2. COURSE OUTCOMES AND PROGRAM OUTCOMES (120)

The Program Outcomes (POs) as per the NBA guidelines are-

Engineering

Criterion 3	Course Outcomes and Program Outcomes	120

Graduates will be able to:

1. **Engineering knowledge**: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. **Problem analysis**: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3. **Design/development of solutions**: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4. **Conduct investigations of complex problems**: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5. **Modern tool usage**: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
6. **The engineer and society**: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7. **Environment and sustainability**: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8. **Ethics**: Apply ethical principles and commit to professional ethics and

responsibilities and norms of the engineering practice.

9. **Individual and team work**: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. **Communication**: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
11. **Project management and finance**: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
12. **Life-long learning**: Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Along with the 12 Program Outcomes (POs), 3 (three) PSOs have been taken up by the department as follows-

1. **PSO1- Challenges in civil engineering:** Review, analyze and design projects as per the emerging engineering needs of the globe in general and that of North East India in particular.
2. **PSO2- Industry readiness**: Prepare, practice different soft skills and civil engineering technical skills to cater to contemporary needs of the industries and practice.
3. **PSO3-Critical thinking:** Recognize, evaluate and prepare problem specific novel solutions to any civil engineering problem that require state-of-the-art critical thinking.

Establish the correlation between the courses and the Program Outcomes (POs) and Program Specific Outcomes (PSOs) (20)

Course Outcomes (COs) (SAR should include course outcomes of one course from each semester of study, however, should be prepared for all courses and made available as evidence, if asked) (05)

3rd Semester: Engineering Surveying-I

Upon successful completion of the course CE313: Engineering Surveying-I students will be able to-	
CE313.1	Compare the preliminary surveying in the field of civil engineering applications such as structural, highway engineering and geotechnical engineering
CE313.2	Plan a survey, taking accurate measurements, field booking, plotting and adjustment of traverse.
CE313.3	Make use of various conventional instruments involved in surveying with respect to utility and precision.
CE313.4	Plan a survey for applications such as road alignment and height of the building.
CE313.5	Plan and execute a survey using conventional equipments and perform necessary calculations for plotting a contour, longitudinal and cross section, contour, curves.
CE313.6	Take part in the measurement and calculation of area and volume.
CE313.7	Compare the basics of usage of various conventional equipments in civil engineering practice

Table B.3.1.1

C313 is the third civil engineering course in third semester and '.1' to '.5' are the outcomes of this course.

4th Semester: Hydraulic Engineering

Upon successful completion of the course CE416: Hydraulic Engineering students will be able to-	
CE 416.1	Analyze viscous flow in pipes and viscous flow between parallel plates.
CE 416.2	Analyze the characteristics of flow in the boundary layer.
CE 416.3	Calculate drag and lift forces on submerged bodies.
CE 416.4	Analyze simple pipe network.
CE 416.5	Compute uniform flow, critical flow and flow profiles in open channel.
CE 416.6	Analyze impact of jet of water on different vanes and design hydraulic turbines.
CE 416.7	Design centrifugal pump and reciprocating pump

Table B.3.1.2

5th Semester: Concrete Technology

Upon successful completion of the course CE516: Concrete Technology students will be able to-	
CE516.1	Find different ingredients of concrete like cement, coarse and fine aggregate, water and their mechanical and chemical properties and how they are

	determined as per BIS norms; can show and explain with the help of chemical equation the processes of transformation of cement to concrete.
CE516.2	Explain the process of manufacturing of concrete and properties of fresh and hardened concrete including stress strain behavior.
CE516.3	Analyze the process of durability of concrete and how it can be increased with the provisions of IS 456-2000.
CE516.4	Design a concrete mix using IS method and can evaluate the difference of using admixtures to concrete.
CE516.5	Distinguish different types of modern concrete such as high-performance concrete, RPC, FRC, SCC etc.
CE516.6	Illustrate the methods and principles of Non-Destructive Tests like Rebound hammer, USPV, core-cutting etc. They can prioritize the use of different NDT according to health of the structure.

Table B.3.1.3

6th Semester-Transportation Engineering-II Laboratory

Upon successful completion of the course CE613L: Transportation Engineering-II Laboratory students will be able to-	
CE613L.1	Justify why the particular test is required for bitumen
CE613L.2	Assess different results of a test to predict its utility as pavement material
CE613L.3	Predict the change in test results for any shortcoming in the test procedure
CE613L.4	Review the test results to find out the limitations in the apparatus/tools used
CE613L.5	Judge different results of the test and choose the correct ones
CE613L.6	Relate the consequence of the test protocols to real life situation

Table B.3.1.4

7th Semester-Irrigation and River Engineering

Upon successful completion of the course CE713: Irrigation Engineering students will be able to-	
CE 713.1	Determine the various forms of soil water and able to calculate depth and frequency of irrigation and decide suitable water application methods
CE 713.2	Classify canals and will be able to design lined and unlined canals

CE 713.3	Design the various components of canal storage/ diversion head works and canal regulation works with respect to their functions and layout
CE 713.4	Asses the characteristics of a river in various reaches of the land through which it passes and determine the causes and factors responsible for river meandering

CE 713.5	Determine incipient motion conditions of sediments in a river and compute bed load and suspended load of sediments in a river and adopt various river training works for sediment control purposes

Table B.3.1.5

8th Semester-Design of Substructures

Upon successful completion of the course CE814: Design of Substructures students will be able to-	
CE814.1	Design shallow isolated and combined footing.
CE814.2	Design raft foundation.
CE814.3	Analyze and design piles and pile caps subjected to vertical and horizontal loads as well as moments from columns.
CE814.4	Analyze and design sheet piles/ shoring piles.
CE814.5	Predict various forces acting on a bridge substructure using relevant IRC and IS

Table B.3.1.6

CO-PO matrices of courses selected in 3.1.1 (six matrices to be mentioned; one per semester from 3rd to 8th semester) (05)

3rd Semester: Engineering Surveying-I

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO 313.1	3	-	-	-	-	-	-	2	-	-	-	-
CO 313.2	3	3	2	2	-	-	2	-	2	2	-	-
CO 313.3	-	-	-	3	-	-	-	-	-	-	-	-
CO 313.4	3	3	2	3	-	1	2	2	2	2	-	-
CO 313.5	3	3	2	3	-	1	2	2	3	2	2	2
CO 313.6	3	3	3	2	-	-	-	2	3	2	2	-
CO 313.7	2	-	-	-	-	-	-	-	-	-	-	2
CO 313	**2.43**	**1.71**	**1.29**	**1.86**	**-**	**0.29**	**0.86**	**1.14**	**1.43**	**1.14**	**0.57**	**0.57**

Table B.3.1.2-a

4th Semester: Hydraulic Engineering

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CE416.1	3	3	2	2	1	-	-	-	-	-	-	-
CE416.2	3	3	2	2	1	-	-	-	-	-	-	-
CE416.3	3	3	2	2	1	-	-	-	-	-	-	-
CE416.4	3	3	2	2	1	-	-	-	-	-	-	-
CE416.5	3	3	2	2	1	-	-	-	-	-	-	-
CE416.6	3	3	3	2	1	-	-	-	-	-	-	-

CE416.7	3	3	3	2	1	-	-	-	-	-	-	-
CE416	**3.00**	**3.00**	**2.29**	**2.00**	**1.00**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

Table B.3.1.2-b

5th Semester: Concrete Technology

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CE516.1	1	1	-	-	-	-	3	-	-	2	-	1
CE516.2	1	1	2	1	-	-	1	-	-	2	-	1
CE516.3	2	1	1	-	-	-	3	-	-	2	-	2
CE516.4	3	2	3	3	-	-	3	-	-	2	-	2
CE516.5	1	1	-	-	-	-	3	-	-	2	-	2
CE516.6	2	1	-	-	3	-	1	-	-	2	-	2
CE516	**1.67**	**1.17**	**1.00**	**0.67**	**0.50**	**-**	**2.33**	**-**	**-**	**2.00**	**-**	**1.67**

Table B.3.1.2-c

6th Semester: Transportation Engineering-II Laboratory

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CE613L.1	1	-	3	-	2	2	-	-	-	-	-	3
CE613L.2	2	2	-	2	-	3	-	-	-	-	-	2
CE613L.3	3	-	-	3	-	-	-	2	-	-	-	-
CE613L.4	3	2	-	3	2	-	-	2	-	-	-	-
CE613L.5	2	3	-	2	-	-	-	-	-	-	-	-
CE613L.6	-	-	3	-	-	3	-	2	-	-	-	2
CE613L	**1.83**	**1.17**	**1.00**	**1.67**	**0.67**	**1.33**	**-**	**1.00**	**-**	**-**	**-**	**1.17**

Table B.3.1.2-d

7th Semester: Irrigation & River Engineering

Course	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CE 713.1	3	2	2	2	1	1	1	-	1	-	1	1
CE 713.2	2	2	2	2	1	1	-	-	1	-	1	1
CE 713.3	2	1	1	1	-	1	1	-	1	-	1	-
CE 713.4	1	1	1	2	-	2	1	1	1	1	1	1
CE 713.5	2	2	2	2	1	2	2	1	1	1	1	-
CE 713	**2.00**	**1.60**	**1.60**	**1.80**	**0.60**	**1.40**	**1.00**	**0.40**	**1.00**	**0.40**	**1.00**	**0.60**

Table B.3.1.2-e

8th Semester: Design of substructures

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CE814B.1	3	3	3	3	2	2	1	1	-	-	-	2
CE814B.2	3	3	3	3	2	2	1	1	-	-	-	2
CE814B.3	3	3	3	3	2	2	1	1	-	-	-	2
CE814B.4	3	3	3	3	2	2	1	1	-	-	-	2

CE814B.5	3	3	3	3	1	1	1	1	-	-	-	2
CE814B	**3.00**	**3.00**	**3.00**	**3.00**	**1.80**	**1.80**	**1.00**	**1.00**	**-**	**-**	**-**	**2.00**

Table B.3.1.2-f

Correlation levels 1, 2 or 3 are as defined below:

1: Slight (Low), 2: Moderate (Medium), 3: Substantial (High)

It there is no correlation, "-" is put

2. Similar table is prepared for PSOs

CO-PSO matrices of courses selected in 3.1.1 3rd

Semester: Engineering Surveying-I

Course	PSO1	PSO2	PSO3
CE 313.1	-	-	1
CE 313.2	2	2	-
CE 313.3	1	2	3
CE 313.4	1	1	-
CE 313.5	2	3	-
CE 313.6	1	1	-
CE 313.7	-	-	1
CE 313	**1.00**	**1.29**	**0.71**

Table B.3.1.2-g

4th Semester: Hydraulic Engineering

Course	PSO1	PSO2	PSO3
CE 416.1	1	-	-
CE 416.2	1	1	-
CE 416.3	1	1	-
CE 416.4	1	1	-
CE 416.5	1	2	-
CE 416.6	1	2	-
CE 416.7	2	2	-
CE 416	**1.14**	**1.29**	**-**

Table B.3.1.2-h

5th Semester: Concrete Technology

Course	PSO1	PSO2	PSO3
CE 516.1	1	2	-
CE 516.2	-	1	-
CE 516.3	2	2	1
CE 516.4	2	2	2
CE 516.5	-	-	1
CE 516.6	2	2	1
CE 516	**1.17**	**1.50**	**0.83**

Table B.3.1.2-j

6th Semester: Transportation Engineering-II Laboratory

Course	PSO1	PSO2	PSO3
CE 613L.1	-	-	2
CE 613L.2	-	1	3
CE 613L.3	-	-	3
CE 613L.4	-	-	2
CE 613L.5	-	1	3
CE 613L.6	1	-	3
CE 613L	0.17	0.33	2.67

Table B.3.1.2-k

7th Semester: Irrigation & River Engineering

Course	PSO1	PSO2	PSO3
CE 713.1	1	-	1
CE 713.2	1	1	-
CE 713.3	1	1	-
CE 713.4	2	-	2
CE 713.5	1	2	3
CE 713	1.2	0.8	1.2

Table B.3.1.2-m

8th Semester: Design of Substructures

Course	PSO1	PSO2	PSO3
CE 814B.1	3	3	2
CE 814B.2	3	3	2
CE 814B.3	3	3	3
CE 814B.4	3	3	3
CE 814B.5	3	3	3
CE 814B	3.00	3.00	2.60

