

Curriculum (2018-19 Batches onwards)

Department of Civil Engineering

PART TIME

1. Definition of Credit:

1 Hr. Lecture (L) per week 1 credit

1 Hr. Tutorial (T) per week 1 credit

2 Hr. Practical (P) per week 1 credit

2. Credits:

A Credits of **104** for a student to be eligible to get Under Graduate degree in Engineering. A student will be eligible to get Under Graduate degree with Honors, if he/she completes an additional 20 credits. These could be acquired through MOOCs.

3. Structure of Undergraduate Engineering program:

S.No.	Category	Breakup of Credits (Total 104)
1	Basic Science courses	12
2	Engineering Science courses including workshop, drawing, basics of electrical/mechanical/computer etc	3
3	Professional core courses	61
4	Professional Elective courses relevant to chosen specialization/branch	18
5	Project work, seminar and internship in industry or elsewhere	10

4. Course code and definition:

BSC: Basic Science Courses **ESC:** Engineering Science Courses **PCC:** Professional core courses

PEC: Professional Elective courses **LC:** Laboratory course

1. BASIC SCIENCE COURSES

Semester	Course Title	Hours/Week			Credit
		L	T	P	
1	Mathematics –I (Calculus, Multivariable Calculus and Linear Algebra)	3	1	0	4
2	Mathematics –II (Differential Equations & Numerical Methods)	3	1	0	4
3	Mathematics – III (Probability Theory and Statistics)	3	1	0	4
Total Learning Credits					12

1. ENGINEERING SCIENCE COURSE

Semester	Course Title	Hours/Week			Credit
		L	T	P	
1	Engineering Mechanics	2	1	0	3
Total Learning Credits					3

4. PROFESSIONAL CORE COURSES

Semester	Course Title	Hours/Week			Credit
		L	T	P	
1	Fluid Mechanics	2	1	0	3
1	Solid Mechanics	2	1	0	3
1	Concrete Technology	3	0	0	3
2	Hydraulic Engineering	2	1	0	3
2	Geotechnical Engineering	3	0	0	3
2	Structural Mechanics - I	2	1	0	3
2	Geotechnical Engineering Laboratory	0	0	3	2
3	Hydrology & Water Resources Engineering	3	0	0	3
3	Transportation Engineering	3	0	0	3
3	Structural Mechanics - II	2	1	0	3
3	Transportation Engineering Laboratory	0	0	3	2
4	Design of Concrete Structures - I	2	1	0	3
4	Design of Steel Structures	2	1	0	3
4	STADD PRO laboratory	0	0	3	2
5	Environmental Engineering - I	3	0	0	3
5	Remote Sensing & GIS	3	0	0	3
5	Remote Sensing & GIS Laboratory	0	0	3	2
6	Design of Concrete Structures - II	2	1	0	3
6	Environmental Engineering - II	3	0	0	3
6	Estimation, Costing & Valuation	2	1	0	3
6	Revit Architecture laboratory	0	0	3	2
7	Construction Engineering & Management	3	0	0	3
Total Learning Credits					61

5. PROFESSIONAL ELECTIVE COURSES

Semester	Course Title	Hours/Week			Credit
		L	T	P	
4	Foundation Engineering	3	0	0	3
	Geotechnical Design				
	Offshore Engineering				
	Rock Mechanics				
	Environmental Geo-technology				
	Ground improvement techniques				
5	Building Construction Practice	3	0	0	3
	Construction Project Planning & Systems				
	Sustainable Construction Methods				
	Contracts Management				
	Repairs & Rehabilitation of Structures				
5	Pavement Design	3	0	0	3
	Public Transportation Systems				
	Traffic Engineering and Management				
	Urban Transportation Planning				
	Geometric Design of Highways				
	Highway Construction and Management				
	High Speed Rail Engineering				
6	Design of hydraulic structures/Irrigation Engineering	3	0	0	3
	Pipeline Engineering				
	Groundwater				
	Surface Hydrology				
6	Wood Structures	3	0	0	3
	Masonry Structures				
	Structural Analysis by Matrix Methods				
	Pre stressed Concrete				
	Industrial Structures				
	Earthquake Engineering				
7	Ecological Engineering	3	0	0	3
	Rural Water Supply and Onsite Sanitation Systems				
	Water and Air Quality Modeling				
	Solid and Hazardous Waste Management				
	Air and Noise Pollution and Control				
	Environmental Impact Assessment and Life Cycle Analyses				
Total Learning Credits					18

