabilitation of Structures 2. Prestressed Concrete 3. Environmental Impact Assessment	3	0	0	3	3
4.	Theory OE	**---**	**Open Elective – II**	3	0	0	3	3
5.	Theory OE	**---**	**Open Elective – III**	3	0	0	3	3
6.	**Theory**	**CEH44103**	**Specialization Course-IV Artificial Intelligence in Infrastructure**	**3**	**0**	**0**	**3**	**3**
7.	Practical PC	**ECE44201/ ECE44203/ ECE44205**	**Prof. Elective III Lab** Air Pollution Control Lab/Construction Planning & Management Lab/ Advanced RC Design Lab	0	0	3	3	2

8.	**Practical**	**CEH44201**	**Specialization Lab-III Artificial Intelligence in Infrastructure Lab**	**0**	**0**	**3**	**3**	**2**
9.	Practical PC	**ECE44301**	Summer Internship[#]	–	– –		—	2
10.	Practical PC	**ECE44401**	Minor Project	0	0	6	6	3
			Total	**18**	**0**	**12**	**30**	**27**

 # Summer Internship for 30 days will be taken at the end of 6th semester and will be evaluated in the 7th semester.

Semester-VIII								
S. No	**Type**	**Course Code**	**Subject Name**	**L**	**T**	**P**	**Contact Hrs/week**	**Credits**
1.	**Theory**	**CEH44102**	**Specialization Course-V Intelligent Transportation System** (Online/Offline mode)	**3**	**0**	**0**	**3 (For Offline mode only)**	**3**
2.	Practical	**ECE44402/ ECE44404/ ECE44406**	Industry Work Experience / SIRE* / Major Project	0	0	12	12 (For Major Project only)	5
3.	Practical	**ECE44502**	Comprehensive Viva Voce	------			------	2
4.	**Practical**	**CEH44502**	**Specialization Viva Voce**	------			------	**2**
			Total	**3**	**0**	**12**	**15**	**12**