Table B.3.1.1m

Program level Course-PO matrix of all courses INCLUDING first year courses (10)

Old Curriculum

(For the batches 2011-15, 2012-16, 2013-17 and 2014-18)

Short Code	Long Code	Subject Name	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

1.1 TS	PH101	Physics I	2.50	2.00	--	--	--	--	--	-	-	-	-	-
1.1 P	PH101L	Physics-I Lab	2.00	2.00	-	2.00	-	-	-	-	-	-	-	-
1.2 TS	CY102	Chemistry-I	2.60	1.60	-	-	-	0.40	0.60	-	-	-	-	0.60
1.2 P	CY102L	Chemistry-I lab	2.50	1.75	-	1.00	-	-	-	-	-	1.00	-	-
1.3 TS	MA103	Mathematics-I	3.00	3.00	1.20	0.20	-	-	-	-	0.20	-	-	2.00

Short Code	Long Code	Subject Name	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
1.4 TS	CE104	Elements of Civil Engineering	2.60	2.20	0.20	0.80	0.60	-	-	-	-	-	-	-
1.5 TS	HU105	English Communication and Technical Report Writing	-	1.00	-	1.00	-	1.00	1.00	1.33	3.00	2.25	-	3.00
1.6 TS	CE106	Engineering Graphics-I	3.00	3.00	2.43	2.57	2.14	2.57	0.71	-	-	-	-	-
1.7 PS	CS107	Introduction to Computing	1.60	1.40	1.80	0.80	1.20	-	-	-	-	-	-	-
1.8 S	ME108	Workshop-I	1.60	2.00	-	-	-	-	-	1.00	1.60	-	-	-
2.1 TS	PH201	Physics-II	2.50	2.00	-	-	-	-	-	-	-	-	-	-
2.1 P	PH201L	Physics-II Lab	2.00	2.00	-	2.00	-	-	-	-	-	-	-	-
2.2 TS	CY202	Chemistry-II	2.80	2.20	0.80	-	-	0.60	0.60	-	1.00	1.00	-	1.00
2.2P	CY202L	Chemistry-II Lab	2.00	2.00	-	1.25	-	0.50	1.00	-	-	1.00	-	-
2.3 TS	MA203	Mathematics-II	3.00	3.00	2.00	-	-	-	-	-	-	-	-	2.00
2.4 TS	ME203/ CE205	Engineering Mechnaics and Strength of Materials	3.00	2.13	1.75	1.60	0.90	-	-	-	-	-	-	0.50
2.4 P	ME203L/ CE205L	Engineering Mechnaics and Strength of Materials Lab	3.00	1.71	0.71	2.29	2.00	-	-	-	-	-	-	0.57
2.5 TS	EE206	Basic Electrical Engg.-I	3.00	3.00	3.00	2.00	1.60	1.00	3.00	0.40	1.00	-	-	3.00
2.5 P	EE206L	Basic Electrical Engg.-I Lab	3.00	3.00	-	1.00	-	-	-	-	3.00	0.67	-	3.00
2.6 TS	ME207	Engineering Graphics-II	3.00	3.00	1.00	-	0.40	0.60	-	-	-	-	-	1.00
2.7 S	ME208	Workshop-II	1.60	2.00	-	-	-	-	-	1.00	1.60	-	-	-
3.1 TS	MA301	Mathematics-III	3.00	3.00	-	-	-	-	-	-	-	-	-	2.00
3.2 TS	CE314	Basic Fluid Mechanics	3.00	2.90	2.50	1.80	1.70	1.60	1.50	1.40	1.30	1.40	1.50	1.50
3.2 P	CE314L	Basic Fluid Mechanics Lab	3.00	1.00	1.00	2.00	-	-	-	-	-	-	-	-
3.3 TS	CE313	Engineering Survey	2.43	1.71	1.29	1.86	-	0.29	0.86	1.14	1.43	1.14	0.57	0.57
3.3 P	CE313L	Engineering Survey Lab	2.40	2.40	1.40	1.20	-	0.40	0.40	0.20	3.00	1.40	-	-
3.4 TS	EE316/ ME317	Electrical and Mechanical Engineering	2.00	2.00	-	-	-	2.00	2.00	2.00	-	-	-	2.00
3.4P	EE316L/ ME317L	Electrical and Mechanical Engineering Lab	2.00	2.00	-	-	-	2.00	2.00	2.00	-	-	-	2.00
3.5 TS	CE315	Construction Practice and Building Drawing	3.00	2.00	-	1.00	-	-	-	-	-	-	-	-
3.5 P	CE315L	Construction Practice and Building Drawing Lab	2.40	1.40	2.00	0.60	0.60	-	-	-	-	-	-	-
3.6 TS	CE312	Theory of Sytructures-I	2.80	1.80	2.40	2.80	1.80	1.80	1.80	2.80	0.80	0.80	0.80	0.80
3.8 T	CE318	General Proficiency	1.00	1.00	1.00	1.00	2.00	2.00	2.00	3.00	3.00	3.00	1.00	3.00
4.1 TS	MA411	Advanced Mathematics and Numerical Analysis	3.00	2.40	1.60	0.20	0.20	-	-	-	0.20	-	-	1.40
4.2 TS	HU402	Sociology and Accountancy	-	1.00	-	-	-	1.33	1.00	1.33	1.16	1.00	1.00	3.00
4.3 TS	HU403	Communication Skill	-	1.80	-	1.50	-	2.20	1.20	1.80	2.00	3.00	-	3.00
4.4 TS	CE412	Theory of Structures-II	3.00	3.00	3.00	3.00	3.00	3.00	2.00	3.00	1.00	1.00	1.00	1.00
4.5 TS	CE413	Advanced Surveying	2.17	2.17	1.17	1.67	2.50	-	-	0.67	1.33	1.00	0.67	1.00
4.5 P	CE413L	Advanced Surveying Lab	2.33	2.17	0.83	0.83	1.33	-	-	0.50	2.50	0.67	-	0.83
4.6 TS	CE414	Hydraulic and Hydraulic Machines	3.00	3.00	2.29	2.00	1.00	-	-	-	-	-	-	-
4.6 P	CE414L	Hydraulic and Hydraulic Machines Lab	3.00	1.00	-	2.00	-	-	-	-	-	-	-	-
4.7 TS	CE415	Engineering Geoscience	2.40	1.60	1.60	1.00	0.80	-	0.40	-	-	-	-	1.00
4.7 P	CE415L	Engineering Geoscience	2.75	2.00	2.00	1.75	1.00	-	-	-	-	-	-	1.00

Short Code	Long Code	Subject Name	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
		Lab												
4.9 T	CE416	General Proficiency	1.00	1.00	1.00	1.00	2.00	2.00	2.00	3.00	3.00	3.00	1.00	3.00
5.1 TS	HU501	Economics and Principles of Management	-	1.00	-	-	-	2.00	1.00	1.00	2.00	1.00	1.00	2.66
5.2 TS	CE512	Design of Structures-I	2.00	2.71	3.00	2.00	1.86	1.00	2.00	1.14	2.00	2.00	1.00	3.00
5.3 TS	CE513	Environmental Engineering-I	1.33	1.83	1.17	0.83	1.33	1.17	1.50	0.50	-	-	-	-
5.3 P	CE513L	Environmental Engineering-I Lab	0.80	1.60	0.80	1.00	0.60	1.80	1.40	0.40	-	-	-	-
5.4 TS	CE514	Transportation Engineering-I	2.67	2.33	2.33	2.17	2.17	2.17	2.33	1.50	2.00	2.00	1.83	1.83
5.4 P	CE514L	Transportation Engineering-I Lab	1.50	-	-	0.50	0.50	0.50	0.50	-	-	-	-	-
5.5 TS	CE515	Geotechnical Engineering	3.00	3.00	2.00	0.50	1.00	-	-	-	-	-	-	0.50
5.5 P	CE515L	Geotechnical Engineering Lab	3.00	1.17	-	2.00	1.00	-	-	-	2.00	3.00	-	-
5.6 TS	CE516	Concrete Technology	1.67	1.17	1.00	0.67	0.50	-	2.33	-	-	2.00	-	1.67
5.6 P	CE516L	Concrete Technology Lab	-	-	-	-	2.00	2.00	-	3.00	3.00	3.00	-	-
5.8 T	CE517	General Proficiency	1.00	1.00	1.00	1.00	2.00	2.00	2.00	3.00	3.00	3.00	1.00	3.00
6.1 TS	CE611	Design of Structures-II	2.00	2.71	3.00	2.00	1.86	1.00	2.00	2.00	2.00	2.00	1.00	3.00
6.1 P	CE611L	Design of Structures-II Lab	3.00	1.00	1.00	-	-	-	-	1.00	2.00	-	-	1.00
6.2 TS	CE612	Foundation Engineering	1.20	0.60	-	0.60	-	1.60	-	-	-	-	-	-
6.3 TS	CE613	Transportation Engineering-II	2.50	2.00	2.00	2.17	2.00	2.00	2.33	1.33	2.00	1.50	2.00	1.33
6.3 P	CE613L	Transportation Engineering-II Lab	1.83	1.17	1.00	1.67	0.67	1.33	-	1.00	-	-	-	1.17
6.4 TS	CE614	Environmental Engineering-II	1.20	2.00	0.80	0.60	0.40	1.00	0.40	-	-	-	-	-
6.4 P	CE614L	Environmental Engineering-II Lab	1.33	1.67	-	1.00	-	1.00	1.33	-	-	-	-	-
6.5 TS	CE615	Estimation and Valuation	2.50	2.00	1.00	-	1.00	0.33	-	-	0.50	-	-	-
6.6 TS	CE616	Hydrology	2.00	2.40	2.20	1.80	1.80	1.60	2.00	1.40	1.80	2.00	1.00	2.00
6.7 T	CE617	General Proficiency	2.00	2.00	-	1.67	2.00	1.67	1.67	2.00	3.00	3.00	-	1.67
6.8 P	CE618	Survey Camp	2.00	2.00	0.67	1.67	2.00	1.67	1.67	2.00	3.00	3.00	0.67	1.67
7.1 TS	CE711	Theory of Structures-III	2.00	3.00	2.00	2.00	2.00	1.00	1.00	1.00	2.00	1.00	1.00	3.00
7.2 TS	CE712	Design of Structures-III	2.71	2.71	2.43	2.86	2.43	2.71	2.57	2.43	2.43	1.86	1.57	1.57
7.3 TS	CE713	Civil Engineering Planning	2.17	1.83	1.00	1.00	-	0.67	-	-	-	-	-	-
7.4 TS	CE714	Irrigation Engineering	1.80	1.60	1.80	1.60	0.80	1.00	0.80	-	1.00	-	0.80	0.80
7.5_EI_1 TS	CE715A	Open Channel Flow	2.67	2.33	1.33	2.50	1.83	1.33	2.33	2.17	1.83	2.00	1.67	1.67
7.5_EI_2 TS	CE715B	Advanced Engineering Geoscience	2.40	2.40	1.60	2.40	1.80	1.40	2.20	1.00	-	1.60	0.80	0.80
7.6_EII_2 TS	CE716A	Earthquake Engineering	2.14	2.29	2.00	1.57	2.14	1.86	1.43	1.29	1.71	1.43	1.43	3.00
7.7 P	CE717	Training	3.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	3.00
7.8 P	CE718	Project-I	3.00	3.00	3.00	3.00	2.00	2.00	2.00	2.00	3.00	3.00	2.00	3.00
8.1 TS	CE811	Design of Structures-IV	1.33	1.33	1.67	1.50	1.33	1.33	1.50	1.17	1.00	1.50	1.33	1.50
8.2 TS	CE812	Flood Management and River Engineering	1.60	1.60	1.80	1.60	-	1.40	1.20	0.60	0.60	0.40	0.40	0.60
8.3 TS	CE813	Construction Management	2.00	1.40	1.40	0.60	-	-	-	-	-	-	1.20	-
8.4_EIII_3 TS	CE814B	Design of Substructures	3.00	3.00	3.00	3.00	1.80	1.80	1.00	1.00	-	-	-	2.00
8.5_EIV_1 TS	CE815A	Water Power Engineering	2.20	1.20	1.60	2.60	1.40	-	0.60	-	-	-	-	-
8.6 P	CE817	Viva Voce	3.00	1.00	1.00	-	-	-	-	1.00	2.00	3.00	-	1.00