6. PROJECT

Semester	Course Title	Hours/Week			Credit
		L	T	P	
8	Project	0	0	0	10
Total Learning Credits					10

Semester-wise structure of curriculum

[L= Lecture, T = Tutorials, P = Practical & C = Credits]

Semester I (First year]

Sl.No	Category	Code	Course Title	Hours/Week			Credit
				L	T	P	
1	BSC	BCEP181T10	Mathematics - I(Calculus, Multivariable Calculus and Linear Algebra)	3	1	0	4
2	ESC	BCEP181T20	Engineering Mechanics	2	1	0	3
3	PCC	BCEP181T30	Fluid Mechanics	2	1	0	3
4	PCC	BCEP181T40	Solid Mechanics	2	1	0	3
5	PCC	BCEP181T50	Concrete Technology	3	0	0	3
Total Credits							16

Semester II (First year]

Sl.No	Category	Code	Course Title	Hours/Week			Credit Points
				L	T	P	
1	BSC	BCEP182T10	Mathematics - II (Differential Equations & Numerical Methods)	3	1	0	4
2	PCC	BCEP182T20	Hydraulic Engineering	2	1	0	3
3	PCC	BCEP182T30	Geotechnical Engineering	2	1	0	3
4	PCC	BCEP182T40	Structural Mechanics - I	2	1	0	3
5	PCC	BCEP182P50	Geotechnical Engineering Laboratory	0	0	3	2
Total Credits							15

Semester III (Second year]

Sl.No	Category	Code	Course Title	Hours/Week			Credit
				L	T	P	
1	BSC	BCEP183T10	Mathematics-III (Probability Theory and Statistics)	3	1	0	4
2	PCC	BCEP183T20	Hydrology & Water Resources Engineering	3	0	0	3
3	PCC	BCEP183T30	Transportation Engineering	3	0	0	3
4	PCC	BCEP183T40	Structural Mechanics - II	2	1	0	3
5	PCC	BCEP183P50	Transportation Engineering Laboratory	0	0	3	2
Total Credits							15

Semester IV (Second year]

Sl.No	Category	Code	Course Title	Hours/Week			Credit
				L	T	P	
1	PCC	BCEP184T10	Design of Concrete Structures -I	2	1	0	3
2	PCC	BCEP184T20	Design of Steel Structures	2	1	0	3
3	PEC	BCEP184E1A – E!F	Elective-I	3	0	0	3
4	PEC	BCEP184E2E	Elective-II	3	0	0	3
5	PCC	BCEP184P50	STADD PRO lab	0	0	3	2
Total Credits							14

Semester V (Third year]

Sl.No	Category	Code	Course Title	Hours/Week			Credit
				L	T	P	
1	PCC	BCEP185T10	Environmental Engineering I	3	0	0	3
2	PCC	BCEP185T20	Remote Sensing& GIS	3	0	0	3
3	PEC	BCEP185E3A-3G	Elective-III	3	0	0	3
4	PEC	BCEP185E4A-4D	Elective-IV	3	0	0	3
5	PCC	BCEP185P50	Remote Sensing& GIS Laboratory	0	0	3	2
Total Credits							14

Semester VI (Third year]

