

Civil Engineering

FRACTAL CURRICULUM (REDUCED)

2016 and latter Batches

Semester I

ID	Course	Credit	Segment
ID1035	Independent Project	1	16
MA1110	Calculus-I	1	12
MA1220	Calculus-II	2	36
ID1303	Introduction to Programming	2	36
CY1017	Environmental Chemistry-I	1	12
ID1130	Engineering Statics	2	13
ID1100	Fluid Mechanics-I	2	46
ID1054	Digital Fabrication	2	16
ID1041	Engineering Drawing	2	16
ID1171	Fabrication Lab-I	2	16
		17 cr	

Semester II

MA1130	Vector Calculus	1	12
MA1140	Linear Algebra	1	34
MA1150	Differential Equations	1	56
ID1160	Solid Mechanics-I	2	13
CY1020	Dynamics of Chemical Systems-I	1	12
ME1030	Dynamics	2	46
ID1140	Thermodynamics-I	1	12
ID1150	Thermodynamics-II	2	36
CE2020	Construction Materials	1.5	46
CE3512	Introduction to Environmental Engineering	1	12
LAXXXX	Liberal and Creative Arts Electives	2	
ID1370	Digital Signal Processing	1	12
		16.5cr	

Semester III

MA2110	Probability	1	12
PH1017	Classical Physics	1	34
PH1031	Physics Lab	2	16
ID2020	Solid Mechanics-II	2	46
EE1010	Electric Circuits	1	12
CE2021	Construction Materials Lab	2	16
CE2030	Concrete Technology	1.5	13
MA2120	Transforms	1	34
CY1031	Chemistry lab	2	16
ID1110	Fluid Mechanics-II	1.5	13
CE2031	Fluid Mechanics Lab	1	13
		16cr	

Semester IV

MA2130	Complex Variables	1	12
MA2140	Statistics	1	34
BO1010	Introduction to Life Sciences	1	34
CE2101	Structural Mechanics Lab	2	46
LAXXXX	Liberal and Creative Arts Electives	2	
CE2100	Introduction to Structural Analysis	1.5	13
CE2110	Analysis of Indeterminate Structures	1.5	46
CE3300	Geotechnical Engineering-I	1.5	13
CE3310	Geotechnical Engineering-II	1.5	46
CE3301	Geotechnical Engineering Lab	2	16
		15cr	

Semester V

CE3312	Introduction to Foundation Engineering	1	12
CE3322	Design of Foundations	2	36
CE3102	Introduction to Reinforced Concrete	1.5	13
CE3122	Reinforced Concrete Design	1.5	46
CE3500	Introduction to Hydraulic Engineering	1.5	13
CE2500	Engineering Hydrology	2	14
CE3501	Hydraulic Engineering Lab	1	56
BM1030	Bioengineering	1	56
CE3820	Highway Design and Materials	2	14
CE3830	Railway and Airport Engineering	1	56
CE3590	Environmental Systems Engineering	2	36
XXXXXX/CE3025 ^{\$}	<i>Core Electives / Department Core Elective (Project)</i>	0-3	
		16.5-19.5 cr	

Semester VI

CE3510	Open Channel Hydraulics	1.5	13
CE3010	Fundamentals of GIS and Remote Sensing	2	14
CE3011	GIS Lab	1	34
CE3821	Highway Materials Lab	1	56
CE3142	Introduction to Structural Steel Design	1.5	13
CE3132	Design of Steel Structures	1.5	46
LAXXXX	Liberal/Creative Arts	2	
CE3840	Traffic Engineering and Planning	2	14
CE3841	Traffic Engineering Lab	1.5	46
CE3530	Air Pollution	2	14
XXXXXX/CE3035 ^{\$}	<i>Core Electives / Department Core Elective (Project)</i>	0-3	
		16-19 cr	

Semester VII

XXXXXX/CE4025 [§]	<i>Core Electives / Department Core Elective (Project)</i>	3-6	
CE4500	Water Resources Engineering	2	16
CE4900	Construction Management	2	16
CE3020	Surveying	2	
LAXXXX	Liberal/Creative Arts	2	
CE3511	Environmental Engineering lab	2	36
CE3522	Water and Wastewater Engineering	2	14
		15-18 cr	