Short Code	Long Code	Subject Name	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
8.7 P	CE816	Project-II	3.00	3.00	3.00	3.00	2.00	2.00	2.00	2.00	3.00	3.00	2.00	3.00

Table B.3.1.3-a

New Curriculum

(For the batches 2015-19 onwards)

Short Code	Long Code	Course Name	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
1.1 TS	PH101	Engg. Physics	2.50	2.00	-	-	-	-	-	-	-	-	-	-
1.1 P	PH101L	Engg. Physics Lab	2.00	-	-	-	-	-	-	-	-	-	-	-
1.2 TS	CY102	Engg. Chemistry	2.60	1.80	1.80	-	-	0.80	1.40	-	-	-	-	1.60
1.2 P	CY102L	Engg. Chemistry Lab	2.00	1.80	-	1.00	-	-	-	-	1.20	1.80	-	-
1.3 TS	MA103	Mathematics-I	3.00	3.00	1.20	0.20	-	-	-	-	0.20	-	-	2.00
1.4 TS	CE114	Mechanics of Solids	2.00	1.40	0.80	0.80	0.20	-	0.20	-	-	-	-	0.60
1.5 TS	HU105	Technical Report Writing	-	0.60	0.60	0.80	-	1.40	1.00	1.40	1.60	2.80	1.00	3.00
1.6 PS	CE117	Engineering Graphics-I	3.00	3.00	2.42	2.57	2.14	2.57	0.71	-	-	-	-	-
1.7 TS	CS106	Computer Programming	2.00	1.80	2.40	1.20	1.20	-	-	-	-	-	-	-
1.7 P	CS106L	Computer Programming Lab	2.00	1.80	2.40	1.20	1.20	-	-	-	-	-	-	-
1.8 P	ME108	Workshop Practice	1.60	2.00	-	-	-	-	-	1.00	1.60	-	-	-
2.1 TS	PH201	Engg. Physics-II	2.50	2.00	-	-	-	-	-	-	-	-	-	-
2.1 P	PH201L	Engg. Physics-II Lab	2.00	-	-	-	-	-	-	-	-	-	-	-
2.2 TS	CY202	Engg. Chemistry-II	2.80	1.80	1.60	1.00	-	1.80	1.00	-	1.60	1.80	-	1.00
2.2P	CY202L	Engg. Chemistry-II Lab	2.00	2.00	-	-	-	1.25	1.25	-	1.00	1.00	-	-
2.3 TS	MA203	Mathematics-II	3.00	3.00	2.00	-	-	-	-	-	-	-	-	2.00
2.4 TS	ME224	Engineering Mechnaics I	3.00	2.00	2.00	2.50	1.80	-	-	-	-	-	-	1.00
2.4 P	ME224L	Engineering Mechnaics I Lab	3.00	1.50	1.30	1.80	1.30	-	-	-	-	-	-	1.00
2.5 TS	EE245	Basic Electrical Engg. & Electronics	3.00	3.00	3.00	2.00	1.60	1.00	3.00	0.40	1.00	-	-	3.00
2.5 P	EE245L	Basic Electrical Engg. & Electronics Lab	3.00	3.00	-	1.00	-	-	-	-	3.00	0.70	-	3.00
2.6 TS	HU206	Sociology	-	1.00	-	-	-	2.00	-	2.00	1.00	1.00	1.00	3.00
2.7 PS	ME227	Engineering Graphics-II	3.00	3.00	1.00	-	0.40	0.60	-	-	-	-	-	1.00
3.1 TS	MA301	Mathematics-III	3.00	3.00	-	-	-	-	-	-	-	-	-	-
3.2 TS	CE312	Theory of Structures	2.80	1.80	2.40	2.80	1.80	1.80	1.80	2.80	0.80	0.80	0.80	0.80
3.3 TS	CE313	Engineering Surveying-I	2.43	1.71	1.29	1.86	-	0.29	0.86	1.14	1.43	1.14	0.57	0.57
3.3 P	CE313L	Engineering Surveying-I Lab	2.40	2.40	1.40	1.20	-	0.40	0.40	0.20	3.00	1.40	-	-
3.4 TS	CE314	Basic Fluid Mechanics	3.00	2.90	2.50	1.80	1.70	1.60	1.50	1.40	1.30	1.40	1.50	1.50
3.4P	CE314L	Basic Fluid Mechanics Lab	3.00	1.00	1.00	2.00	-	-	-	-	-	-	-	-
3.5 TS	CE315	Building Technology-I	2.40	1.40	1.00	-	0.60	-	0.40	-	-	-	-	-
3.5 P	CE315L	Building Technology-I Lab	2.50	1.00	2.67	0.75	0.75	-	-	-	-	-	-	-
3.6 TS	CE316	Engineering Geoscience	2.40	1.60	1.60	1.00	0.80	-	0.40	-	-	-	-	1.00

3.6 P	CE316L	Engineering Geoscience Lab	2.75	2.00	2.00	1.75	1.00	-	-	-	-	-	-	1.00

Short Code	Long Code	Course Name	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
4.1 TS	MA401	Mathematics-IV	3.00	2.40	1.60	0.20	0.20	-	-	-	0.20	-	-	1.40
4.2 TS	HU402	Accountancy for Engineers	-	-	-	-	-	-	0.20	0.20	0.60	2.40	-	3.00
4.3 TS	HU403	Communication and Presentation Skill	-	-	-	-	-	-	0.20	0.20	0.60	2.40	-	3.00
4.4 TS	CE414	Theory of Structures-II	3.00	3.00	3.00	3.00	3.00	3.00	2.00	3.00	1.00	1.00	1.00	1.00
4.5 TS	CE415	Engineering Surveying-II	2.17	2.17	1.17	1.67	2.50	-	-	0.67	1.33	1.00	0.67	1.00
4.5 P	CE415L	Engineering Surveying-II Lab	2.33	2.17	0.83	0.83	1.33	-	-	0.50	2.50	0.67	-	0.83
4.6 TS	CE416	Hydraulic Engineering	3.00	3.00	2.29	2.00	1.00	-	-	-	-	-	-	-
4.6 P	CE416L	Hydraulic Engineering Lab	3.00	1.00	-	2.00	-	-	-	-	-	-	-	-
4.7 TS	CE417	Building Technology-II	2.00	1.20	1.80	0.80	-	0.80	0.60	-	-	-	-	-
4.7 P	CE417L	Building Technology-II Lab	2.75	-	1.75	-	2.00	-	-	-	-	-	-	-
4.8 P	HU408L	Communication Language Lab	-	-	-	-	-	-	0.20	0.20	0.60	2.40	-	3.00
	HU501	Engineering Economics	-	1.00	-	-	-	1.80	-	1.00	1.00	0.80	1.80	3.00
	CE512	Design of Structures-I	2.00	2.71	3.00	2.00	1.86	1.00	2.00	1.14	2.00	2.00	1.00	3.00
	CE513	Environmental Engineering-I	1.33	1.83	1.17	0.83	1.33	1.17	1.50	0.50	-	-	-	-
	CE514	Transportation Engineering-I	2.67	2.33	2.33	2.17	2.17	2.17	2.33	1.50	2.00	2.00	1.83	1.83
	CE515	Geotechnical Engineering-I	3.00	3.00	2.00	0.50	1.00	-	-	-	-	-	-	0.50
	CE516	Concrete Technology	1.67	1.17	1.00	0.67	0.50	-	2.33	-	-	2.00	-	1.67
	CE517	General Proficiency/Extra-Academic Activity-I	1.00	1.00	1.00	1.00	2.00	2.00	2.00	3.00	3.00	3.00	1.00	3.00
	CE513L	Environmental Engineering-I Lab.	0.80	1.60	0.80	1.00	0.60	1.80	1.40	0.40	-	-	-	-
	CE514L	Transportation Engineering-I Lab.	1.50	-	-	0.50	0.50	0.50	0.50	-	-	-	-	-
	CE515L	Geotechnical Engineering-I Lab.	3.00	1.17	-	2.00	1.00	-	-	-	2.00	3.00	-	-
	CE516L	Concrete Technology Lab.	-	-	-	-	2.00	2.00	-	3.00	3.00	3.00	-	-
	CE611	Design of Structures-II	2.00	2.71	3.00	2.00	1.86	1.00	2.00	2.00	2.00	2.00	1.00	3.00
	CE612	Environmental Engineering-II	1.20	2.00	0.80	0.60	0.40	1.00	0.40	-	-	-	-	-
	CE613	Transportation Engineering-II	2.50	2.00	2.00	2.17	2.00	2.00	2.33	1.33	2.00	1.50	2.00	1.33
	CE614	Geotechnical Engineering-II	1.20	0.60	-	0.60	-	1.60	-	-	-	-	-	-
	CE615	Quantity Surveying	2.50	2.00	1.00	-	1.00	0.33	-	-	0.50	-	-	-
	CE616	Hydrology & Flood Management	2.00	2.40	2.20	1.80	1.80	1.60	2.00	1.40	1.80	2.00	1.00	2.00
	CE617	General Proficiency/Extra Academic Activity-II	1.00	1.00	1.00	1.00	2.00	2.00	2.00	3.00	3.00	3.00	1.00	3.00
	CE618L	Survey Camp	2.00	2.00	-	1.67	2.00	1.67	1.67	2.00	3.00	3.00	-	1.67
	CE612L	Environmental Engineering-II	1.33	1.67	-	1.00	-	1.00	1.33	-	-	-	-	-
	CE613L	Transportation Engineering-II	1.83	1.17	1.00	1.67	0.67	1.33	-	1.00	-	-	-	1.17
	CE711	Theory of Structures-III	2.00	3.00	2.00	2.00	2.00	1.00	1.00	1.00	2.00	1.00	1.00	3.00
	CE712	Earthquake Engineering	2.14	2.29	2.00	1.57	2.14	1.86	1.43	1.29	1.71	1.43	1.43	3.00
	CE713	Irrigation & River	2.00	1.60	1.60	1.80	0.60	1.40	1.00	0.40	1.00	0.40	1.00	0.60

Short Code	Long Code	Course Name	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
		Engineering												
	CE716	Industrial Training	3.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	3.00
	CE717	Project-I	3.00	3.00	3.00	3.00	2.00	2.00	2.00	2.00	3.00	3.00	2.00	3.00
	CE811	Design of Structure-III	2.71	2.71	2.43	2.86	2.43	2.71	2.57	2.43	2.43	1.86	1.57	1.57
	CE812	Construction Engineering & Management	2.00	1.40	1.40	0.60	-	-	-	-	-	-	1.20	-
	CE813	Infrastructure Planning	1.17	1.33	1.33	0.83	1.17	1.50	1.50	0.83	1.17	1.50	0.67	2.67
	CE816	Project-II	3.00	3.00	3.00	3.00	2.00	2.00	2.00	2.00	3.00	3.00	2.00	3.00
	CE817	Viva-Voce	3.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	2.00	3.00	0.00	1.00

Table B.3.1.3-b

Note:

1. Correlation levels 1, 2 or 3 are as defined below:

1: Slight (Low) 2: Moderate (Medium) 3: Substantial (High)

It there is no correlation, "-" is put

2. ***Similar table is prepared for PSOs***

Program level Course-PSO matrix of all courses INCLUDING first year courses (10)

Old Curriculum

(For the batches 2011-15, 2012-16, 2013-17 and 2014-18)

