5 Year Dual Degree Programme (Civil Engineering)

SEMESTER-I				
Sr. No.	**Subject Code**	**Courses**	**L-T-P**	**Credits**
		THEORY		
1	CY101/PH102	Engineering Chemistry/Engineering Physics	3-1-0	4
2	MA101	Mathematics - I	3-1-0	4
3	CE101	Engineering Mechanics	2-1-0	3
4	CS101	Computer Programming - I	2-0-0	2
5	EC101/EE102	Basic Electronics/Electrical Technology	2-0-0	2
6	HU101	English Proficiency	2-0-0	2
7	SS101	Human Values & Buddhist Ethics	2-0-0	2
		PRACTICALS		
8	CY103/PH104	Engineering Chemistry Lab/ Engineering Physics Lab	0-0-2	1
9	CE103	Engineering Graphics	0-0-3	2
10	CS103	Computer Programming Lab-I	0-0-3	2
11	EC103/EE104	Basic Electronics Lab/ Electrical Technology Lab	0-0-2	1
12	GP101	General Proficiency	-	1
		Total	**16-3-10**	**26**
		Total Contact Hours	29	

SEMESTER - II				
Sr. No.	**Subject Code**	**Courses**	**L-T-P**	**Credits**
		THEORY		
1	PH102/CY101	Engineering Physics/ Engineering Chemistry	3-1-0	4
2	MA102	Mathematics - II	3-1-0	4
3	CE102	Concepts of Built Environment	2-1-0	3
4	CS102	Computer Programming - II	2-0-0	2
5	EE102/EC101	Electrical Technology/ Basic Electronics	2-0-0	2
6	HU102	Professional Communication	2-0-0	2
7	SS102	History of Science & Technology	2-0-0	2
		PRACTICALS		
8	PH104/CY103	Engineering Physics Lab/ Engineering Chemistry Lab	0-0-2	1
9	CE104	Built Environment Lab	0-0-3	2
10	EE104/EC103	Electrical Technology Lab/ Basic Electronics Lab	0-0-2	1
11	ME102	Workshop Practices	0-0-3	2
12	GP102	General Proficiency	-	1
		Total	**16-3-10**	**26**
		Total Contact Hours	29	

SEMESTER-III				
Sr. No.	**Subject Code**	**Courses**	**L-T-P**	**Credits**
		THEORY		
1	MA201	Quantitative Techniques	3-1-0	4
2	CS201	IT Applications in Civil Engineering	2-0-0	2
3	CE201	Building Materials	2-0-0	2
4	CE203	Fluid Mechanics	3-1-0	4
5	CE205	Mechanics of Materials	3-1-0	4
6	CE207	Surveying-I	3-1-0	4
		PRACTICALS		
7	CE209	Fluid Mechanics Lab	0-0-3	2
8	CE211	Material Testing Lab	0-0-2	1
9	CE213	Surveying Lab - I	0-0-3	2
10	GP201	General Proficiency	-	1
		Total	**16-4-8**	**26**
		Total Contact Hour	28	

SEMESTER - IV				
Sr. No.	**Subject Code**	**Courses**	**L-T-P**	**Credits**
		THEORY		
1	MA202	Numerical Methods of Analysis	3-1-0	4
2	EE202	Measurements and Instrumentation	2-0-0	2
3	CE202	Building Construction	2-0-0	2
4	CE204	Environmental Engineering - I	3-1-0	4
5	CE206	Structural Analysis - I	3-1-0	4
6	CE208	Surveying-II	3-1-0	4
		PRACTICALS		
7	CE210	Environmental Engineering Lab	0-0-3	2
8	CE212	Surveying Lab - II	0-0-3	2
9	EE216	Measurements and Instrumentation Lab	0-0-2	1
10	GP102	General Proficiency	-	1
		Total	**16-4-8**	**26**
		Total Contact Hour	28	

SEMESTER - V				
Sr. No.	**Subject Code**	**Courses**	**L-T-P**	**Credits**
		THEORY		
1	ME311	Principles of Technology Management	2-0-0	2
2	CE301	R. C. Structure - I	3-1-0	4
3	CE303	Transportation Engineering – I	3-0-0	3
4	CE305	Environmental Engineering – II	2-1-0	3
5	CE307	Engineering Hydrology	3-0-0	3
6	CE309	Structural Analysis - II	3-1-0	4
		PRACTICALS		
7	CE313	Concrete Lab	0-0-3	2
8	CE315	Transportation Lab	0-0-3	2
9	CE317	Building Design	0-0-3	2
10	GP301	General Proficiency		1
		Total	**16-3-9**	**26**
		Total Contact Hours	28	

