

BTech Civil Engineering Course Structure 2020-24

I SEMESTER – CHEMISTRY CYCLE											
#	Course Type	Course Code	Course Name	Hours			Total	Credits			Total
				L	T	P	Marks	L	T	P	Credits
1	BSC	MA131	Mathematics – I	3	0	0	100	3	0	0	3
2	BSC	CH132P	Chemistry	3	0	2	100	3	0	1	4
3	ESC	EC133P	Basic Electronics	3	0	2	100	3	0	1	4
4	ESC	CS134P	Computer Programming	3	0	2	100	3	0	1	4
5	ESC	ME135	Basic Mechanical Engineering and Nano-science	3	0	0	100	3	0	0	3
6	HSMC	TE136P	Technical English	1	0	2	100	1	0	1	2
7	ESC	ME 151	Workshop Practice Lab	0	0	2	50	0	0	1	1
8	HSMC	HE171	Holistic Education-I	1	0	0	---	1	0	0	1
			Total				650				22

I SEMESTER – PHYSICS CYCLE											
#	Course Type	Course Code	Course Name	Hours			Total	Credits			Total
				L	T	P	Marks	L	T	P	Credits
1	BSC	MA131	Mathematics – I	3	0	0	100	3	0	0	3
2	BSC	PH132P	Physics	3	0	2	100	3	0	1	4
3	ESC	EE133P	Basic Electrical Engineering	3	0	2	100	3	0	1	4
4	ESC	CE134P	Basics of Civil Engineering & Engineering Mechanics	3	0	2	100	3	0	1	4
5	ESC	EG135P	Engineering Graphics	2	0	2	100	2	0	1	3
6	BSC	BS136	Basic Biology	2	0	0	50	2	0	0	2
7	HSMC	HE171	Holistic Education-I	1	0	0	---	1	0	0	1
			Total				550				21

II SEMESTER – CHEMISTRY CYCLE											
#	Course Type	Course Code	Course Name	Hours			Total Marks	Credits			Total Credits
				L	T	P		L	T	P	
1	BSC	MA231	Mathematics – II	3	0	0	100	3	0	0	3
2	BSC	CH232P	Chemistry	3	0	2	100	3	0	1	4
3	ESC	EC233P	Basic Electronics	3	0	2	100	3	0	1	4
4	ESC	CS234P	Computer Programming	3	0	2	100	3	0	1	4
5	ESC	ME235	Basic Mechanical Engineering and Nano-science	3	0	0	100	3	0	0	3
6	HSMC	TE236P	Technical English	1	0	2	100	1	0	1	2
7	ESC	ME 251	Workshop Practice Lab	0	0	2	50	0	0	1	1
8	HSMC	HE271	Holistic Education-II	1	0	0	---	1	0	0	1
			Total				650				22

II SEMESTER – PHYSICS CYCLE											
#	Course Type	Course Code	Course Name	Hours			Total Marks	Credits			Total Credits
				L	T	P		L	T	P	
1	BSC	MA231	Mathematics – II	3	0	0	100	3	0	0	3
2	BSC	PH232P	Physics	3	0	2	100	3	0	1	4
3	ESC	EE233P	Basic Electrical Engineering	3	0	2	100	3	0	1	4
4	ESC	CE234P	Basics of Civil Engineering & Engineering Mechanics	3	0	2	100	3	0	1	4
5	ESC	EG235P	Engineering Graphics	2	0	2	100	2	0	1	3
6	BSC	BS236	Basic Biology	2	0	0	50	2	0	0	2
7	HSMC	HE271	Holistic Education-II	1	0	0	---	1	0	0	1
			Total				550				21

III Semester							
#	Course Type	Course Code	Course Name	Hours	Total Marks	Credits	Total Credits

1	PCC	CE431P	Hydraulic Engineering	3	0	2	100	3	0	1	4
2	PCC	CE432	Mechanics of Materials	3	1	0	100	3	1	0	4
3	PCC	CE433P	Materials, Testing & Evaluation	3	0	2	100	3	0	1	4
4	PCC	CE434P	Instrumentation & Sensor Technologies for Civil Engineering Applications	3	0	2	100	3	0	1	4
6	HSMC	HS402	Professional Ethics	2	0	0	50	2	0	0	2
7	MC Non-Credit	MC402	Cyber Security	2	0	0	0	0	0	0	0
8	HSMC	HE471	Holistic Education-IV	1	0	0	0	1	0	0	1
			Total				500				19