Short Code	Long Code	Subject Name	PSO1	PSO2	PSO3
1.1 TS	PH101	Physics I	-	-	-
1.1 P	PH101L	Physics-I Lab	-	-	-
1.2 TS	CY102	Chemistry-I	-	-	-
1.2 P	CY102L	Chemistry-I lab	-	-	-
1.3 TS	MA103	Mathematics-I	-	-	-
1.4 TS	CE104	Elements of Civil Engineering	0.20	0.60	0.60
1.5 TS	HU105	English Communication and Technical Report Writing	-	-	-
1.6 TS	CE106	Engineering Graphics-I	-	1.00	0.29
1.7 PS	CS107	Introduction to Computing	-	-	-
1.8 S	ME108	Workshop-I	-	-	-
2.1 TS	PH201	Physics-II	-	-	-
2.1 P	PH201L	Physics-II Lab	-	-	-
2.2 TS	CY202	Chemistry-II	-	-	-
2.2P	CY202L	Chemistry-II Lab	-	-	-

2.3 TS	MA203	Mathematics-II	-	-	-

Short Code	Long Code	Subject Name	PSO1	PSO2	PSO3
2.4 TS	ME203/ CE205	Engineering Mechnaics and Strength of Materials	1.10	0.90	-
2.4 P	ME203L/ CE205L	Engineering Mechnaics and Strength of Materials Lab	0.71	1.14	-
2.5 TS	EE206	Basic Electrical Engg.-I	-	-	-
2.5 P	EE206L	Basic Electrical Engg.-I Lab	-	-	-
2.6 TS	ME207	Engineering Graphics-II	-	-	-
2.7 S	ME208	Workshop-II	-	-	-
3.1 TS	MA301	Mathematics-III	-	-	-
3.2 TS	CE314	Basic Fluid Mechanics	0.60	0.80	0.20
3.2 P	CE314L	Basic Fluid Mechanics Lab	1.00	1.00	-
3.3 TS	CE313	Engineering Survey	1.00	1.29	0.71
3.3 P	CE313L	Engineering Survey Lab	1.20	2.00	0.60
3.4 TS	EE316/ ME317	Electrical and Mechanical Engineering	-	-	-
3.4P	EE316L/ ME317L	Electrical and Mechanical Engineering Lab	-	-	-
3.5 TS	CE315	Construction Practice and Building Drawing	1.00	1.40	0.60
3.5 P	CE315L	Construction Practice and Building Drawing Lab	1.40	2.00	0.40
3.6 TS	CE312	Theory of Structures-I	1.00	1.60	0.40
3.8 T	CE318	General Proficiency	-	3.00	-
4.1 TS	MA411	Advanced Mathematics and Numerical Analysis	-	-	-
4.2 TS	HU402	Sociology and Accountancy	-	-	-
4.3 TS	HU403	Communication Skill	-	-	-
4.4 TS	CE412	Theory of Structures-II	1.40	1.40	0.60
4.5 TS	CE413	Advanced Surveying	1.50	2.33	1.67
4.5 P	CE413L	Advanced Surveying Lab	1.33	2.00	0.83
4.6 TS	CE414	Hydraulic and Hydraulic Machines	1.14	1.29	-
4.6 P	CE414L	Hydraulic and Hydraulic Machines Lab	1.00	1.00	-
4.7 TS	CE415	Engineering Geoscience	1.60	1.60	0.60
4.7 P	CE415L	Engineering Geoscience Lab	1.25	1.50	0.50
4.9 T	CE416	General Proficiency	-	3.00	-
5.1 TS	HU501	Economics and Principles of Management	-	-	-
5.2 TS	CE512	Design of Structures-I	2.71	1.86	1.71
5.3 TS	CE513	Environmental Engineering-I	1.33	1.33	0.83
5.3 P	CE513L	Environmental Engineering-I Lab	1.20	0.60	1.40
5.4 TS	CE514	Transportation Engineering-I	1.50	1.33	1.17
5.4 P	CE514L	Transportation Engineering-I Lab	1.00	2.50	1.50
5.5 TS	CE515	Geotechnical Engineering	1.50	2.00	1.17
5.5 P	CE515L	Geotechnical Engineering Lab	1.33	2.00	0.50
5.6 TS	CE516	Concrete Technology	1.17	1.50	0.83
5.6 P	CE516L	Concrete Technology Lab	1.25	1.75	0.75
5.8 T	CE517	General Proficiency	-	3.00	-
6.1 TS	CE611	Design of Structures-II	2.57	1.86	1.57
6.1 P	CE611L	Design of Structures-II Lab	-	1.00	-

Short Code	Long Code	Subject Name	PSO1	PSO2	PSO3
6.2 TS	CE612	Foundation Engineering	2.00	2.00	1.00
6.3 TS	CE613	Transportation Engineering-II	1.50	2.00	0.83
6.3 P	CE613L	Transportation Engineering-II Lab	0.17	0.33	2.67
6.4 TS	CE614	Environmental Engineering-II	2.40	2.00	1.20
6.4 P	CE614L	Environmental Engineering-II Lab	1.67	1.33	0.67
6.5 TS	CE615	Estimation and Valuation	2.33	2.50	1.67
6.6 TS	CE616	Hydrology	2.40	2.40	1.60
6.7 T	CE617	General Proficiency	0.67	2.00	0.33
6.8 P	CE618	Survey Camp	0.67	2.00	0.33
7.1 TS	CE711	Theory of Structures-III	1.60	2.00	1.00
7.2 TS	CE712	Design of Structures-III	2.86	2.00	1.14
7.3 TS	CE713	Civil Engineering Planning	1.67	2.50	1.83
7.4 TS	CE714	Irrigation Engineering	2.20	2.00	1.60
7.5_EI_1 TS	CE715A	Open Channel Flow	2.17	2.17	1.00
7.5_EI_2 TS	CE715B	Advanced Engineering Geoscience	2.00	2.40	1.60
7.6_EII_2 TS	CE716A	Earthquake Engineering	2.71	2.71	1.86
7.7 P	CE717	Training	2.00	3.00	-
7.8 P	CE718	Project-I	3.00	3.00	3.00
8.1 TS	CE811	Design of Structures-IV	2.17	2.50	1.83
8.2 TS	CE812	Flood Management and River Engineering	2.80	2.80	2.00
8.3 TS	CE813	Construction Management	1.40	1.60	1.20
8.4_EIII_3 TS	CE814B	Design of Substructures	3.00	3.00	2.60
8.5_EIV_1 TS	CE815A	Water Power Engineering	1.80	2.00	1.00
8.6 P	CE817	Viva Voce	1.00	3.00	1.00
8.7 P	CE816	Project-II	3.00	3.00	3.00

Table B.3.1.3-c

New Curriculum

(For the batches 2015-19 onwards)

Short Code	Long Code	Course Name	PSO1	PSO2	PSO3
1.1 TS	PH101	Engg. Physics	-	-	-
1.1 P	PH101L	Engg. Physics Lab	-	-	-
1.2 TS	CY102	Engg. Chemistry	-	-	-
1.2 P	CY102L	Engg. Chemistry Lab	-	-	-
1.3 TS	MA103	Mathematics-I	-	-	-
1.4 TS	CE114	Mechanics of Solids	0.80	0.80	0.40
1.5 TS	HU105	Technical Report Writing	-	-	-
1.6 PS	CE117	Engineering Graphics-I	-	1.00	0.29
1.7 TS	CS106	Computer Programming	-	-	-
1.7 P	CS106L	Computer Programming Lab	-	-	-
1.8 P	ME108	Workshop Practice	-	-	-
2.1 TS	PH201	Engg. Physics-II	-	-	-
2.1 P	PH201L	Engg. Physics-II Lab	-	-	-
2.2 TS	CY202	Engg. Chemistry-II	-	-	-

2.2P	CY202L	Engg. Chemistry-II Lab	-	-	-

Short Code	Long Code	Course Name	PSO1	PSO2	PSO3
2.3 TS	MA203	Mathematics-II	-	-	-
2.4 TS	ME224	Engineering Mechnaics I	-	-	-
2.4 P	ME224L	Engineering Mechnaics I Lab	-	-	-
2.5 TS	EE245	Basic Electrical Engg. & Electronics	-	-	-
2.5 P	EE245L	Basic Electrical Engg. & Electronics Lab	-	-	-
2.6 TS	HU206	Sociology	-	-	-
2.7 PS	ME227	Engineering Graphics-II	-	-	-
3.1 TS	MA301	Mathematics-III	-	-	-
3.2 TS	CE312	Theory of Structures	1.00	1.60	0.40
3.3 TS	CE313	Engineering Surveying-I	1.00	1.29	0.71
3.3 P	CE313L	Engineering Surveying-I Lab	1.20	2.00	0.60
3.4 TS	CE314	Basic Fluid Mechanics	0.60	0.80	0.20
3.4P	CE314L	Basic Fluid Mechanics Lab	1.00	1.00	-
3.5 TS	CE315	Building Technology-I	0.80	1.20	0.60
3.5 P	CE315L	Building Technology-I Lab	1.50	2.25	0.50
3.6 TS	CE316	Engineering Geoscience	1.60	1.60	0.60
3.6 P	CE316L	Engineering Geoscience Lab	1.25	1.50	0.50
4.1 TS	MA401	Mathematics-IV	-	-	-
4.2 TS	HU402	Accountancy for Engineers	-	-	-
4.3 TS	HU403	Communication and Presentation Skill	-	-	-
4.4 TS	CE414	Theory of Structures-II	1.40	1.40	0.60
4.5 TS	CE415	Engineering Surveying-II	1.50	2.33	1.67
4.5 P	CE415L	Engineering Surveying-II Lab	1.33	2.00	0.83
4.6 TS	CE416	Hydraulic Engineering	1.14	1.29	-
4.6 P	CE416L	Hydraulic Engineering Lab	1.00	1.00	-
4.7 TS	CE417	Building Technology-II	1.00	1.00	0.60
4.7 P	CE417L	Building Technology-II Lab	0.25	2.25	1.25
4.8 P	HU408L	Communication Language Lab	-	-	-
	HU501	Engineering Economics	-	-	-
	CE512	Design of Structures-I	2.71	1.86	1.71
	CE513	Environmental Engineering-I	1.33	1.33	0.83
	CE514	Transportation Engineering-I	1.50	1.33	1.17
	CE515	Geotechnical Engineering-I	1.50	2.00	1.17
	CE516	Concrete Technology	1.17	1.50	0.83
	CE517	General Proficiency/Extra-Academic Activity-I	1.00	3.00	1.00
	CE513L	Environmental Engineering-I Lab.	1.20	0.60	1.40
	CE514L	Transportation Engineering-I Lab.	1.00	2.50	1.50
	CE515L	Geotechnical Engineering-I Lab.	1.33	2.00	0.50
	CE516L	Concrete Technology Lab.	1.25	1.75	0.75
	CE611	Design of Structures-II	2.57	1.86	1.57
	CE612	Environmental Engineering-II	2.40	2.00	1.20
	CE613	Transportation Engineering-II	1.50	2.00	0.83
	CE614	Geotechnical Engineering-II	2.00	2.00	1.00
	CE615	Quantity Surveying	2.33	2.50	1.67
	CE616	Hydrology & Flood Management	2.40	2.40	1.60
	CE617	General Proficiency/Extra Academic Activity-II	1.00	3.00	1.00

Short Code	Long Code	Course Name	PSO1	PSO2	PSO3
	CE618L	Survey Camp	0.67	2.00	0.33
	CE612L	Environmental Engineering-II	1.67	1.33	0.67
	CE613L	Transportation Engineering-II	0.17	0.33	2.67
	CE711	Theory of Structures-III	1.60	2.00	1.00
	CE712	Earthquake Engineering	2.71	2.71	1.86
	CE713	Irrigation & River Engineering	1.20	0.80	1.20
	CE716	Industrial Training	2.00	3.00	1.00
	CE717	Project-I	3.00	3.00	3.00
	CE811	Design of Structure-III	2.86	2.00	1.14
	CE812	Construction Engineering & Management	1.40	1.60	1.20
	CE813	Infrastructure Planning	2.83	2.00	2.33
	CE816	Project-II	3.00	3.00	3.00
	CE817	Viva-Voce	1.00	3.00	1.00

Table B.3.1.3-d

Attainment of Course Outcomes (50)

Describe the assessment processes used to gather the data upon which the evaluation of Course Outcome is based (10)

