

B.Tech (Civil Engineering) OVERALL CREDIT STRUCTURE

Undergraduate Core (UC)		Undergraduate Elective (UE)	
Category	Credit	Category	Credit
DC	59	DE	25
BS	19	HM	6(Minimum)
ES	20	OC	25 (Balance)
HM	6	UN	00 (Courses)
Total	104	Total	56
Grand Total C+UE			160

Course Code	Course	L-T-P	Credit
Basic Sciences (BS)			
SCL102	Applied Mathematics-I	3-2-0	4
SCL103	Applied Mathematics-II	3-2-0	4
SCL201	Applied Mathematics-III*	3-0-0	3
SCL104	Applied Physics	3-0-2	4
SCL105	Applied Chemistry	3-0-2	4
Total			19

Engineering Arts and Sciences (ES)		L-T-P	Credit
CEL101	Engineering Mechanics	3-0-2	4
EEL101	Elementary Electrical Engineering	3-0-2	4
MEL101	Engineering Drawing	3-0-2	4
CSL101	Computer Programming	3-0-2	4
MEP101	Mechanical Workshop	0-0-2	1
EEP101	Electrical Workshop	0-0-2	1
CEL102	Environmental Science	2-0-0	2
Total			20

Humanities and Management (Core) (HM)		L-T-P	Credit
HMP102	Spoken English	1-0-2	2
HMP103	Written English	1-2-0	2
HML101	Social Science	2-0-0	2
Total			6

Non Credit Requirement		L-T-P	Credit
NCN101	NCC#	-	0
NCN102	NSS#	-	0
NCN103	NSO#	-	0
SPB101	Sports-1#	0-0-4	0
SPB102	Sports-II#	0-0-4	0
CED201	Project	-	0
CED301	Literature Review Paper Writing	-	0
CET201	Practical Training	-	0
HMD201	Community Project	-	0

#A student has to opt at least one from NCC, NSS, NSO and sports (I & II both).
Note: Students are required to opt the core courses in the order (*, **, ***)
Students are advised that they may give preference to DE courses
CEL 402, CEL 414 and CEL 418.

Departmental Core (DC)		L-T-P	Credit
CEL201	Strength of Materials*	3-2/2-2/2	4
CEL202	Fluid Mechanics*	3-2/2-2/2	4
CEL203	Engineering Geology*	2-0-2	3
CEL204	Building Materials and construction Technology*	3-0-2	4
CEL205	Environmental Engineering-I**	3-0-2	4
CEL206	Transportation Engineering-I**	3-0-2	4
CEL207	Surveying*	3-0-2	4
CEL301	Structural Analysis-I*	3-2/2-2/2	4
CEL302	Geotechnical Engineering-I*	3-0-2	4
CEL303	Hydrology and Irrigation Engineering**	3-0-2	4
CEL304	Environmental Engineering-II**	3-0-2	4
CEL305	Structural Analysis-II **	3-2-0	4
CEL306	Geotechnical Engineering-II***	3-0-2	4
CEL307	Design of RCC Structure***	3-2/2-2/2	4
CEL308	Design of Steel Structures***	3-2/2-2/2	4

Departmental Elective (DE)		L-T-P	Credit
SCL403	Probability Theory and Statistics	3-0-0	3
CEL401	Ground Improvement Techniques	3-0-0	3
CEL402	Transportation Engineering-II	3-0-0	3
CEL403	Design of Hydraulic structure	3-2-0	4
CEL404	Rock Engineering	3-0-0	3
CEL405	Industrial Waste Management	3-0-0	3
CEL406	Finite Element Method	3-2-0	4
CEL407	Transportation Planning	3-0-0	3
CEL408	Environmental Impact and Risk Assessment	3-0-0	3
CEL409	Advanced Concrete Design	3-2-0	4
CEL410	River Mechanics	3-0-0	3
CEL411	Traffic Engineering	3-0-0	3
CEL412	Construction Planning and management	3-0-0	3
CEL413	Advanced Foundation Engineering	3-0-0	3
CEL414	Geomatics Engineering	3-0-2	4
CEL415	Non-Destructive Testing of Materials	3-0-2	4
CEL416	Design of Prestressed concrete and Industrial Structures	3-0-2	4
CEL417	Urban Water and Environmental Management	3-0-0	3
CEL418	Estimation and Costing	3-0-0	3
CEL419	Software Lab	0-0-6	3
CEL420	Structure Dynamics	3-0-2	4
CED401	Major Project Part- I	-	1
CED402	Major Project Part -II	-	3