V Semester

#	Course Type	Course Code	Course Name	Hours			Total Marks	Credits			Total Credits
				L	T	P		L	T	P	

1	PCC	CE531	Structural Engineering	3	1	0	100	3	0	0	4
2	PCC	CE532P	Geotechnical Engineering	3	0	2	100	3	0	1	4
3	PCC	CE533	Hydrology & Water Resources Engineering	3	1	0	100	3	1	0	4
5	PEC	CE534EC01	Program Elective – 1	3	0	0	100	3	0	0	3
6	HSMC	HS503	Project Management & Finance	2	0	2	100	2	0	1	3
7	MC Non-Credit		Indian Constitution	0	0	0	-	0	0	0	0
			Total				550				18

VI Semester											
#	Course Type	Course Code	Course Name	Hours			Total Marks	Credits			Total Credits
				L	T	P		L	T	p	
1	PCC	CE631P	Environmental Engineering	3	0	2	100	3	0	1	4
2	PCC	CE632P	Highway Engineering	3	0	2	100	3	0	1	4
3	PEC	CE633EC02	Program Elective – 2	3	0	0	100	3	0	0	3
4	PEC	CE634EC03	Program Elective – 3	3	0	0	100	3	0	0	3
5	OE	CE635OE01	Open Elective - 1	3	0	0	100	3	0	0	3
6	PCC	CE651	Extensive Survey Project	1	0	2	50	1	0	1	2
			Total				550				19

VII Semester											
#	Course Type	Course Code	Course Name	Hours			Total Marks	Credits			Total Credits
				L	T	P		L	T	P	
1	PCC	CE731P	Engineering Economics, Estimation & Costing	3	0	2	100	3	0	1	4
2	PEC	CE732EC04	Program Elective – 4	3	0	0	100	3	0	0	3
3	PEC	CE733EC05	Program Elective – 5	3	0	0	100	3	0	0	3
4	OE	CE734OE02	Open Elective – 2	3	0	0	100	3	0	0	3
5	PROJ	CE771	Internship	0	0	2	50	0	0	2	2
6	PROJ	CE772	Field Practice	1	0	2	50	0	0	1	2
7	PROJ	CE773	Project Work – I	0	0	8	100	0	0	4	4
8	HSMC	HS704	Service Learning	1	0	2	50	1	0	1	2
			Total				650				23

VIII Semester											
#	Course Type	Course Code	Course Name	Hours			Total Marks	Credits			Total Credits
				L	T	P		L	T	P	
1	PEC	CE831	Program Elective – 6	3	0	0	100	3	0	0	3
3	PROJ	CE872	Seminar	0	0	2	50	0	0	1	1
4	PROJ	CE873	Project Stage-II	0	0	16	300	0	0	8	8
			Total				450				12

PROGRAM ELECTIVE

ELECTIVE- A-Construction Engineering & Management

Sl. No.	Course Code	Course Name	Hours			Marks	Credits			Total Credits
			L	T	P		L	T	P	
1	CE534EC-01A	Building Construction Practice	3	0	0	100	3	0	0	3
2	CE633EC-02A	Building information modelling	3	0	0	100	3	0	0	3
3	CE634EC-03A	Construction Cost Analysis	3	0	0	100	3	0	0	3
4	CE732EC-04A	Sustainable Construction Methods	3	0	0	100	3	0	0	3
5	CE733EC-05A	Contracts Management	3	0	0	100	3	0	0	3

ELECTIVE- B-Transportation Engineering

Sl. No.	Course Code	Course Name	Hours			Marks	Credits			Total Credits
			L	T	P		L	T	P	
1	CE535EC-01B	Transportation Engineering	3	0	0	100	3	0	0	3
2	CE633EC-02B	Traffic Engineering and Management	3	0	0	100	3	0	0	3
3	CE634EC-03B	Urban Transportation Planning	3	0	0	100	3	0	0	3
4	CE732EC-04B	Pavement Materials	3	0	0	100	3	0	0	3
5	CE733EC-05B	Pavement Design	3	0	0	100	3	0	0	3

ELECTIVE- C-Environmental Engineering

Sl. No.	Course Code	Course Name	Hours			Marks	Credits			Total Credits
			L	T	P		L	T	P	
1	CE535EC-01C	Transport of Water and Wastewater	3	0	0	100	3	0	0	3
2	CE633EC-02C	Environmental Laws and Policy	3	0	0	100	3	0	0	3
3	CE634EC-03C	Physio-Chemical Processes for Water and Wastewater Treatment	3	0	0	100	3	0	0	3
4	CE732EC-04C	Solid and Hazardous Waste Management	3	0	0	100	3	0	0	3
5	CE733EC-05C	Air and Noise Pollution and Control	3	0	0	100	3	0	0	3

