

## Department of Civil Engineering

### BACHELOR OF TECHNOLOGY (CIVIL)

#### First Year (Autumn Semester)

S.No	Code	Title	Area	Cr	L	T	P	TH	PH	CWS	PRS	MTE	ETE	PRE
1	MAN-001	Mathematics-I	BSC	4	3	1	0	3	0	20-35	-	20-30	40-50	-
2	PHN-001	Mechanics	BSC	4	3	0	2	3	0	10-25	25	15-25	30-40	-
3	CEN-105	Introduction to Environmental Studies	GSC	3	3	0	0	2	0	20-35	-	20-30	40-50	-
4	HSN-001B	Communication Skills (Advance)	HSSC	2	1	0	2	2	-	25	-	25	50	-
5	HSN-001A	Communication Skills (Basic)	HSSC	2	1	0	2	2	0	25	-	25	50	-
6	HSN-002	Ethics and Self Awareness	HSSC	2	1	1	0	2	0	25	-	25	50	-
7	CEN-101	Introduction to Civil Engineering	PCC	2	2	0	0	2	0	20-35	-	20-30	40-50	-
8	CEN-103	Numerical Methods and Computer Programming	ESC	4	3	0	2	3	0	10-25	25	15-25	30-40	-

#### First Year (Spring Semester)

S.No	Code	Title	Area	Cr	L	T	P	TH	PH	CWS	PRS	MTE	ETE	PRE
1	CYN-008	General Chemistry - III	BSC	4	3	0	2	3	0	10-25	25	15-25	30-40	-
2	MAN-006	Probability and Statistics	BSC	4	3	1	0	3	0	20-35	-	20-30	40-50	-
3	CEN-102	Solid Mechanics	ESC	4	3	1	0	3	0	20-35	-	20-30	40-50	-
4	CEN-104	Engineering Graphics	PCC	4	2	2	0	3	0	20-35	-	20-30	40-50	-
5	CEN-106	Geomatics Engineering – I	PCC	4	3	0	2	3	0	10-25	25	15-25	30-40	-
6	CEN-108	Fluid Mechanics	PCC	4	3	1	2/2	3	0	15-30	20	15-25	30-40	-

#### Second Year (Autumn Semester)

S.No	Code	Title	Area	Cr	L	T	P	TH	PH	CWS	PRS	MTE	ETE	PRE
1	EEN-112	Electrical Sciences	ESC	4	3	1	2/2	3	0	15-30	20	15-25	30-40	-
2	CEN-203	Geomatics Engineering – II	PCC	5	3	0	2	3	0	10-25	25	15-25	30-40	-
3	CEN-205	Channel Hydraulics	PCC	4	3	1	2/2	3	0	15-30	20	15-25	30-40	-
4	CEN-207	Structural Analysis – I	PCC	4	3	1	2/2	3	2	15-30	20	15-25	30-40	-
5	CEN-209	Water Supply Engineering	PCC	4	3	1	2/2	3	0	15-30	20	15-25	30-40	-
6	HSN-ELE	HSS Elective Course	HSSME C	3	3	2	1	0	3	0	15	-	35	50

#### Second Year (Spring Semester)

S.No	Code	Title	Area	Cr	L	T	P	TH	PH	CWS	PRS	MTE	ETE	PRE
1	MIN-102	Basic Manufacturing Processes	ESC	4	2	0	4	3	0	15	15	30	40	-
2	CEN-202	Waste Water Engineering	PCC	4	3	1	2/2	3	0	15-30	20	15-25	30-40	-
3	CEN-204	Engineering Hydrology	PCC	4	3	1	-	3	0	20-35	0	20-30	40-50	-
4	CEN-206	Structural Analysis-II	PCC	4	3	1	2/2	3	2	15-30	20	15-25	30-40	-
5	CEN-208	Design of Reinforced Concrete Elements	PCC	4	3	1	2/2	3	2	15-30	20	15-25	30-40	-
6	CEN-210	Highway Engineering	PCC	5	3	1	2	3	0	10-25	25	15-25	30-40	-