The attainments of COs for a particular course are calculated by equally distributing the average attainment of the course among all the COs. The average attainment is computed by taking 50% weightage from the internal marks and 50% weightage from the University exam. This weighted total for every student is then analyzed to check the percentage of students scoring more than the set attainment level of the subjects. This percentage of students scoring more than the attainment level is taken as CO outcome of the course. The attainment level is set at 50 for all the courses of the old syllabus. However, attainment level is different for the 1st year courses in new syllabus. Two attainment levels are set based on the performance of the students in those subjects. Some subjects like chemistry, workshop etc. are high scoring and hence their attainment level is set at 60. For other subjects, the attainment level is set at 50. The same is shown in table B.3.2.1.a

Short Code	Long Code	Course Name	Set attainment Level
1.1 TS	PH101	Engg. Physics	50
1.1 P	PH101L	Engg. Physics Lab	50

Short Code	Long Code	Course Name	Set attainment Level
1.2 TS	CY102	Engg. Chemistry	60
1.2 P	CY102L	Engg. Chemistry Lab	60
1.3 TS	MA103	Mathematics-I	50
1.4 TS	CE114	Mechanics of Solids	50
1.5 TS	HU105	Technical Report Writing	50
1.6 PS	CE117	Engineering Graphics-I	50
1.7 TS	CS106	Computer Programming	50
1.7 P	CS106L	Computer Programming Lab	50
1.8 P	ME108	Workshop Practice	60
2.1 TS	PH201	Engg. Physics-II	50
2.1 P	PH201L	Engg. Physics-II Lab	50
2.2 TS	CY202	Engg. Chemistry-II	50
2.2P	CY202L	Engg. Chemistry-II Lab	60
2.3 TS	MA203	Mathematics-II	50
2.4 TS	ME224	Engineering Mechnaics I	50
2.4 P	ME224L	Engineering Mechnaics I Lab	60
2.5 TS	EE245	Basic Electrical Engg. & Electronics	50
2.5 P	EE245L	Basic Electrical Engg. & Electronics Lab	50
2.6 TS	HU206	Sociology	50
2.7 PS	ME227	Engineering Graphics-II	50

Table: B.3.2.1

Record the attainment of Course Outcomes of all courses with respect to set attainment levels (40)

Old Curriculum

(For the batches 2011-15, 2012-16, 2013-17 and 2014-18)

Short Code	Long Code	Subject Name	Att. Of CO (2011-15)	Att. Of CO (2012-16)	Att. Of CO (2013-17)	Att. Of CO (2014-18)	Set att. Level
1.1 TS	PH101	Physics-I	77.5	85.2	93.2	79.8	50
1.1 P	PH101 L	Physics-I Lab	98.9	80.7	75	76.4	50
1.2 TS	CY102	Chemistry-I	78.7	85.2	94.3	98.9	50
1.2 P	CY102 L	Chemistry-I lab	100	100	100	97.8	50
1.3 TS	MA103	Mathematics-I	67.8	82.8	75.9	88.8	50
1.4 TS	CE104	Elements of Civil Engineering	97.8	90.8	96.6	94.4	50
1.5 TS	HU105	English Communication and Technical Report Writing	85.2	96.6	92	86.5	50
1.6 TS	CE106	Engineering Graphics-I	86.2	89.7	63.6	85.4	50
1.7 PS	CS107	Introduction to Computing	100	100	100	92.1	50

1.8 S	ME108	Workshop-I	98.9	100	98.9	97.8	50

Short Code	Long Code	Subject Name	Att. Of CO (2011-15)	Att. Of CO (2012-16)	Att. Of CO (2013-17)	Att. Of CO (2014-18)	Set att. Level
2.1 TS	PH201	Physics-II	100	88.5	75.6	76.4	50
2.1 P	PH201 L	Physics-II Lab	79.5	81.6	77.9	79.8	50
2.2 TS	CY202	Chemistry-II	76.4	85.1	85.1	97.8	50
2.2P	CY202 L	Chemistry-II Lab	100	100	97.7	98.9	50
2.3 TS	MA203	Mathematics-II	82	90.5	82.6	82	50
2.4 TS	ME203 / CE205	Engineering Mechnaics and Strength of Materials	65.2	81.6	87.2	87.6	50
2.4 P	ME203 L/ CE205 L	Engineering Mechnaics and Strength of Materials Lab	100	100	98.9	97.8	50
2.5 TS	EE206	Basic Electrical Engg.-I	79.8	69	75	64	50
2.5 P	EE206L	Basic Electrical Engg.-I Lab	84.3	74.1	81.4	64	50
2.6 TS	ME207	Engineering Graphics-II	91	90.8	86.2	86.5	50
2.7 S	ME208	Workshop-II	100	96.6	96.6	98.9	50
3.1 TS	MA301	Mathematics-III	62.9	49	84.5	68.7	50
3.2 TS	CE314	Basic Fluid Mechanics	79.4	82.1	80	82.8	50
3.2 P	CE314 L	Basic Fluid Mechanics Lab	96.9	92.7	100	89.9	50
3.3 TS	CE313	Engineering Survey	81.6	91.6	97.9	84.8	50
3.3 P	CE313 L	Engineering Survey Lab	100	99	100	98	50
3.4 TS	EE316/ ME317	Electrical and Mechanical Engineering	93.8	84.9	94.7	97	50
3.4P	EE316L / ME317 L	Electrical and Mechanical Engineering Lab	100	100	100	100	50
3.5 TS	CE315	Construction Practice and Building Drawing	94.9	96.8	91.8	87.9	50
3.5 P	CE315 L	Construction Practice and Building Drawing Lab	99	94.8	100	93.9	50
3.6 TS	CE312	Theory of Sytructures-I	81.6	80.2	90.5	76.8	50
3.8 T	CE318	General Proficiency	95.9	91.7	96.9	87.9	50
4.1 TS	MA411	Advanced Mathematics and Numerical Analysis	50.5	52.2	77.2	55.7	50
4.2 TS	HU402	Sociology and Accountancy	89.8	81.1	88.5	87.6	50
4.3 TS	HU403	Communication Skill	78.6	77.7	83.2	96.9	50
4.4 TS	CE412	Theory of Structures-II	83.7	90.3	83	73.2	50
4.5 TS	CE413	Advanced Surveying	95.9	77.8	94.7	96.9	50
4.5 P	CE413 L	Advanced Surveying Lab	100	100	97.9	99	50
4.6 TS	CE414	Hydraulic and Hydraulic Machines	83.3	84.4	84.9	88.7	50
4.6 P	CE414 L	Hydraulic and Hydraulic Machines Lab	100	81.3	96.9	99	50
4.7 TS	CE415	Engineering Geoscience	94.9	76.1	69.9	70.1	50
4.7 P	CE415	Engineering Geoscience	100	92.7	90.7	91.8	50

Short Code	Long Code	Subject Name	Att. Of CO (2011-15)	Att. Of CO (2012-16)	Att. Of CO (2013-17)	Att. Of CO (2014-18)	Set att. Level
	L	Lab					
4.9 T	CE416	General Proficiency	99	89.2	100	100	50
5.1 TS	HU501	Economics and Principles of Management	94.9	92.6	97.9	87.5	50
5.2 TS	CE512	Design of Structures-I	97.9	96.8	100	100	50
5.3 TS	CE513	Environmental Engineering-I	90.5	95.7	95.7	76	50
5.3 P	CE513 L	Environmental Engineering-I Lab	100	100	95.7	99	50
5.4 TS	CE514	Transportation Engineering-I	87.5	95.8	92.5	86.5	50
5.4 P	CE514 L	Transportation Engineering-I Lab	99	95.8	100	99	50
5.5 TS	CE515	Geotechnical Engineering	87.5	89.8	92.3	76	50
5.5 P	CE515 L	Geotechnical Engineering Lab	99	100	100	99	50
5.6 TS	CE516	Concrete Technology	76	84.9	90.3	87.5	50
5.6 P	CE516 L	Concrete Technology Lab	100	97.9	100	99	50
5.8 T	CE517	General Proficiency	94.8	85.4	100	100	50
6.1 TS	CE611	Design of Structures-II	97.9	100	98.9	97.9	50
6.1 P	CE611 L	Design of Structures-II Lab	96.9	97.9	100	100	50
6.2 TS	CE612	Foundation Engineering	87.5	83.5	91.4	88.7	50
6.3 TS	CE613	Transportation Engineering-II	90.8	97.8	97.9	92.8	50
6.3 P	CE613 L	Transportation Engineering-II Lab	100	100	99	100	50
6.4 TS	CE614	Environmental Engineering-II	89.8	92.6	94.8	96.9	50
6.4 P	CE614 L	Environmental Engineering-II Lab	100	98.9	97.9	99	50
6.5 TS	CE615	Estimation and Valuation	90.8	94.4	96.8	82.5	50
6.6 TS	CE616	Hydrology	91.8	94.5	96.8	90.7	50
6.7 T	CE617	General Proficiency	95.9	88.5	100	100	50
6.8 P	CE618	Survey Camp	100	55.8	100	100	50
7.1 TS	CE711	Theory of Structures-III	96.9	91.7	98.9	NA	50
7.2 TS	CE712	Design of Structures-III	94.9	92.6	96.8	NA	50
7.3 TS	CE713	Civil Engineering Planning	99	98.9	95.7	NA	50
7.4 TS	CE714	Irrigation Engineering	100	97.9	97.9	NA	50
7.5_EI_1 TS	CE715 A	Open Channel Flow	88.8	98.5	95.7	NA	50
7.5_EI_2 TS	CE715 B	Advanced Engineering Geoscience	100	83.3	NA	NA	50
7.6_EII_ 2 TS	CE716 A	Earthquake Engineering	100	100	100	NA	50
7.7 P	CE717	Training	100	100	100	NA	50
7.8 P	CE718	Project-I	100	100	100	NA	50
8.1 TS	CE811	Design of Structures-IV	99	98.9	100	NA	50
8.2 TS	CE812	Flood Management and River Engineering	100	96.9	97.9	NA	50

Short Code	Long Code	Subject Name	Att. Of CO (2011-15)	Att. Of CO (2012-16)	Att. Of CO (2013-17)	Att. Of CO (2014-18)	Set att. Level
8.3 TS	CE813	Construction Management	97.9	100	95.8	NA	50
8.4_EIII_3 TS	CE814B	Design of Substructures	93.9	93.6	94.7	NA	50
8.5_EIV_1 TS	CE815A	Water Power Engineering	91.8	83.3	76	NA	50
8.6 P	CE817	Viva Voce	100	88.5	93.8	NA	50
8.7 P	CE816	Project-II	99	100	100	NA	50