SEMESTER - VI				
Sr. No.	**Subject Code**	**Courses**	**L-T-P**	**Credits**
		THEORY		
1	ME312	Entrepreneurship & Innovation	2-0-0	2
2	CE302	R. C. Structure - II	3-1-0	4
3	CE304	Soil Mechanics	3-1-0	4
4	CE306	Transportation Engineering - II	2-0-0	2
5	CE308	Water Resources Engineering	3-0-0	3
6	CE310	Steel Structures	3-1-0	4
		PRACTICALS		
7	CE312	Soil Mechanics Lab	0-0-3	2
8	CE314	Structural Detailing	0-0-3	2
9	CE316	CAD Lab - I	0-0-3	2
10	GP302	General Proficiency		1
		Total	**16-3-9**	**26**
		Total Contact Hours	28	

SEMESTER - VII				
Sr. No.	**Subject Code**	**Courses**	**L-T-P**	**Credits**
		THEORY		
1	SS401	Social Aspects of Engineering	2-0-0	2
2	CE403	Contracts, Specifications & Economics	2-0-0	2
3	CE405	Foundation Engineering	3-1-0	4
4	CE407	Remote Sensing and GIS	3-1-0	4
5		Elective - I	2-1-0	3
6		Elective - II	3-1-0	4
		PRACTICALS		
7	CE413	Remote Sensing & GIS Lab	0-0-3	2
8	CE415	CAD Lab - II	0-0-2	1
9	CE417	Seminar	0-0-3	2
10	GP401	General Proficiency	-	1
		Total	**15-4-8**	**25**
		Total Contact Hours	27	

SEMESTER – VIII				
Sr. No.	**Subject Code**	**Courses**	**L-T-P**	**Credits**
		THEORY		
1	CE402	Construction Planning & Management	2-0-0	2
2	CE404	Quantity Estimation & Costing	2-1-0	3
3	CE406	Modelling and Simulation	3-1-0	4
4		Specialisation Elective - I	3-1-0	4
5		Specialisation Elective – II	3-1-0	4
6		Specialisation Elective - III	2-1-0	3
		PROJECTS		
7		Special Problem -I	0-0-3	2
8		Seminar	0-0-3	2
9	GP402	General Proficiency		1
		Total	**15-5-6**	**25**
		Total Contact Hours	26	

SUMMER SEMESTER (After VIIIth Semester)				
Sr. No.	**Subject Code**	**Courses**	**L-T-P**	**Credits**
1		Project	0-0-20	10
		Total	**0-0-20**	**10**
		Total Contact Hours	20	

SEMESTER – IX				
Sr. No.	**Subject Code**	**Courses**	**L-T-P**	**Credits**
		THEORY		
1		Specialisation Elective – IV	2-1-0	3
2		Specialisation Elective – V	3-1-0	4
3		Specialisation Elective – VI	3-0-0	3
4		Specialisation Elective – VII	3-1-0	4
5		Specialisation Elective – VIII	2-1-0	3
6		Open Elective - I	2-0-0	2
		PROJECTS		
7		Laboratory –I/ Special Problem -II	0-0-3	2
8		Research Project (Preliminary)	1**-0-4	3
9	GP501	General Proficiency		1
		Total	**16-4-7**	**25**
		Total Contact Hours	27	

***** This will not be a usual lecture session, but this is one to one interaction of each student with the concerned faculty member***

SEMESTER – X				
Sr. No.	**Subject Code**	**Courses**	**L-T-P**	**Credits**
1		Research Project	…….	24
2	GP502	General Proficiency	-	1
		Total	**……**	**25**

Grand Total Credits of Dual Degree = 266

SEMESTER – VIII (M. Tech Structural Engineering)				
Sr. No.	**Subject Code**	**Courses**	**L-T-P**	**Credits**
		THEORY		
1	CE402	Construction Planning & Management	2-0-0	2
2	CE404	Quantity Estimation & Costing	2-1-0	3
3	CE406	Modelling and Simulation	3-1-0	4
4	CE408	Advance Structural Analysis	3-1-0	4
5	CE410	Advance RCC Design	3-1-0	4
6		Elective - I	2-1-0	3
		PROJECTS		
7	CE414	Structural Analysis Lab-1	0-0-3	2
8		Seminar	0-0-3	3
9	GP402	General Proficiency		1
		Total	**15-5-6**	**25**
		Total Contact Hours	26	

SUMMER SEMESTER (After VIIIth Semester)				
Sr. No.	**Subject Code**	**Courses**	**L-T-P**	**Credits**
1		Project	0-0-20	10
		Total	**0-0-20**	**10**
		Total Contact Hours	20	