Semester VIII

XXXXXX/CE4045 [§]	<i>Core Electives / Department Core Elective (Project)</i>	3-6	
ID4006	Ethics and Values	1	56
XXXXXX	Free Electives	6	
LAXXXX	Liberal/Creative Arts	2	
		12-15 cr	

Total Credits: 127

[§]Guidelines for taking Core Electives/Projects

- Total credits for Core Electives/Projects should be minimum 9 credits
- Core electives can be 1, 2, or 3 credit courses
- If a project is to be taken, it should be of 3 credits.
- If one is fulfilling total of nine credits by taking Project of three credits and Core electives of six credits, three credits of core electives are to be taken from Basket 1 and remaining credits of core electives are to be taken from Basket 2.
- If one is fulfilling total of nine credits by taking only Core electives, at least six credits of Core electives are to be taken from Basket 1.

Basket 1 (Departmental Courses):

No.	Course Code	Course Name	Credits
1	CE6540	Contaminant hydrology and remediation	3
2	CE6580	Solid and hazardous waste management	3
3	CE6510	Advanced water and wastewater engineering	3
4	CE6520	Air pollution control	3
5	CE6300	Advanced foundation engineering	3
6	CE6310	Advanced soil mechanics	3
7	CE6340	Ground modification techniques	3
8	CE6330	Soil dynamics	3
9	CE6352	Design of earth structures	3
10	CE6130	Finite element analysis	3
11	CE6222	Prestressed concrete	3
12	CE6120	Applied elasticity and Plasticity	3
13	CE4102	Advanced reinforced concrete design	1.5
14	CE6140	Structural dynamics	3
15	CE6110	Advanced structural mechanics	3
16	CE6232	Advanced steel design	3
17	CE6500	Engineering Hydrology and hydrologic systems	3
18	CE6610	Remote sensing and GIS applications to civil engineering	3
19	CE6530	Ground water modeling	3
20	CE6011	Computer methods in civil engineering	2 (1-6)
21	CE4330	Geology I	1 (1-2)
22	CE5390	Geothermics	2
23	CE4510	Environmental Impact Assessment	2

Basket 2 (Institute-wide Courses):

No.	Course Code	Course Name	Credits
1	CE6540	Contaminant hydrology and remediation	3
2	CE6580	Solid and hazardous waste management	3
3	CE6510	Advanced water and wastewater engineering	3
4	CE6520	Air pollution control	3
5	CE6300	Advanced foundation engineering	3
6	CE6310	Advanced soil mechanics	3
7	CE6340	Ground Modification Techniques	3
8	CE6330	Soil dynamics	3
9	CE6352	Design of earth structures	3
10	CE6130	Finite element analysis	3
11	CE6222	Prestressed concrete	3
12	CE6120	Applied elasticity and Plasticity	3
13	CE4102	Advanced Reinforced Concrete Design	1.5
14	CE6140	Structural dynamics	3
15	CE6110	Advanced structural mechanics	3
16	CE6232	Advanced steel design	3
17	CE6500	Engineering hydrology and hydrologic systems	3
18	CE6610	Remote sensing and GIS applications to civil engineering	3
19	CE6530	Ground water modeling	3
20	CE6011	Computer methods in civil engineering	2
21	CE4330	Geology I	1
22	CE5390	Geothermics	2
23	ME2090	Kinematics of mechanisms	2 (1-3)
24	ME2100	Dynamics of mechanisms	2 (4-6)
25	ME3150	Applied elasticity	2 (1-4)
26	ME3413	Machine drawing and solid modeling	2 (1-6)
27	ME2070	Introduction to mathematical modeling	1.5 (1-3)
28	ME5010	Mathematical methods for engineers	3
29	ME5110	Advanced mechanics of solids	3
30	ME5120	Dynamics and vibration	3
32	ME5700	Analysis and design of composite structures	3

33	ME5610	Fracture mechanics	3
34	ME5630	Nonlinear oscillation	3
35	ME5690	Advanced FEM	3
36	ME5260	Continuum mechanics	3
37	ME5320	Advanced heat transfer	3
38	ME5330	Computational fluid dynamics	3
39	CH5050	Computational methods for engineers	3
40	MS5100	Composite materials	3
41	MS5140	Introduction to computational methods in materials science	3
42	CE4510	Environmental Impact Assessment	2