Section 6
Course Structure of the Framework

Course Structure CE

Table 6. Semester wise and component wise distribution of credit (Four Year UGP - Single Major) [6]

First Year	**Semester I**						
	Sl No	**Course Title**	**Course Code**	**L**	**T**	**P**	**Credits**
	1	Chemistry	CHY022C101	3	0	0	3
	2	Chemistry Lab	CHY022C111	0	0	2	1
	3	Mathematics - I	MAT022C102	3	1	0	4
	4	Biology for Engineers	CEE022C103	3	0	0	3
	5	Programming for Problem Solving	CSE022C104	2	0	0	3
	6	Programming for Problem Solving Lab	CSE022C114	0	0	2	1
	7	Manufacturing Workshop Practice	MEE022C115	0	0	4	2
	8	Universal Human Values	BHS022A101	3	0	0	**3**
	9	Sports and Yoga Lab/NSS	CEE022S117	0	0	2	1
							21
	Semester II						
	Sl No	**Course Title**	**Course Code**	**L**	**T**	**P**	**Credits**
	1	Physics	PHY022C201	3	1	0	4
	2	Physics Lab	PHY022C211	0	0	2	1
	3	Mathematics - II	MAT022C202	3	1	0	4
	4	Basic Electrical Eng.	CSE022C205	2	1	0	3
	5	Basic Electrical Eng. Lab	CSE022C215	0	0	2	1
	6	Eng. Graphics & Design	CEE022C204	1	0	0	1
	7	Eng. Graphics & Design Lab	CEE022C214	0	0	4	2
	8	English for Technical Writing	CEN982A203	2	0	0	2
	9	Design Thinking	COD022S216	0	0	2	1
	10	Ideation Lab	CEE022S217	0	0	2	1
							20

	1	**Honours (Optional) [To be obtained through MOOCS]**		**3**	**0**	**0**	**3**
Second Year	**Semester III**						
	Sl No	**Course Title**	**Course Code**	**L**	**T**	**P**	**Credits**
	1	Engineering & Solid Mechanics	CEE022C301	3	0	2	4
	2	Civil Engineering Material Testing & Evaluation	CEE022C302	1	0	2	2
	3	Building Planning & CAD	CEE022C303	2	0	0	2
	4	Building Planning & CAD Lab	CEE022C313	0	0	2	1
	5	Fluid Mechanics	CEE022C304	3	0	0	3
	6	Fluid Mechanics Lab	CEE022C314	0	0	2	1
	7	Concrete Technology	CEE022C305	2	0	0	2
	8	Concrete Technology Lab	CEE022C315	0	0	2	1
	9	Mathematics for Civil Engineering	MAT022C306	3	1	0	4
	10	IKS-I	IKS022C305	2	0	0	2
							22
	1	**Honours (Optional) [To be obtained through MOOCS]**		**3**	**0**	**0**	**3**
	Semester IV						
	Sl No	**CourseTitle**	**Course Code**	**L**	**T**	**P**	**Credits**
	1	Structural Analysis	CEE022C401	3	1	0	4
	2	Hydraulic Engineering	CEE022C402	3	0	0	3
	3	Hydraulic Engineering Lab	CEE022C412	0	0	2	1
	4	Transportation Engineering	CEE022C403	2	0	0	2
	5	Transportation Engineering Lab	CEE022C413	0	0	2	1
	6	Surveying and Geomatics	CEE022C404	3	0	0	3
	7	Surveying and Geomatics	CEE022C414	0	0	2	1
	8	Construction Engineering & Management	CEE022C405	3	0	0	3
	9	Geotechnical Engineering	CEE022C406	3	0	0	3
	10	Geotechnical Engineering Lab	CEE022C416	0	0	2	1