**Third Year (Autumn Semester)**

S.No.	Code	Title	Area	Cr	L	T	P	TH	PH	CWS	PRS	MTE	ETE	PRE
1	CEN-303	Soil Mechanics	PCC	4	3	1	2/2	3	0	15-30	20	15-25	30-40	-
2	CEN-305	Design of Steel Elements	PCC	4	3	0	2	3	0	10-25	25	15-25	30-40	-
3	CEN-307	Railway Engineering	PCC	4	3	1	0	3	0	20-35	-	20-30	40-50	-
4	CEN-ELE1	Department Elective Course – I	PEC	4	-	-	-	-	-	-	-	-	-	-
5	OEC/ BM-ELE	Open Elective Course/ Management Studies Elective Course	OEC/ HSSMEC	3	-	-	-	-	-	-	-	-	-	-
6	CEN-391	Technical Communication	PCC	2	0	2	0	0	0	100	-	-	-	-

**Third Year (Spring Semester)**

S.No.	Code	Title	Area	Cr	L	T	P	TH	PH	CWS	PRS	MTE	ETE	PRE
1	CEN-300	Practical Problem	PCC	3	-	-	-	-	-	-	-	-	-	-
2	CEN-306	Foundation Engineering	PCC	4	3	1	2/2	3	0	15-30	20	15-25	30-40	-
3	CEN-308	Design of Structural Systems	PCC	5	3	1	2	3	0	10-25	25	15-25	30-40	-
4	CEN-ELE2	Department Elective Course – II	PEC	4	-	-	-	-	-	-	-	-	-	-
5	MSC1/ DHC1	Minor Specialization Course-I / Department Honours Course – I	MSC/DHC	4	-	-	-	-	-	-	-	-	-	-
6	OEC/ BM-ELE	Open Elective Course/ Management Studies Elective Course	OEC/ HSSMEC	3	-	-	-	-	-	-	-	-	-	-
7	CEN-399	Educational Tour	PCC	0	-	-	-	-	-	-	-	-	-	-

**Fourth Year (Autumn Semester)**

S.No.	Code	Title	Area	Cr	L	T	P	TH	PH	CWS	PRS	MTE	ETE	PRE
1	CEN-400A	B. Tech. Project	PCC	4	-	-	-	-	-	-	-	-	-	-
2	CEN-ELE3	Department Elective Course-III	PEC	4	-	-	-	-	-	-	-	-	-	-
3	CEN-ELE4	Department Elective Course-IV	PEC	4	-	-	-	-	-	-	-	-	-	-
4	MSC2/ DHC2	Minor Specialization Course-II / Department Honours Course – II	MSC/DHC	4	-	-	-	-	-	-	-	-	-	-
5	MSC3/ DHC3	Minor Specialization Course-III / Department Honours Course – III	MSC/ DHC	4	-	-	-	-	-	-	-	-	-	-
6	CEN-499	Training Seminar	PCC	2	-	-	-	-	-	-	-	-	-	-

**Fourth Year (Spring Semester)**

S.No.	Code	Title	Area	Cr	L	T	P	TH	PH	CWS	PRS	MTE	ETE	PRE
1	CEN-400B	B. Tech. Project (Contd. From Autumn Semester)	PCC	8	-	-	-	-	-	-	-	-	-	-
2	CEN-ELE5	Department Elective Course-V	PEC	4	-	-	-	-	-	-	-	-	-	-
3	CEN-ELE6	Department Elective Course-VI	PEC	4	-	-	-	-	-	-	-	-	-	-
4	MSC4/ DHC4	Minor Specialization Course-IV / Department Honours Course – IV	MSC/DHC	4	-	-	-	-	-	-	-	-	-	-
5	MSC5/ DHC5	Minor Specialization Course-V / Department Honours Course – V	MSC/ DHC	4	-	-	-	-	-	-	-	-	-	-

**\*All the M.Tech courses of Civil Engineering Department will be available as electives for the civil engineering UG students.  
CE 431 Advanced Highway Engg. and CEN 434 Traffic Engineering and Management dropped as Electives.**

Department Electives

Department Elective Courses: Category I

S.No.	Code	Title	Area	Cr	L	T	P	TH	PH	CWS	PRS	MTE	ETE	PRE
1.	CEN-411	Construction Planning and Management	PEC	4	3	1	0	3	0	25	0	25	50	0
2.	CEN-614	Theory and Application of GIS	PEC	4	3	0	2	3	0	15	25	20	40	0
3.	CEN-412	Water Recourses Engineering	PEC	4	3	1	2/2	3	2	20	20	20	40	0
4.	CEN-413	Building material and Construction Technology	PEC	4	3	1	0	3	0	25	0	25	50	0
5.	CEN-414	System Analysis	PEC	4	3	1	0	3	0	25	0	25	50	0

