B.Tech. Programme

Civil Engineering

CURRICULUM

for 2010 admissions onwards

GENERAL INFORMATION

In this section, category-wise distribution of credits for B.Tech (Civil Engineering) program for all semesters are given, followed by curriculum.

Code Numbering

Each course is assigned a code number consisting of two letters followed by three digits. The two-letter code indicates the department offering the course. The digit code indicates the level of the course (100,200,300,400 etc..). The odd number indicates courses offered in odd semesters and even number indicates courses offered in even semesters. When a subject is offered in both even and odd semesters, the digit code ends with a zero. Generally Elective courses begin with * 51 and lab courses begin with *90. Courses in humanity subjects (except language) are offered by any department where expertises are available.

ABBREVIATIONS

Curriculum

L	-	Lecture	H	-	Humanities
T	-	Tutorial	S	-	Science
P	-	Practical	M	-	Mathematics
Cr	-	Credit	G	-	General Engg.
Cat	-	Category	C	-	Core Engg.
ES	-	Exam Slot	Pr	-	Project

Departments

AES	-	Aerospace Engineering
CHE	-	Chemical Engineering
CHY	-	Chemistry
CSE	-	Computer Science and Engineering
CVL	-	Civil Engineering
ECE	-	Electronics and Communication Engineering
EEE	-	Electrical and Electronics Engineering
EIE	-	Electronics and Instrumentation Engineering
HUM	-	Humanities and Languages
MAT	-	Mathematics
MEC	-	Mechanical Engineering
PHY	-	Physics

B Tech Programme
CIVIL ENGINEERING
REVISED CURRICULUM

(2010 admissions onwards)

SEMESTER I:

Cat.	Code	Course Title	L-T-P	Cr	ES
H	ENG111	Communicative English	2 0 2	3	G
S	PHY100/	Physics/	3 0 0	3	B
	CHY100	Chemistry			
M	MAT111	Calculus, Matrix Algebra and Ordinary Differential Equations	3 1 0	4	A
G	EEE100	Electrical Engineering	3 0 0	3	C
G	MEC100/	Engineering Mechanics/	3 1 0	4	D
	CSE100	Computer Programming	3 0 0	3	
G	MEC181	Engineering Drawing	1 0 3	2	-
S	PHY181/	Physics Lab./	0 0 3	1	-
	CHY181	Chemistry Lab.			
G	MEC180/	Workshop A/	1 0 2	2	-
	EEE180	Workshop B			
G	CSE180	Computer Programming Lab.	0 0 3	1	-
H	CUL101	Cultural Education I	2 0 0	2	H

H = 5 S = 4 M = 4 G = 11   **Total = 24**

SEMESTER II:

Cat.	Code	Course Title	L-T-P	Cr	ES
H	ENG112	Technical Communication	2 0 2	3	G
S	CHY100/	Chemistry/	3 0 0	3	B
	PHY100	Physics			
M	MAT112	Vector Calculus, Fourier Series and Partial Differential Equations	3 1 0	4	A
G	ECE100	Electronics Engineering	3 0 0	3	C
G	CSE100/	Computer Programming/	3 0 0	3	D
	MEC100	Engineering Mechanics	3 1 0	4	
G	MEC182	Computer Aided Drawing	1 0 3	2	-
S	CHY181/	Chemistry Lab./	0 0 3	1	-
	PHY181	Physics Lab.			
G	EEE180/	Workshop B/	1 0 2	2	-
	MEC180	Workshop A			
G	CSE180	Computer Programming Lab.	0 0 3	1	-
H	CUL102	Cultural Education II	2 0 0	2	H

H = 5 S = 4 M = 4 G = 11   **Total = 24**

III Semester

Cat.	Code	Course Title	L-T-P	Cr	ES
M	MAT211	Integral Transforms and Complex Analysis	3 1 0	4	A
C	CVL200	Engineering Geology	2 0 0	2	B
C	CVL201	Surveying	3 1 0	4	C
C	CVL210	Solid Mechanics	3 1 0	4	E
C	CVL211	Construction Materials	2 0 0	2	F
C	CVL220	Principles of Fluid Mechanics	2 1 0	3	D
H		Humanities Elective I	1 0 2	2	H
C	CVL291	Material Testing and Evaluation Lab.	0 0 3	1	-
C	CVL293	Survey Practical	1 0 3	2	-

M = 4 H = 2 C = 18   **Total = 24**

IV Semester

Cat.	Code	Course Title	L-T-P	Cr	ES
M	MAT212	Mathematical Statistics and Numerical Methods	3 1 0	4	A
C	CVL212	Structural Analysis	3 1 0	4	B
C	CVL213	Building Technology	3 0 0	3	C
C	CVL221	Hydraulic Engineering	3 1 0	4	D
C	CVL230	Soil Mechanics	3 1 0	4	E
H		Humanities Elective II	1 0 2	2	H
C	CVL290	Construction Materials Lab.	0 0 3	1	-
C	CVL292	Fluid Mechanics and Machinery Lab.	0 0 3	1	-
H	SSK111	SOFT SKILLS I	0 0 3	1	-

M = 4 H = 3 C = 17   **Total = 24**

V Semester

Cat.	Code	Course Title	L-T-P	Cr	ES
C	CVL314	Advanced Structural Analysis	3 1 0	4	B
C	CVL315	Design of Concrete Structures	3 1 0	4	C
C	CVL331	Foundation Engineering	3 1 0	4	E
C	CVL332	Transportation Engineering I	3 1 0	4	F
H	ENV200	Environmental Studies	3 1 0	4	D
C	CVL391	Geotechnical Engineering Lab.	0 0 3	1	-
C	CVL393	Building Drawing	1 0 3	2	-
H	SSK112	SOFT SKILLS II	0 0 3	1	-