Table 3.2.2-a

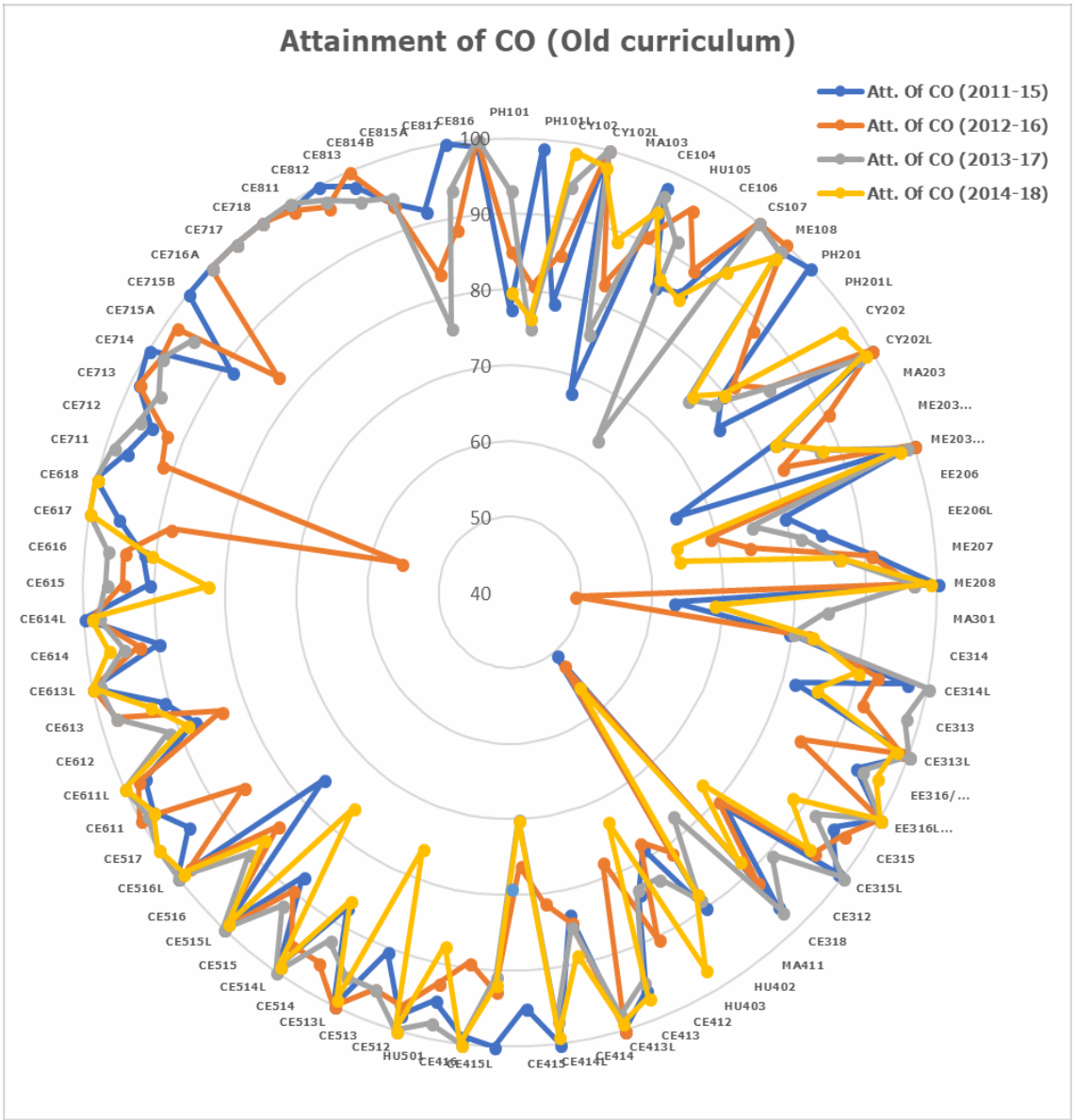


Fig. 3.2.2-a

New Curriculum

(For the batches 2015-19 onwards)

Short Code	Long Code	Course Name	Att. Of CO (2015-19)	Att. Of CO (2016-2020)	Set att. Level
1.1 TS	PH101	Engg. Physics	73	84.7	50
1.1 P	PH101L	Engg. Physics Lab	73	70.6	50
1.2 TS	CY102	Engg. Chemistry	84.3	71.8	60
1.2 P	CY102L	Engg. Chemistry Lab	97.8	100	60
1.3 TS	MA103	Mathematics-I	88.8	63.5	50
1.4 TS	CE114	Mechanics of Solids	77.5	89.4	50
1.5 TS	HU105	Technical Report Writing	88.8	88.2	50
1.6 PS	CE117	Engineering Graphics-I	94.4	78.8	50
1.7 TS	CS106	Computer Programming	47.2	82.4	50
1.7 P	CS106L	Computer Programming Lab	71.9	94.1	50
1.8 P	ME108	Workshop Practice	78.7	88.2	60
2.1 TS	PH201	Engg. Physics-II	74.2	82.4	50
2.1 P	PH201L	Engg. Physics-II Lab	77.5	78.8	50
2.2 TS	CY202	Engg. Chemistry-II	98.9	82.4	50
2.2P	CY202L	Engg. Chemistry-II Lab	100	98.8	60
2.3 TS	MA203	Mathematics-II	66.6	67.1	50
2.4 TS	ME224	Engineering Mechnaics I	84.8	83.5	50
2.4 P	ME224L	Engineering Mechnaics I Lab	96.6	91.8	60
2.5 TS	EE245	Basic Electrical Engg. & Electronics	47.2	32.9	50
2.5 P	EE245L	Basic Electrical Engg. & Electronics Lab	67.4	72.9	50
2.6 TS	HU206	Sociology	58.4	71.8	50
2.7 PS	ME227	Engineering Graphics-II	91	85.9	50
3.1 TS	MA301	Mathematics-III	45	NA	NA
3.2 TS	CE312	Theory of Structures	60	NA	NA
3.3 TS	CE313	Engineering Surveying-I	81	NA	NA
3.3 P	CE313L	Engineering Surveying-I Lab	90	NA	NA
3.4 TS	CE314	Basic Fluid Mechanics	83	NA	NA
3.4P	CE314L	Basic Fluid Mechanics Lab	82	NA	NA
3.5 TS	CE315	Building Technology-I	88	NA	NA
3.5 P	CE315L	Building Technology-I Lab	100	NA	NA
3.6 TS	CE316	Engineering Geoscience	70	NA	NA
3.6 P	CE316L	Engineering Geoscience Lab	76	NA	NA
4.1 TS	MA401	Mathematics-IV	54.3	NA	NA
4.2 TS	HU402	Accountancy for Engineers	86.2	NA	NA
4.3 TS	HU403	Communication and Presentation Skill	95.7	NA	NA
4.4 TS	CE414	Theory of Structures-II	78.7	NA	NA
4.5 TS	CE415	Engineering Surveying-II	96.8	NA	NA
4.5 P	CE415L	Engineering Surveying-II Lab	78.7	NA	NA
4.6 TS	CE416	Hydraulic Engineering	71.3	NA	NA
4.6 P	CE416L	Hydraulic Engineering Lab	93.6	NA	NA
4.7 TS	CE417	Building Technology-II	95.7	NA	NA
4.7 P	CE417L	Building Technology-II Lab	100	NA	NA

Short Code	Long Code	Course Name	Att. Of CO (2015-19)	Att. Of CO (2016-2020)	Set att. Level
4.8 P	HU408L	Communication Language Lab	91.5	NA	NA
	HU501	Engineering Economics	NA	NA	NA
	CE512	Design of Structures-I	NA	NA	NA
	CE513	Environmental Engineering-I	NA	NA	NA
	CE514	Transportation Engineering-I	NA	NA	NA
	CE515	Geotechnical Engineering-I	NA	NA	NA
	CE516	Concrete Technology	NA	NA	NA
	CE517	General Proficiency/Extra-Academic Activity-I	NA	NA	NA
	CE513L	Environmental Engineering-I Lab.	NA	NA	NA
	CE514L	Transportation Engineering-I Lab.	NA	NA	NA
	CE515L	Geotechnical Engineering-I Lab.	NA	NA	NA
	CE516L	Concrete Technology Lab.	NA	NA	NA
	CE611	Design of Structures-II	NA	NA	NA
	CE612	Environmental Engineering-II	NA	NA	NA
	CE613	Transportation Engineering-II	NA	NA	NA
	CE614	Geotechnical Engineering-II	NA	NA	NA
	CE615	Quantity Surveying	NA	NA	NA
	CE616	Hydrology & Flood Management	NA	NA	NA
	CE617	General Proficiency/Extra Academic Activity-II	NA	NA	NA
	CE618L	Survey Camp	NA	NA	NA
	CE612L	Environmental Engineering-II	NA	NA	NA
	CE613L	Transportation Engineering-II	NA	NA	NA
	CE711	Theory of Structures-III	NA	NA	NA
	CE712	Earthquake Engineering	NA	NA	NA
	CE713	Irrigation & River Engineering	NA	NA	NA
	CE714	Elective-I	NA	NA	NA
	CE715/HU705	Elective-II	NA	NA	NA
	CE716	Industrial Training	NA	NA	NA
	CE717	Project-I	NA	NA	NA
	CE811	Design of Structure-III	NA	NA	NA
	CE812	Construction Engineering & Management	NA	NA	NA
	CE813	Infrastructure Planning	NA	NA	NA
	CE814	Elective-III	NA	NA	NA
	CE815	Elective-IV	NA	NA	NA
	CE816	Project-II	NA	NA	NA
	CE817	Viva-Voce	NA	NA	NA

Table 3.2.2-b

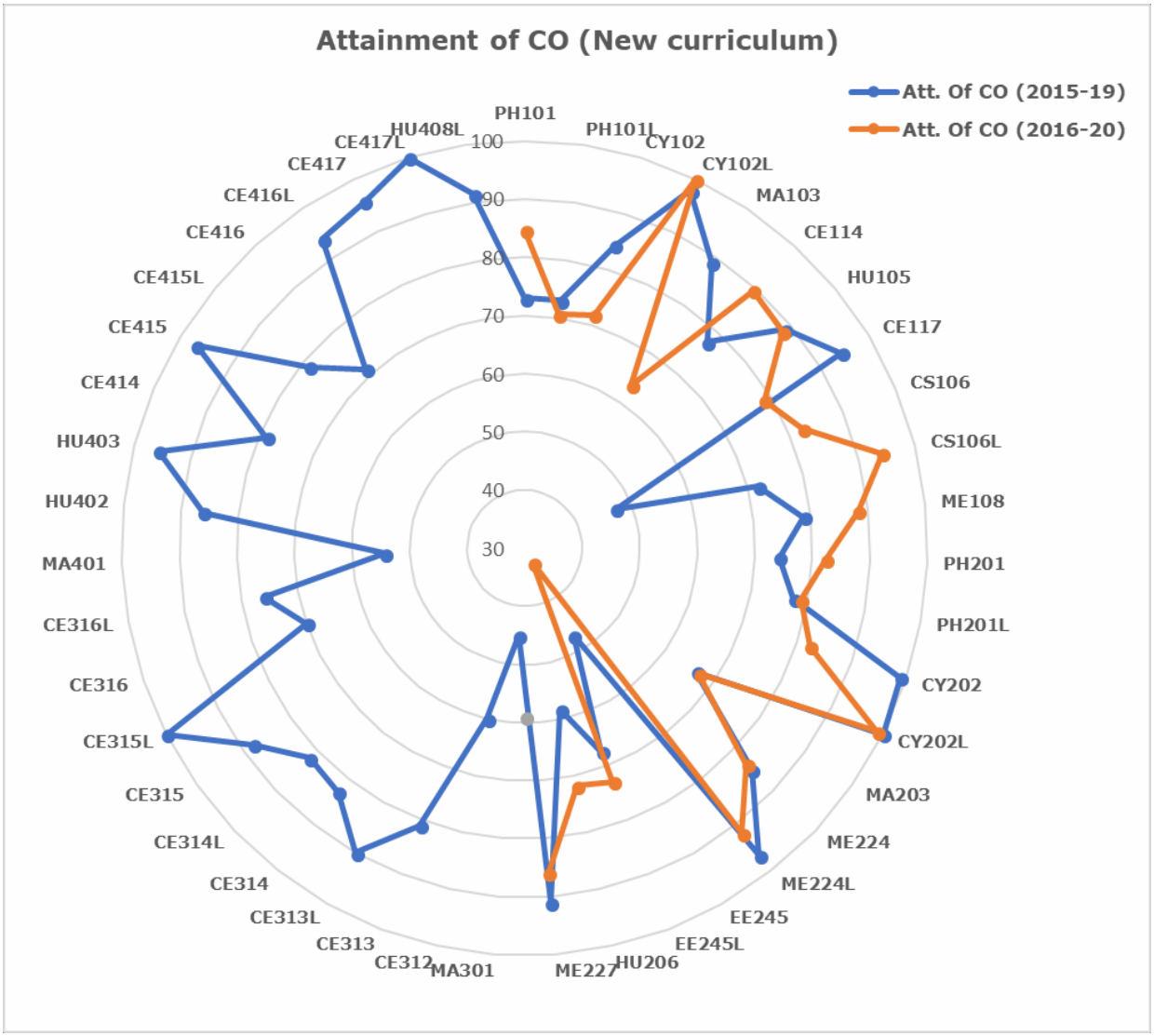


Fig. 3.2.2-b

Attainment of Program Outcomes and Program Specific Outcomes (50)

Describe assessment tools and processes used for measuring the attainment of each of the Program Outcomes and Program Specific Outcomes (10)

The attainment of CO has been computed as discussed in 3.2.1 and from the CO-PO matrices of all the courses, the attainment level of POs is calculated too.