Sl.No	Category	Code	Course Title	Hours/Week			Credit
				L	T	P	
1	PCC	BCEP186T10	Design of Concrete Structures -II	2	1	0	3
2	PCC	BCEP186T20	Environmental Engineering II	3	0	0	3
	PCC	BCEP186T30	Estimation, Costing & Valuation	2	1	0	3
4	PEC	BCEP186E5A-5F	Elective - V	3	0	0	3
5	PCC	BCEP186P50	Revit Architecture Lab	0	0	3	2
Total Credits							14

Semester VII (Final year]

Sl.No	Category	Code	Course Title	Hours/Week			Credit
				L	T	P	
1	PCC	BCEP187T10	Construction Engineering & Management	3	0	0	3
2	PEC	BCEP187E6A-6G	Elective - VI	3	0	0	3
3	PROJ	BCEP187P30	Project work Phase-II	0	0	12	10
Total Credits							16

PROFESSIONAL ELECTIVE COURSES

Sl.No	Category	Code	Course Title	Hours/Week			Credit
				L	T	P	
PEC - I Geotechnical Engineering							
1	PEC	BCEP184E1A	Foundation Engineering	3	0	0	3
2		BCEP184E1B	Geotechnical Design	3	0	0	3
3		BCEP184E1C	Offshore Engineering	3	0	0	3
4		BCEP184E1D	Rock Mechanics	3	0	0	3
5		BCEP184E1E	Environmental Geo-technology	3	0	0	3

6		BCEP184E1F	Ground improvement techniques	3	0	0	3
PEC - II Construction Engineering & Management							
7	PEC	BCEP184E2A	Building Construction Practice	3	0	0	3
8		BCEP184E2B	Construction Project Planning & Systems	3	0	0	3
9		BCEP184E2C	Sustainable Construction Methods	3	0	0	3
10		BCEP184E2D	Contracts Management	3	0	0	3
11		BCEP184E2E	Repairs & Rehabilitation of Structures	3	0	0	3
PEC - III Transportation Engineering							
12	PEC	BCEP185E3A	Pavement Design	3	0	0	3
13		BCEP185E3B	Public Transportation Systems	3	0	0	3
14		BCEP185E3C	Traffic Engineering and Management	3	0	0	3
15		BCEP185E3D	Urban Transportation Planning	3	0	0	3
16		BCEP185E3E	Geometric Design of Highways	3	0	0	3
17		BCEP185E3F	Highway Construction and Management	3	0	0	3
18		BCEP185E3G	High Speed Rail Engineering	3	0	0	3
PEC - IV Hydraulics, Hydrology & Water Resources Engineering							
19		BCEP185E4A	Design of hydraulic structures/Irrigation Engineering	3	0	0	3
20		BCEP185E4B	Pipeline Engineering	3	0	0	3
21		BCEP185E4C	Groundwater	3	0	0	3
22		BCEP185E4D	Surface Hydrology	3	0	0	3
PEC – V Structural Engineering							
23	PEC	BCEP186E5A	Wood Structures	3	0	0	3
24		BCEP186E5B	Masonry Structures	3	0	0	3
25		BCEP186E5C	Structural Analysis by Matrix Methods	3	0	0	3
26		BCEP186E5D	Pre stressed Concrete	3	0	0	3
27		BCEP186E5E	Industrial Structures	3	0	0	3
28		BCEP186E5F	Earthquake Engineering	3	0	0	3
PEC – VI Environmental Engineering							
29	PEC	BCEP187E6A	Ecological Engineering	3	0	0	3
30		BCEP187E6B	Rural Water Supply and Onsite Sanitation Systems	3	0	0	3
31		BCEP187E6C	Water and Air Quality Modeling	3	0	0	3
32		BCEP187E6D	Solid and Hazardous Waste Management	3	0	0	3
33		BCEP187E6E	Air and Noise Pollution and Control	3	0	0	3
34		BCEP187E6F	Environmental Impact Assessment and Life Cycle Analyses	3	0	0	3