Department Elective Courses: Category I Stream 1

S.No.	Code	Title	Area	Cr	L	T	P	TH	PH	CWS	PRS	MTE	ETE	PRE
1.	CEN-544	Structural Dynamics	PEC	4	3	1	0	3	0	25	0	25	50	0
2.	CEN-543	Advance Concrete Design	PEC	4	3	0	2	3	0	15	25	20	40	0
3.	CEN-501	Environment Modelling and Simulation	PEC	4	3	1	2/2	3	0	20	20	20	40	0
4.	CEN-421	Advanced Water and Wastewater Treatment	PEC	4	3	1	0	3	0	25	0	25	50	0
5.	CEN-422	Dam Engineering	PEC	4	3	1	0	3	0	25	0	25	50	0
6.	CEN-514	Geodesy and GPS Surveying	PEC	4	3	0	2	3	0	15	25	20	40	0
7.	CEN-642	Analysis and Design of Bridges	PEC	4	3	0	2	3	0	15	25	20	40	0
8.	CEN-545	Finite Element Methods	PEC	4	3	0	2	3	0	15	25	20	40	0
9.	CEN-601	Air Pollution and Control	PEC	4	3	1	2/2	3	0	20	20	20	40	0
10	CEN-605	Solid Waste Management	PEC	4	3	1	2/2	3	-	20	20	20	40	0
1.	CEN-423	Ground Water Hydrology	PEC	4	3	1	0	3	0	25	0	25	50	0
12	CEN-636	Hydropower Engineering	PEC	4	3	1	0	3	0	25	0	25	50	0
13	CEN-424	Digital Image Processing	PEC	4	3	0	2			15	25	20	40	0

Stream 2

S.No.	Code	Title	Area	Cr	L	T	P	TH	PH	CWS	PRS	MTE	ETE	PRE
1.	CEN-544	Structural Dynamics	PEC	4	3	1	0	3	0	25	0	25	50	0
2.	CEN-543	Advanced Concrete Design	PEC	4	3	0	2	3	0	15	15	20	40	0
3.	CEN-625	Ground Improvement Design	PEC	4	3	1	0	3	0	25	0	25	50	0
4.	CEN-524	Soil Dynamics and Machine Foundations	PEC	4	3	-	2	3	0	15	25	20	40	0
5.	CEN-431	Advanced Highway Engineering	PEC	4	3	1	2/2	3	0	20	20	20	40	0
6.	CEN-564	Geometric Design	PEC	4	3	1	0	3	0	25	0	25	50	0
7.	CEN-514	Geodesy and GPS Surveying	PEC	4	3	0	2	3	0	15	25	20	40	0
8.	CEN-642	Analysis and Design of Bridges	PEC	4	3	0	2	3	0	15	25	20	40	0
9.	CEN-545	Finite Element Methods	PEC	4	3	0	2	3	0	15	25	20	40	0
10	CEN-433	Rock Engineering	PEC	4	3	1	0	3	0	25	-	25	50	-
11	CEN-434	Traffic Engineering and management	PEC	4	3	1	0	3	0	25	0	25	50	0
12	CEN-424	Digital Image Processing	PEC	4	3	0	2	3	0	15	25	20	40	0

**Open Elective Courses**

1	CEN-333	Probability Methods in Engineering Problems	OEC	3	3	0	0	3	0	0	0	50	50	0
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**Department of Civil Engineering Minor Specialization Course**

Sl. No.	Subject Code	Course Title	Semester		Credits
			Autumn	Spring	
1.	CEN-102	Solid Mechanics		√	4
2.	CEN-104	Water Supply Engineering		√	4
3.	CEN-106	Geometrics Engineering-I		√	4
4.	CEN-108	Fluid Mechanics		√	4
5.	CEN-207	Structural Analysis-I	√		4
6.	CEN-210	Highway Engineering		√	4
7.	CEN-303	Soil Mechanics	√		4
8.	CEN-411	Construction Planning and Management			4
9.	CEN-413	Building Materials and Construction Technology			4