The contribution of course in attaining a particular PO is calculated using the formula-

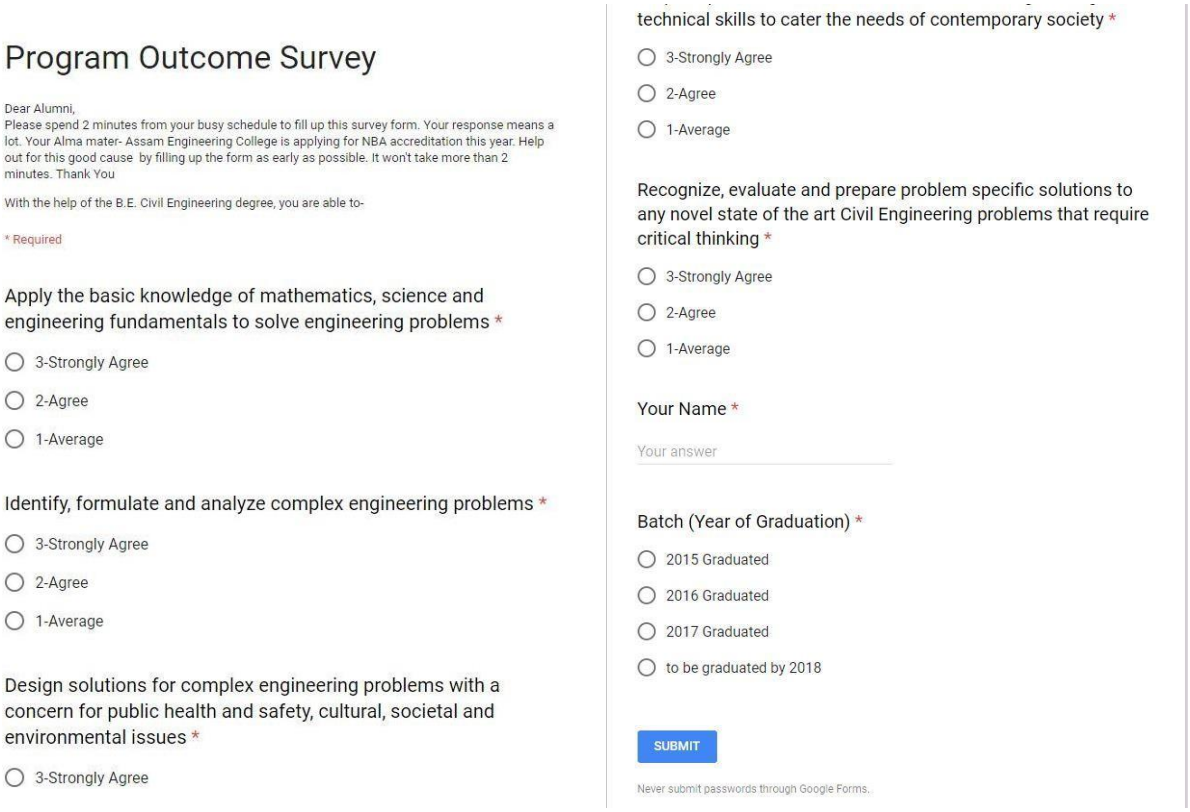
$$\frac{\text{Average CO to PO relevance value}}{100\,(\text{maximum value})} \times \text{Attainment of CO in \%}$$

Finally, for a particular PO all the values contributed by different courses are averaged up and is reported as the direct attainment of that particular PO. This constitutes 80% of the overall PO attainment.

However, 20% weightage has been given to Program End survey conducted among the passed-out students. The POs have been computes individually for every batch.

The survey form was circulated via google link and is shown in following figures. The link to the survey form is-

https://goo.gl/forms/GQD604Im2qNIdf2j1



Program Outcome Survey

Dear Alumni,
Please spend 2 minutes from your busy schedule to fill up this survey form. Your response means a lot. Your Alma mater- Assam Engineering College is applying for NBA accreditation this year. Help out for this good cause by filling up the form as early as possible. It won't take more than 2 minutes. Thank You

With the help of the B.E. Civil Engineering degree, you are able to-

* Required

Apply the basic knowledge of mathematics, science and engineering fundamentals to solve engineering problems *
- 3-Strongly Agree
- 2-Agree
- 1-Average

Identify, formulate and analyze complex engineering problems *
- 3-Strongly Agree
- 2-Agree
- 1-Average

Design solutions for complex engineering problems with a concern for public health and safety, cultural, societal and environmental issues *
- 3-Strongly Agree

technical skills to cater the needs of contemporary society *
- 3-Strongly Agree
- 2-Agree
- 1-Average

Recognize, evaluate and prepare problem specific solutions to any novel state of the art Civil Engineering problems that require critical thinking *
- 3-Strongly Agree
- 2-Agree
- 1-Average

Your Name *
Your answer

Batch (Year of Graduation) *
- 2015 Graduated
- 2016 Graduated
- 2017 Graduated
- to be graduated by 2018

SUBMIT

Never submit passwords through Google Forms.

Fig. 3.3.1 Two snapshots from the Program Outcome survey form circulated

Provide results of evaluation of each PO & PSO (40)

PO attainment for the batch 2013-17

Short Code	Long Code	Subject Name	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
1.1 TS	PH101	Physics-I	2.33	1.86	-	-	-	-	-	-	-	-	-	-
1.1 P	PH101L	Physics-I Lab	1.50	1.50	-	1.50	-	-	-	-	-	-	-	-
1.2 TS	CY102	Chemistry-I	2.45	1.51	-	-	-	0.38	0.57	-	-	-	-	0.57
1.2 P	CY102L	Chemistry-I lab	2.50	1.75	-	1.00	-	-	-	-	-	1.00	-	-
1.3 TS	MA103	Mathematics-I	2.28	2.28	0.91	0.15	-	-	-	-	0.15	-	-	1.52

Short Code	Long Code	Subject Name	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
1.4 TS	CE104	Elements of Civil Engineering	2.51	2.13	0.19	0.77	0.58	-	-	-	-	-	-	-
1.5 TS	HU105	English Communication and Technical Report Writing	-	0.92	-	0.92	-	0.92	0.92	1.22	2.76	2.07	-	2.76
1.6 TS	CE106	Engineering Graphics-I	1.91	1.91	1.54	1.64	1.36	1.64	0.45	-	-	-	-	-
1.7 PS	CS107	Introduction to Computing	1.60	1.40	1.80	0.80	1.20	-	-	-	-	-	-	-
1.8 S	ME108	Workshop-I	1.58	1.98	-	-	-	-	-	0.99	1.58	-	-	-
2.1 TS	PH201	Physics-II	1.89	1.51	-	-	-	-	-	-	-	-	-	-
2.1 P	PH201L	Physics-II Lab	1.56	1.56	-	1.56	-	-	-	-	-	-	-	-
2.2 TS	CY202	Chemistry-II	2.38	1.87	0.68	-	-	0.51	0.51	-	0.85	0.85	-	0.85
2.2P	CY202L	Chemistry-II Lab	1.95	1.95	-	1.22	-	0.49	0.98	-	-	0.98	-	-
2.3 TS	MA203	Mathematics-II	2.48	2.48	1.65	-	-	-	-	-	-	-	-	1.65
2.4 TS	ME203/ CE205	Engineering Mechnaics and Strength of Materials	2.62	1.85	1.53	1.40	0.78	-	-	-	-	-	-	0.44
2.4 P	ME203L/ CE205L	Engineering Mechnaics and Strength of Materials Lab	2.97	1.70	0.71	2.26	1.98	-	-	-	-	-	-	0.57
2.5 TS	EE206	Basic Electrical Engg.-I	2.25	2.25	2.25	1.50	1.20	0.75	2.25	0.30	0.75	-	-	2.25
2.5 P	EE206L	Basic Electrical Engg.-I Lab	2.44	2.44	-	0.81	-	-	-	-	2.44	0.54	-	2.44
2.6 TS	ME207	Engineering Graphics-II	2.59	2.59	0.86	-	0.34	0.52	-	-	-	-	-	0.86
2.7 S	ME208	Workshop-II	1.55	1.93	-	-	-	-	-	0.97	1.55	-	-	-
3.1 TS	MA301	Mathematics-III	2.54	2.54	-	-	-	-	-	-	-	-	-	1.69
3.2 TS	CE314	Basic Fluid Mechanics	2.40	2.32	2.00	1.44	1.36	1.28	1.20	1.12	1.04	1.12	1.20	1.20
3.2 P	CE314L	Basic Fluid Mechanics Lab	3.00	1.00	1.00	2.00	-	-	-	-	-	-	-	-
3.3 TS	CE313	Engineering Survey	2.38	1.68	1.26	1.82	-	0.28	0.84	1.12	1.40	1.12	0.56	0.56
3.3 P	CE313L	Engineering Survey Lab	2.40	2.40	1.40	1.20	-	0.40	0.40	0.20	3.00	1.40	-	-
3.4 TS	EE316 /ME317	Electrical and Mechanical Engineering	1.89	1.89	-	-	-	1.89	1.89	1.89	-	-	-	1.89
3.4P	EE316L/ ME317L	Electrical and Mechanical Engineering Lab	2.00	2.00	-	-	-	2.00	2.00	2.00	-	-	-	2.00
3.5 TS	CE315	Construction Practice and Building Drawing	2.75	1.84	-	0.92	-	-	-	-	-	-	-	-
3.5 P	CE315L	Construction Practice and Building Drawing Lab	2.40	1.40	2.00	0.60	0.60	-	-	-	-	-	-	-
3.6 TS	CE312	Theory of Structures-I	2.53	1.63	2.17	2.53	1.63	1.63	1.63	2.53	0.72	0.72	0.72	0.72

Short Code	Long Code	Subject Name	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
3.8 T	CE318	General Proficiency	0.97	0.97	0.97	0.97	1.94	1.94	1.94	2.91	2.91	2.91	0.97	2.91
4.1 TS	MA411	Advanced Mathematics and Numerical Analysis	2.32	1.85	1.24	0.15	0.15	-	-	-	0.15	-	-	1.08
4.2 TS	HU402	Sociology and Accountancy	-	0.89	-	-	-	1.18	0.89	1.18	1.03	0.89	0.89	2.66
4.3 TS	HU403	Communication Skill	-	1.50	-	1.25	-	1.83	1.00	1.50	1.66	2.50	-	2.50
4.4 TS	CE412	Theory of Structures-II	2.49	2.49	2.49	2.49	2.49	2.49	1.66	2.49	0.83	0.83	0.83	0.83
4.5 TS	CE413	Advanced Surveying	2.05	2.05	1.10	1.58	2.37	-	-	0.63	1.26	0.95	0.63	0.95
4.5 P	CE413L	Advanced Surveying Lab	2.28	2.12	0.82	0.82	1.31	-	-	0.49	2.45	0.65	-	0.82
4.6 TS	CE414	Hydraulic and Hydraulic Machines	2.55	2.55	1.94	1.70	0.85	-	-	-	-	-	-	-
4.6 P	CE414L	Hydraulic and Hydraulic Machines Lab	2.91	0.97	-	1.94	-	-	-	-	-	-	-	-
4.7 TS	CE415	Engineering Geoscience	1.68	1.12	1.12	0.70	0.56	-	0.28	-	-	-	-	0.70
4.7 P	CE415L	Engineering Geoscience Lab	2.49	1.81	1.81	1.59	0.91	-	-	-	-	-	-	0.91
4.9 T	CE416	General Proficiency	1.00	1.00	1.00	1.00	2.00	2.00	2.00	3.00	3.00	3.00	1.00	3.00
5.1 TS	HU501	Economics and Principles of Management	-	0.98	-	-	-	1.96	0.98	0.98	1.96	0.98	0.98	2.60
5.2 TS	CE512	Design of Structures-I	2.00	2.71	3.00	2.00	1.86	1.00	2.00	1.14	2.00	2.00	1.00	3.00
5.3 TS	CE513	Environmental Engineering-I	1.28	1.75	1.12	0.80	1.28	1.12	1.44	0.48	-	-	-	-
5.3 P	CE513L	Environmental Engineering-I Lab	0.77	1.53	0.77	0.96	0.57	1.72	1.34	0.38	-	-	-	-
5.4 TS	CE514	Transportation Engineering-I	2.47	2.16	2.16	2.00	2.00	2.00	2.16	1.39	1.85	1.85	1.70	1.70
5.4 P	CE514L	Transportation Engineering-I Lab	1.50	-	-	0.50	0.50	0.50	0.50	-	-	-	-	-
5.5 TS	CE515	Geotechnical Engineering	2.77	2.77	1.85	0.46	0.92	-	-	-	-	-	-	0.46
5.5 P	CE515L	Geotechnical Engineering Lab	3.00	1.17	-	2.00	1.00	-	-	-	2.00	3.00	-	-
5.6 TS	CE516	Concrete Technology	1.51	1.05	0.90	0.60	0.45	-	2.11	-	-	1.81	-	1.51
5.6 P	CE516L	Concrete Technology Lab	-	-	-	-	2.00	2.00	-	3.00	3.00	3.00	-	-
5.8 T	CE517	General Proficiency	1.00	1.00	1.00	1.00	2.00	2.00	2.00	3.00	3.00	3.00	1.00	3.00
6.1 TS	CE611	Design of Structures-II	1.98	2.68	2.97	1.98	1.84	0.99	1.98	1.98	1.98	1.98	0.99	2.97
6.1 P	CE611L	Design of Structures-II Lab	3.00	1.00	1.00	-	-	-	-	1.00	2.00	-	-	1.00
6.2 TS	CE612	Foundation Engineering	1.10	0.55	-	0.55	-	1.46	-	-	-	-	-	-