ELECTIVE- D-Hydraulics

Sl. No	Course Code	Course Name	Hours			Marks	Credits			Total Credits
			L	T	P		L	T	P	
1	CE535EC-01D	Irrigation Engineering and Hydraulic Structures	3	0	0	100	3	0	0	3
2	CE633EC-02D	Pipeline Engineering	3	0	0	100	3	0	0	3
3	CE634EC-03D	Open Channel flow	3	0	0	100	3	0	0	3
4	CE732EC-04D	River Engineering	3	0	0	100	3	0	0	3
5	CE733EC-05D	Hydraulic modelling	3	0	0	100	3	0	0	3
6	CE733EC-06D	Basics of Computational Hydraulics	3	0	0	100	3	0	0	3

ELECTIVE- E-Hydrology & Water Resources Engineering

Sl. No.	Course Code	Course Name	Hours			Marks	Credits			Total Credits
			L	T	P		L	T	P	
1	CE535EC-01E	Water Quality Engineering	3	0	0	100	3	0	0	3
2	CE633EC-02E	Surface Hydrology	3	0	0	100	3	0	0	3
3	CE634EC-03E	Environmental Fluid Mechanics	3	0	0	100	3	0	0	3
4	CE732EC-04E	Water Resources Field Methods	3	0	0	100	3	0	0	3
5	CE732EC-05B	Drone Based Surveying	3	0	0	100	3	0	0	3

ELECTIVE- F-Structural Engineering

Sl. No.	Course Code	Course Name	Hours			Marks	Credits			Total Credits
			L	T	P		L	T	P	
1	CE535EC-01F	Structural Analysis-I	3	0	0	100	3	0	0	3
2	CE633EC-02F	Structural Analysis-II	3	0	0	100	3	0	0	3
3	CE634EC-03F	Reinforced Concrete	3	0	0	100	3	0	0	3
4	CE732EC-04F	Prestressed Concrete	3	0	0	100	3	0	0	3
5	CE733EC-05F	Design of Steel Structures	3	0	0	100	3	0	0	3
6	CE733EC-06F	Concrete Technology	3	0	0	100	3	0	0	3

ELECTIVE- G-Geotechnical Engineering

Sl. No.	Course Code	Course Name	Hours			Marks	Credits			Total Credits
			L	T	P		L	T	P	
1	CE535EC-01G	Foundation Engineering	3	0	0	100	3	0	0	3
2	CE633EC-02G	Geotechnical Design	3	0	0	100	3	0	0	3
3	CE634EC-03G	Structural Geology	3	0	0	100	3	0	0	3
4	CE732EC-04G	Offshore Engineering	3	0	0	100	3	0	0	3
5	CE733EC-05G	Rock Mechanics	3	0	0	100	3	0	0	3

OPEN ELECTIVE - 1

Offered by Department of Civil Engineering

Sl. No.	Course Code	Course Name	Hours			Mark ^s	Credits			Total Credits
			L	T	P		L	T	P	
1	CE636OE1	Solid Waste Management	3	0	0	100	3	0	0	3
2	CE636OE2	Environmental Impact Assessment	3	0	0	100	3	0	0	3
3	CE636OE3	Sustainable and Green Technology	3	0	0	100	3	0	0	3
4	CE636OE4	Disaster Management	3	0	0	100	3	0	0	3
5	CE636OE5	Air Pollution and Control	3	0	0	100	3	0	0	3
6	CE636OE6	GIS & Remote Sensing Techniques and Applications	3	0	0	100	3	0	0	3

Offered by Department of Computer Science and Engineering

Sl. No.	Course Code	Course Name	Hours			Mark ^s	Credits			Total Credits
			L	T	P		L	T	P	
1	CS636OE1	Web Programming Concepts	3	0	0	100	3	0	0	3
2	CS636OE2	Data Structures	3	0	0	100	3	0	0	3
3	CS636OE3	Java Programming	3	0	0	100	3	0	0	3
4	CS636OE4	Software Testing Techniques	3	0	0	100	3	0	0	3
5	CS636OE5	Software Engineering Methodologies	3	0	0	100	3	0	0	3
6	CS636OE6	User Interface Design Concepts	3	0	0	100	3	0	0	3