SEMESTER – IX (Structural Engineering)				
Sr. No.	**Subject Code**	**Courses**	**L-T-P**	**Credits**
		THEORY		
1	CE501	Plate and Shell Structures	2-1-0	3
2	CE503	Composite Structures	3-1-0	4
3	CE505	Theory of Stability	3-1-0	4
4	CE507	Metal Structures	3-0-0	3
5		Elective – II	2-1-0	3
6		Open Elective - I	2-0-0	2
		PROJECTS		
7		Structural Analysis Lab-I/Special Problem	0-0-3	2
8		Research Project (Preliminary)	1**-0-4	3
9	GP501	General Proficiency		1
		Total	**16-4-7**	**25**
		Total Contact Hours	27	

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SEMESTER – X				
Sr. No.	**Subject Code**	**Courses**	**L-T-P**	**Credits**
1		Research Project	……	24
2	GP502	General Proficiency	-	1
		Total	**……..**	**25**

Grand Total Credits of Dual Degree = 266

SEMESTER – VIII (M. Tech - Environment Engineering)				
Sr. No.	**Subject Code**	**Courses**	**L-T-P**	**Credits**
		THEORY		
1	CE402	Construction Planning & Management	2-0-0	2
2	CE404	Quantity Estimation & Costing	2-1-0	3
3	CE406	Modelling and Simulation	3-1-0	4
4	CE432	Advance Environmental Engineering	3-1-0	4
5	CE434	Air and Noise Pollution	3-1-0	4
6		Elective – I	2-1-0	3
		PROJECTS		
7	CE436	Special Problem-I	0-0-3	2
8		Seminar	0-0-3	2
9	GP402	General Proficiency		1
		Total	**15-5-6**	**25**
		Total Contact Hours	26	

SUMMER SEMESTER (After VIIIth Semester)				
Sr. No.	**Subject Code**	**Courses**	**L-T-P**	**Credits**
1		Project	0-0-20	10
		Total	**0-0-20**	**10**
		Total Contact Hours	20	

SEMESTER – IX (Environmental Engineering)				
Sr. No.	**Subject Code**	**Courses**	**L-T-P**	**Credits**
		THEORY		
1	CE531	Solid and Hazardous Waste Management	2-1-0	3
2	CE533	Soil and Groundwater Contamination	3-1-0	4
3	CE535	Environmental Impact Assessment	3-1-0	4
4	CE537	Management in WATSAN	3-0-0	3
5		Elective- II	2-1-0	3
6		Open Elective - I	2-0-0	2
		PROJECTS		
7		Advance Environmental Lab-I/ Special Problems-II	0-0-3	2
8		Research Project (Preliminary)	1**-0-4	3
9	GP501	General Proficiency		1
		Total	**16-4-7**	**25**
		Total Contact Hours	27	

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SEMESTER – X				
Sr. No.	**Subject Code**	**Courses**	**L-T-P**	**Credits**
1		Research Project	…….	24
2	GP502	General Proficiency	-	1
		Total	**…….**	**25**

Grand Total Credits of Dual Degree = 266

List of Electives for B.Tech

Elective-I

1. CE405: Operation and Research
2. CE407: Design of Water Resources Infrastructure
3. CE409: Fluid Machines

Elective –II

1. CE411: Earthquake Resistant Structural Design
2. CE413: Open Channel Hydraulics
3. CE415: Reliability Analysis

List of Electives for M. Tech (Structures)

Elective-I

1. CE416: Applied Elasticity and Plasticity
2. CE418: Design of Tall Buildings
3. CE420: Structural Optimisation
4. CE422: Structural Dynamics

Elective-II

1. CE509: Applied Elasticity and Plasticity
2. CE511: Earthquake Resistant Structural Design
3. CE513: Computer Aided Structural Design
4. CE515: Knowledge based Expert Systems in Structural Engineering

Open Elective – I *(to be choose by students of other courses)*

1. CE517: Digital Image Processing
2. CE519: Climate Change Impact Assessment
3. CE521: Water management

List of Electives for M. Tech (Environment Engineering)

Elective-I

1. CE436: Planning and Design of Environmental Engineering Facilities
2. CE438: Environmental Law, Regulations Policy
3. CE440: Ecological Modelling
4. CE442: Environmental Hydraulics

Elective-II

1. CE539: Air Quality Modelling & Management
2. CE541: Climate Change and its Impact on Environment
3. CE543: Remote Sensing and GIS applications for Environmental Monitoring
4. CE545: Environmental Chemistry and Microbiology
5. CE547: Industrial Wastewater Treatment

Open Elective – I *(to be choose by students of other courses)*

1. CE517: Digital Image Processing
2. CE519: Climate Change Impact Assessment
3. CE521: Water Management