							22
	1	**Honours (Optional) [To be obtained through MOOCS]**		**3**	**0**	**0**	**3**
Third Year	**Semester V**						
	Sl No	**Course Title**	**Course Code**	**L**	**T**	**P**	**Credits**
	1	Structural Design I	CEE022C501	3	0	0	3
	2	Structural Design I Lab	CEE022C511	0	0	2	1
	3	Environmental Engineering	CEE022C502	3	0	0	3
	4	Environmental Engineering Lab	CEE022C512	0	0	2	1
	5	Engineering Economics, Estimation & Costing	CEE022C503	3	0	0	3
	6	Engineering Economics, Estimation & Costing Lab	CEE022C513	0	0	2	1
	7	Hydrology & Water Resource Engineering	CEE022C504	3	0	0	3
	8	Plumbing (Water and Sanitation)	CEE022C505	3	0	2	4
	9	Open Elective	CEE022M505	3	0	0	3
							22
	1	**Honours (Optional) [To be obtained through MOOCS]**		**3**	**0**	**0**	**3**
	Semester VI						
	Sl No	**Course Title**	**Course Code**	**L**	**T**	**P**	**Credits**
	1	Structural Design II	CEE022C601	3	0	0	3
	1	Structural Design II Lab	CEE022C611	0	0	2	1
	2	Intelligent Transportation Systems	CEE022C602	3	0	0	3
	3	Sustainable & Green Construction	CEE022C603	3	1	0	4
	4	Program Elective-2(Basket)	CEE022D60X	3	0	2	4
	5	Program Elective-3(Basket)	CEE022D60X	3	1	0	4
	6	Open Elective (Basket Course)	XX(OEC)	3	0	0	3
							22

	1	**Honours (Optional) [To be obtained through MOOCS]**		**3**	**0**	**0**	**3**
Fourth Year	**Semester VII**						
	Sl No	**Course Title**	**Course Code**	**L**	**T**	**P**	**Credits**
	1	Robotics and Automation	CEE022C701	2	0	0	2
	2	Program Elective-4(Basket)	CEE022D60X	3	0	0	3
	3	Open Elective	CEE022D60X	3	0	0	3
	4	Internship Evaluation	CEE022C715	0	0	24	12
							20
	1	**Honours (Optional) [To be obtained through MOOCS]**		**3**	**0**	**0**	**3**
	Semester VIII						
	Sl No	**Course Code**	**Course Title**	**L**	**T**	**P**	**Credits**
	1	Program Elective-5(Basket)	CEE022C801	3	1	0	4
	2	Program Elective-6(Basket)	CEE022C802	3	0	2	4
	3	Program Elective-7(Basket)	CEE022C803	3	0	0	3
	4	Open Elective(Basket)	CEE022D80X	3	0	0	3
	5	Project	CEE022C811	0	0	8	4
							18
	1	**Honours (Optional) [To be obtained through MOOCS]**		**3**	**0**	**0**	**3**
							168

Note: A student will be eligible to get UG Degree with Honors if he/she completes and additional 18-20 credits. This should be acquired through MOOCs platforms.

Also, a student must undergo a mandatory 6 months of internship in the Industry/Research Institutions, evaluation of which will be done by 7th semester.

Annexure I

Semester-wise Credit Distribution

SEMESTER	CREDITS
I	21
II	20
III	22
IV	22
V	22
VI	22
VII	20
VIII	18
Total	**167 credit**

Annexure II

List of suggestive Course under Programme Elective Courses:

I. Structural Engineering

1. Structural Analysis-I &II
2. Introduction to Finite Element analysis
3. Masonry Structures
4. Prestressed Concrete
5. Design of Steel Structures
6. Bridge Engineering, I & II
7. Structural Dynamics
8. Earthquake Engineering
9. Rehabilitation/Restoration of structures
10. Steel Concrete Composite structures

II. Construction Engineering & Management

1. Construction Productivity
2. Formwork Engineering
3. Construction Cost Analysis
4. Contracts Management

5. Energy Efficient Buildings

III. Geotechnical Engineering

1. Foundation Engineering
2. Earth Retaining Structures

IV. ***Transportation Engineering***

1. Pavement Materials
2. Pavement Design
3. Geometric Design of Highways
4. Airport Planning and Design
5. Railway Engineering
6. Smart Cities

V. ***Environmental Engineering***

1. Physico-Chemical Processes for Water and Wastewater Treatment
2. Biological Processes for Contaminant Removal
3. Rural Water Supply and Onsite Sanitation Systems
4. Solid and Hazardous Waste Management
5. Environmental Impact Assessment and Life Cycle Analyses
6. Industrial Waste Water Management

VI. ***Hydrology & Water Resources Engineering***

1. Water Quality and Management
2. Surface Hydrology
3. Groundwater Engineering
4. Watershed Conservation and Management
5. Urban water Infrastructure
6. Integrated water resource management

VII. ***Hydraulics***

1. Design of hydraulic structures/Irrigation Engineering
2. Open Channel flow
3. River Engineering
4. Hydraulic modelling
5. Basics of computational hydraulics
6. Transients in closed conduits
7. Urban Hydrology and Hydraulics
8. Groundwater