H = 5 C = 19   **Total = 24**

VI Semester

Cat.	Code	Course Title	L-T-P	Cr	ES
C	CVL322	Environmental Engineering	3 1 0	4	C
C	CVL316	Design of Steel Structures	3 1 0	4	D
C	CVL323	Water Resources and Irrigation Engineering	3 1 0	4	E
C	CVL333	Transportation Engineering II	3 1 0	4	F
S		Science Elective I	3 0 0	3	B
C	CVL390	Design and Drawing (RCC and Steel Structures)	1 0 3	2	-
C	CVL392	Environmental Engineering Lab.	0 0 3	1	-
H	SSK113	SOFT SKILLS III	0 0 3	1	-

S = 3 H = 1 C = 19   **Total = 23**

VII Semester

Cat.	Code	Course Title	L-T-P	Cr	ES
C		Elective I	3 0 0	3	D
C		Elective II	3 0 0	3	E
C		Elective III	3 0 0	3	F
S		Science Elective II	3 0 0	3	B
H	MNG400	Principles of Management	3 0 0	3	C
C	CVL491	Design and Drawing (Water Resources Engineering)	1 0 3	2	-
C	CVL493	Quantity Surveying and Valuation	1 0 2	2	-
Pr	CVL497	Seminar	0 0 3	1	-

H = 3   S = 3   C = 13   Pr = 1   **Total = 20**

VIII Semester

Cat.	Code	Course Title	L-T-P	Cr	ES
C		Elective IV	3 0 0	3	F
H		Management Elective	3 0 0	3	C
Pr	CVL499	Project		10	-

H = 3   C = 3   Pr = 10   **Total = 16**

Total credits for the programme = 179

ELECTIVES

STRUCTURAL ENGINEERING

CVL450	Concrete Technology
CVL451	Advanced Concrete Design
CVL452	Advanced Steel Design
CVL453	Pre-stressed Concrete Design
CVL454	Industrial Structures
CVL455	Structural Dynamics and Seismic Design
CVL456	Finite Element Methods
CVL457	Smart Materials and Structures
CVL458	Maintenance and Repair of Buildings
CVL459	Functional Design of Buildings

WATER RESOURCES & ENVIRONMENTAL ENGINEERING

CVL461	Ground Water Hydrology
CVL462	Water Resource Systems Planning and Design
CVL463	Remote Sensing and GIS
CVL464	Advanced Environmental Engineering
CVL465	Industrial Waste Treatment
CVL466	Coastal Engineering

TRANSPORTATION AND GEOTECHNICAL ENGINEERING

CVL470	Pavement Design
CVL471	Urban Transportation Planning
CVL472	Advanced Topics in Traffic Engineering
CVL473	Transportation System Management and Control
CVL474	Ground Improvement Techniques
CVL475	Soil Dynamics and Machine Foundations

MANAGEMENT ELECTIVES

CVL480	Construction Management
CVL481	Construction Planning and Control

SCIENCE ELECTIVES (3 0 0 3)

CHY250	Catalytic Chemistry
CHY251	Chemistry of Engineering Materials
CHY252	Chemistry of Advanced Materials
CHY253	Advanced Polymer Chemistry
CHY254	Polymers for Electronics
CHY255	Chemistry of Toxicology
CHY256	Chemistry of Nanomaterials
CHY257	Biomaterials Science
CHY258	Environmental Chemistry
CHY259	Instrumental Methods of Analysis
CHY260	Organic Synthesis and Stereochemistry
CHY261	Unit Processes in Organic Synthesis
CHY262	Medicinal Organic Chemistry
CHY263	Organic Reaction Mechanisms
CHY264	Green Chemistry and Technology
CHY270	Corrosion Science
CHY271	Electrochemical Energy Systems and Processes
CHY272	Computational Chemistry and Molecular Modelling
CHY273	Fuel Cells – Principles and Applications
CHY274	Solid State Chemistry
PHY250	Electrical Engineering Materials
PHY251	Optoelectronic Devices
PHY252	Physics of Semiconductor Devices
PHY253	Electromagnetic Fields and Waves
PHY254	Microelectronic Fabrication
PHY255	Electronic Materials Science
PHY260	Physics of Lasers and Applications
PHY261	Lasers in Material Processing
PHY262	Non-linear Dynamics
PHY263	Concepts of Nanophysics and Nanotechnology
PHY264	Thin Film Physics
PHY270	Medical Physics
PHY271	Advanced Classical Dynamics
PHY272	Quantum Physics and its Applications
PHY273	Computational Physics
PHY274	Astrophysics

HUMANITIES ELECTIVES (1 0 2 2)

CUL151	Achieving Excellence in Life - An Indian Perspective
CUL152	Exploring Science and Technology in Ancient India
CUL153	Excellence in Daily Life
CUL154	Yoga Psychology
ENG250	Professional Communication
ENG251	Business Communication
ENG252	Indian Thought in English
ENG253	Insights into Life through English Literature
FRE201	Proficiency in French Language (Lower)
FRE202	Proficiency in French Language (Higher)
GER201	Proficiency in German Language (Lower)
GER202	Proficiency in German Language (Higher)
GER211	German for Beginners I
GER212	German for Beginners II
HUM250	Indian Classics for the Twenty-first Century
HUM251	Introduction to India Studies
HUM252	Glimpses of Eternal India
HUM253	Glimpses into the Indian Mind - The Growth of Modern India
HUM254	Glimpses of Indian Economy and Polity
HUM255	Science and Society – An Indian Perspective
JAP201	Proficiency in Japanese Language (Lower)
JAP202	Proficiency in Japanese Language (Higher)