Offered by Department of Electronics and Communications Engineering

Sl. No.	Course Code	Course Name	Hours			Mark ^s	Credits			Total Credits
			L	T	P		L	T	P	
1	EC636OE1	Basics of Microprocessors	3	0	0	100	3	0	0	3
2	EC636OE2	Introduction to Robotic Design	3	0	0	100	3	0	0	3

3	EC636OE3	Principles of Communication	3	0	0	100	3	0	0	3
4	EC636OE4	Basics of VLSI Design	3	0	0	100	3	0	0	3
5	EC636OE5	Advanced Digital System Design	3	0	0	100	3	0	0	3
6	EC636OE6	Basics of Digital Signal Processing	3	0	0	100	3	0	0	3

Offered by Electrical and Electronics Engineering

Sl. No.	Course Code	Course Name	Hours			Mark ^s	Credits			Total Credits
			L	T	P		L	T	P	
1	EE636OE1	Energy Auditing and Management	3	0	0	100	3	0	0	3
2	EE636OE2	Nonconventional Energy Sources	3	0	0	100	3	0	0	3
3	EE636OE3	Introduction of Hybrid Electric Vehicles	3	0	0	100	3	0	0	3
4	EE636OE4	Electrical System Design for Residential and Commercial Buildings	3	0	0	100	3	0	0	3
5	EE636OE5	Smart Grids	3	0	0	100	3	0	0	3
6	EE636OE6	Robotics and Automation	3	0	0	100	3	0	0	3
7	EE636OE7	Power Quality	3	0	0	100	3	0	0	3
8	EE636OE8	Matrix Computations	3	0	0	100	3	0	0	3
9	EE636OE9	Electrical Machines and Drives	3	0	0	100	3	0	0	3

Offered by Department of Mechanical Engineering

Sl. No.	Course Code	Course Name	Hours			Mark ^s	Credits			Total Credits
			L	T	P		L	T	P	
1	ME636OE1	Industrial Robotics	3	0	0	100	3	0	0	3
2	ME636OE2	Engineering Materials	3	0	0	100	3	0	0	3
3	ME636OE3	Basic Automobile Engineering	3	0	0	100	3	0	0	3
4	ME636OE4	Project Management	3	0	0	100	3	0	0	3
5	ME636OE5	Basic Aerospace Engineering	3	0	0	100	3	0	0	3

6	ME636OE6	Computer Application in Design	3	0	0	100	3	0	0	3
7	ME636OE7	CAD/CAM	3	0	0	100	3	0	0	3
8	ME636OE8	Non-Conventional Energy	3	0	0	100	3	0	0	3
9	ME636OE9	Internal Combustion Engines	3	0	0	100	3	0	0	3
10	ME636OE10	Finite Element Analysis	3	0	0	100	3	0	0	3

Offered by Department of Science and Humanities

Sl. No.	Course Code	Course Name	Hours			Marks	Credits			Total Credits
			L	T	P		L	T	P	
1	MA 636OE1	Fundamentals of Boundary Layer Theory	3	0	0	100	3	0	0	3
2	MA 636OE2	Non – Linear Programming Problems	3	0	0	100	3	0	0	3
3	MA 636OE3	Numerical Solution of Differential Equations	3	0	0	100	3	0	0	3
4	MA 636OE4	Mathematical Statistics	3	0	0	100	3	0	0	3
5	CH636OE1	Electronic Materials	3	0	0	100	3	0	0	3
6	CH636OE2	Catalyst Technology	3	0	0	100	3	0	0	3
7	CH636OE3	Environmental Chemistry	3	0	0	100	3	0	0	3
8	PH636OE1	Technical ceramics	3	0	0	100	3	0	0	3
9	PH636OE2	Advances in materials science and engineering	3	0	0	100	3	0	0	3
10	PH636OE3	Nuclear physics	3	0	0	100	3	0	0	3

OPEN ELECTIVE - 2

Sl. No.	Course Code	Course Name	Hours			Marks	Credits			Total Credits
			L	T	P		L	T	P	

1	HU736OE1	German Language	3	0	0	50	2	0	0	2
2	HU736OE2	Media Studies for Engineering	3	0	0	50	2	0	0	2
3	HU736OE3	Technical writing and editing	3	0	0	50	2	0	0	2
4	HU736OE4	Piano Grade	3	0	0	50	2	0	0	2
5	HU736OE5	Western Music Theory Grade	3	0	0	50	2	0	0	2
6	HU736OE6	French Language	3	0	0	50	2	0	0	2
7	HU736OE7	Applied Theatre	3	0	0	50	2	0	0	2