Short Code	Long Code	Subject Name	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
6.3 TS	CE613	Transportation Engineering-II	2.45	1.96	1.96	2.12	1.96	1.96	2.28	1.31	1.96	1.47	1.96	1.31
6.3 P	CE613L	Transportation Engineering-II Lab	1.82	1.16	0.99	1.65	0.66	1.32	-	0.99	-	-	-	1.16
6.4 TS	CE614	Environmental Engineering-II	1.14	1.90	0.76	0.57	0.38	0.95	0.38	-	-	-	-	-
6.4 P	CE614L	Environmental Engineering-II Lab	1.31	1.63	-	0.98	-	0.98	1.31	-	-	-	-	-
6.5 TS	CE615	Estimation and Valuation	2.42	1.94	0.97	-	0.97	0.32	-	-	0.48	-	-	-
6.6 TS	CE616	Hydrology	1.94	2.32	2.13	1.74	1.74	1.55	1.94	1.36	1.74	1.94	0.97	1.94
6.7 T	CE617	General Proficiency	2.00	2.00	-	1.67	2.00	1.67	1.67	2.00	3.00	3.00	-	1.67
6.8 P	CE618	Survey Camp	2.00	2.00	0.67	1.67	2.00	1.67	1.67	2.00	3.00	3.00	0.67	1.67
7.1 TS	CE711	Theory of Structures-III	1.98	2.97	1.98	1.98	1.98	0.99	0.99	0.99	1.98	0.99	0.99	2.97
7.2 TS	CE712	Design of Structures-III	2.63	2.63	2.35	2.77	2.35	2.63	2.49	2.35	2.35	1.80	1.52	1.52
7.3 TS	CE713	Civil Engineering Planning	2.07	1.75	0.96	0.96	-	0.64	-	-	-	-	-	-
7.4 TS	CE714	Irrigation Engineering	1.76	1.57	1.76	1.57	0.78	0.98	0.78	-	0.98	-	0.78	0.78
7.5_EI_1 TS	CE715A	Open Channel Flow	2.55	2.23	1.28	2.39	1.75	1.28	2.23	2.07	1.75	1.91	1.60	1.60
7.6_EII_2 TS	CE716A	Earthquake Engineering	2.14	2.29	2.00	1.57	2.14	1.86	1.43	1.29	1.71	1.43	1.43	3.00
7.7 P	CE717	Training	3.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	3.00
7.8 P	CE718	Project-I	3.00	3.00	3.00	3.00	2.00	2.00	2.00	2.00	3.00	3.00	2.00	3.00
8.1 TS	CE811	Design of Structures-IV	1.33	1.33	1.67	1.50	1.33	1.33	1.50	1.17	1.00	1.50	1.33	1.50
8.2 TS	CE812	Flood Management and River Engineering	1.57	1.57	1.76	1.57	-	1.37	1.17	0.59	0.59	0.39	0.39	0.59
8.3 TS	CE813	Construction Management	1.92	1.34	1.34	0.57	-	-	-	-	-	-	1.15	-
8.4_EIII_3 TS	CE814B	Design of Substructures	2.84	2.84	2.84	2.84	1.70	1.70	0.95	0.95	-	-	-	1.89
8.5_EIV_1 TS	CE815A	Water Power Engineering	1.67	0.91	1.22	1.98	1.06	-	0.46	-	-	-	-	-
8.6 P	CE817	Viva Voce	2.81	0.94	0.94	-	-	-	-	0.94	1.88	2.81	-	0.94
8.7 P	CE816	Project-II	3.00	3.00	3.00	3.00	2.00	2.00	2.00	2.00	3.00	3.00	2.00	3.00
		Direct Outcome	2.11	1.78	1.50	1.42	1.36	1.35	1.37	1.44	1.81	1.73	1.12	1.65
		Indirect Outcome	2.79	2.36	2.57	2.29	2.29	2.50	2.86	2.64	2.57	2.57	2.50	2.86
		Overall Outcome	**2.24**	**1.90**	**1.71**	**1.60**	**1.55**	**1.58**	**1.67**	**1.68**	**1.96**	**1.90**	**1.39**	**1.90**

Table B.3.3.2-a

Similar table is prepared for PSOs and shown the following table-

PSO attainment for the batch 2013-17

Short Code	Long Code	Subject Name	PSO1	PSO2	PSO3
1.1 TS	PH101	Physics-I	-	-	-
1.1 P	PH101L	Physics-I Lab	-	-	-
1.2 TS	CY102	Chemistry-I	-	-	-
1.2 P	CY102L	Chemistry-I lab	-	-	-
1.3 TS	MA103	Mathematics-I	-	-	-
1.4 TS	CE104	Elements of Civil Engineering	0.19	0.58	0.58
1.5 TS	HU105	English Communication and Technical Report Writing	-	-	-
1.6 TS	CE106	Engineering Graphics-I	-	0.64	0.18
1.7 PS	CS107	Introduction to Computing	-	-	-
1.8 S	ME108	Workshop-I	-	-	-
2.1 TS	PH201	Physics-II	-	-	-
2.1 P	PH201L	Physics-II Lab	-	-	-
2.2 TS	CY202	Chemistry-II	-	-	-
2.2P	CY202L	Chemistry-II Lab	-	-	-
2.3 TS	MA203	Mathematics-II	-	-	-
2.4 TS	ME203/CE205	Engineering Mechnaics and Strength of Materials	0.96	0.78	-
2.4 P	ME203L/CE205L	Engineering Mechnaics and Strength of Materials Lab	0.71	1.13	-
2.5 TS	EE206	Basic Electrical Engg.-I	-	-	-
2.5 P	EE206L	Basic Electrical Engg.-I Lab	-	-	-
2.6 TS	ME207	Engineering Graphics-II	-	-	-
2.7 S	ME208	Workshop-II	-	-	-
3.1 TS	MA301	Mathematics-III	-	-	-
3.2 TS	CE314	Basic Fluid Mechanics	0.48	0.64	0.16
3.2 P	CE314L	Basic Fluid Mechanics Lab	1.00	1.00	-
3.3 TS	CE313	Engineering Survey	0.98	1.26	0.70
3.3 P	CE313L	Engineering Survey Lab	1.20	2.00	0.60
3.4 TS	EE316/ME317	Electrical and Mechanical Engineering	-	-	-
3.4P	EE316L/ME317L	Electrical and Mechanical Engineering Lab	-	-	-
3.5 TS	CE315	Construction Practice and Building Drawing	0.92	1.29	0.55
3.5 P	CE315L	Construction Practice and Building Drawing Lab	1.40	2.00	0.40
3.6 TS	CE312	Theory of Sytructures-I	0.91	1.45	0.36
3.8 T	CE318	General Proficiency	-	2.91	-
4.1 TS	MA411	Advanced Mathematics and Numerical Analysis	-	-	-
4.2 TS	HU402	Sociology and Accountancy	-	-	-
4.3 TS	HU403	Communication Skill	-	-	-
4.4 TS	CE412	Theory of Structures-II	1.16	1.16	0.50
4.5 TS	CE413	Advanced Surveying	1.42	2.21	1.58
4.5 P	CE413L	Advanced Surveying Lab	1.31	1.96	0.82
4.6 TS	CE414	Hydraulic and Hydraulic Machines	0.97	1.09	-
4.6 P	CE414L	Hydraulic and Hydraulic Machines Lab	0.97	0.97	-
4.7 TS	CE415	Engineering Geoscience	1.12	1.12	0.42
4.7 P	CE415L	Engineering Geoscience Lab	1.13	1.36	0.45

Short Code	Long Code	Subject Name	PSO1	PSO2	PSO3
4.9 T	CE416	General Proficiency	-	3.00	-
5.1 TS	HU501	Economics and Principles of Management	-	-	-
5.2 TS	CE512	Design of Structures-I	2.71	1.86	1.71
5.3 TS	CE513	Environmental Engineering-I	1.28	1.28	0.80
5.3 P	CE513L	Environmental Engineering-I Lab	1.15	0.57	1.34
5.4 TS	CE514	Transportation Engineering-I	1.39	1.23	1.08
5.4 P	CE514L	Transportation Engineering-I Lab	1.00	2.50	1.50
5.5 TS	CE515	Geotechnical Engineering	1.38	1.85	1.08
5.5 P	CE515L	Geotechnical Engineering Lab	1.33	2.00	0.50
5.6 TS	CE516	Concrete Technology	1.05	1.35	0.75
5.6 P	CE516L	Concrete Technology Lab	1.25	1.75	0.75
5.8 T	CE517	General Proficiency	-	3.00	-
6.1 TS	CE611	Design of Structures-II	2.54	1.84	1.55
6.1 P	CE611L	Design of Structures-II Lab	-	1.00	-
6.2 TS	CE612	Foundation Engineering	1.83	1.83	0.91
6.3 TS	CE613	Transportation Engineering-II	1.47	1.96	0.82
6.3 P	CE613L	Transportation Engineering-II Lab	0.17	0.33	2.64
6.4 TS	CE614	Environmental Engineering-II	2.28	1.90	1.14
6.4 P	CE614L	Environmental Engineering-II Lab	1.63	1.31	0.65
6.5 TS	CE615	Estimation and Valuation	2.26	2.42	1.61
6.6 TS	CE616	Hydrology	2.32	2.32	1.55
6.7 T	CE617	General Proficiency	0.67	2.00	0.33
6.8 P	CE618	Survey Camp	0.67	2.00	0.33
7.1 TS	CE711	Theory of Structures-III	1.58	1.98	0.99
7.2 TS	CE712	Design of Structures-III	2.77	1.94	1.11
7.3 TS	CE713	Civil Engineering Planning	1.60	2.39	1.75
7.4 TS	CE714	Irrigation Engineering	2.15	1.96	1.57
7.5_EI_1 TS	CE715A	Open Channel Flow	2.07	2.07	0.96
7.6_EII_2 TS	CE716A	Earthquake Engineering	2.71	2.71	1.86
7.7 P	CE717	Training	2.00	3.00	-
7.8 P	CE718	Project-I	3.00	3.00	3.00
8.1 TS	CE811	Design of Structures-IV	2.17	2.50	1.83
8.2 TS	CE812	Flood Management and River Engineering	2.74	2.74	1.96
8.3 TS	CE813	Construction Management	1.34	1.53	1.15
8.4_EIII_3 TS	CE814B	Design of Substructures	2.84	2.84	2.46
8.5_EIV_1 TS	CE815A	Water Power Engineering	1.37	1.52	0.76
8.6 P	CE817	Viva Voce	0.94	2.81	0.94
8.7 P	CE816	Project-II	3.00	3.00	3.00
		Direct Outcome	1.49	1.77	1.10
		Indirect Outcome	2.50	2.50	2.43
		Overall Outcome	**1.69**	**1.92**	**1.37**

Table B.3.3.2-b