**M.Tech. (Civil Engineering) specialization in Transportation Engineering
OVERALL CREDIT STRUCTURE**

S. No	Category	Symbol	M. Tech (2-Year) (Credits)
1	PG Core	PC	30
1.1	Departmental Core	DC	13
1.2	Project phase-I	P1	05
1.3	Project phase-II	P2	10
1.4	Seminar	SM	02
2	PG Elective	PE	25
2.1	Specialization Electives	SE	19
2.2	Open Courses	OC	06
TOTAL REQUIREMENT			55 (Minimum)

Postgraduate Core (PC)		L-T-P	Credit
CED501	Project Phase –I	-	05
CED502	Project Phase-II	-	10
CED503	Seminar	-	02
CEL406	Finite Element Method	3-2-0	04
CEL421	Numerical Methods in Civil Engineering	3-0-0	03
CEL422	Optimization Technique in Civil Engineering	3-0-0	03
CEL423	Modeling, Analysis and Simulation	3-0-0	03
Specialization Elective (SE)		L-T-P	Credit
CEL401	Ground Improvement Techniques	3-0-0	03
CEL407	Transportation Planning [#]	3-0-0	03
CEL411	Traffic Engineering	3-0-0	03
CEL424	Advanced Civil Engineering Materials	3-0-2	04
CEL427	Advanced Mathematics for Civil Engineers	3-0-0	03
CEL430	Advanced Soil Mechanics	3-0-2	04
CEL431	Airport Planning and Design	3-0-0	03
CEL432	Geometric Design of Transportation Facilities	3-0-0	03
CEL433	Planning, Design and Construction of Rural Roads	3-0-0	03
CEL434	Pavement Materials and Evaluation	3-0-2	04
CEL435	Pavement Analysis and Design [#]	3-0-0	03
CEL436	Traffic Flow Theory	3-0-0	03
CEL437	Transport Economics	3-0-0	03

**M.Tech. (Civil Engineering) specialization in Structural Engineering
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1.3	Project phase-II	P2	10
1.4	Seminar	SM	02
2	PG Elective	PE	25
2.1	Specialization Electives	SE	19
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TOTAL REQUIREMENT			55 (Minimum)

Postgraduate Core (PC)		L-T-P	Credit
CED501	Project Phase –I	-	05
CED502	Project Phase-II	-	10
CED503	Seminar	-	02
CEL406	Finite Element Method	3-2-0	04
CEL421	Numerical Methods in Civil Engineering	3-0-0	03
CEL422	Optimization Technique in Civil Engineering	3-0-0	03
CEL423	Modeling, Analysis and Simulation	3-0-0	03
Specialization Elective (SE)		L-T-P	Credit
CEL409	Advanced Concrete Design	3-2-0	04
CEL415	Non Destructive Testing of Materials	3-0-2	04
CEL416	Design of Prestressed Concrete and Industrial Structures	3-0-2	04
CEL420	Structural Dynamics [#]	3-0-2	04
CEL424	Advanced Civil Engineering Materials	3-0-2	04
CEL425	Theory of Elasticity [#]	3-0-0	03
CEL426	Advanced Structural Mechanics	3-0-0	03
CEL427	Advanced Mathematics for Civil Engineers	3-0-0	03
CEL428	Concepts of Green Building Design	3-0-0	03
CEL429	Reliability Analysis and Reliability based Design of Structures	3-0-0	03
CEL501	Continuum Mechanics	3-0-0	03
CEL502	Earthquake Resistance Design of Structure	3-0-0	03
CEL503	Theory of plate and shells	3-0-0	03
CEL504	Theory of Plasticity	3-0-0	03
CEL505	Stability of Structures	3-0-0	03