



NATIONAL BOARD OF ACCREDITATION

SELF ASSESSMENT REPORT (SAR)

UNDERGRADUATE CIVIL ENGINEERING PROGRAM

(TIER-II)

ASSAM ENGINEERING COLLEGE

FIRST TIME ACCREDITATION

May, 2018

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PART A: Institutional Information

1. Name and Address of the Institution: Assam Engineering College, Jalukbari, Guwahati, Assam 781013

2. Name and Address of the Affiliating University:

- a) Gauhati University, Jalukbari, Guwahati, Assam,
- b) Assam Science and Technology University, Guwahati, Assam

3. Year of establishment of the Institution: 1955

4. Type of the Institution:

- | | |
|-------------------|-------------------------------------|
| University | <input type="checkbox"/> |
| Deemed University | <input type="checkbox"/> |
| Government-Aided | <input type="checkbox"/> |
| Autonomous | <input type="checkbox"/> |
| Affiliated | <input checked="" type="checkbox"/> |

5. Ownership Status:

- | | |
|----------------------------|-------------------------------------|
| Central Government | <input type="checkbox"/> |
| State Government | <input checked="" type="checkbox"/> |
| Government-Aided | <input type="checkbox"/> |
| Self-financing | <input type="checkbox"/> |
| Trust | <input type="checkbox"/> |
| Society | <input type="checkbox"/> |
| Section 25 Company | <input type="checkbox"/> |
| Any Other (Please specify) | <input type="checkbox"/> |

Provide Details: Owned by Government of Assam

6. Other Academic Institutions of the Trust/Society/Company etc., if any:

Name of the Institution(s)	Year of Establishment	Programs of Study	Location
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Table A.6

7. Details of all the programs being offered by the institution under consideration:

Sl No.	Program Name	Name of the Department	Year of Start	Intake	Increase in intake	Year of increase	AICTE Approval 1	Accreditation Status*
Bachelors in Engineering/Undergraduate programs								
1	B.E. in Civil Engineering	Civil Engineering	1955	60	30	2009	90	Applying first time
2	B.E. in Mechanical Engineering	Mechanical Engineering	1957	30	30	1962	60	Applying first time
3	B.E. in Electrical Engineering	Electrical Engineering	1957	30	Phase I- 30 nos. Phase II- 30 nos.	Phase I- 1962 Phase II- 2009	90	Applying first time
4	B.E. in Chemical Engineering	Chemical Engineering	1963	30	30	2007	60	Applying first time
5	B.E. in Electronics and Telecommunication Engineering	Electronics and Telecommunication Engineering	1984	15	Phase I- 15 nos. Phase II- 30 nos.	Phase I- 1996 Phase II- 2007	60	Applying first time
6	B.E. in Instrumentation Engineering	Instrumentation Engineering	1998	20	-	-	20	Eligible but not applied
7	B.E. in Industrial and Production Engineering	Industrial and Production Engineering	1998	20	-	-	20	Eligible but not applied -
8	B.E. in Computer Science Engineering	Computer Science Engineering	1998	20	-	-	20	Eligible but not applied -
Masters in Engineering/Postgraduate programs								
9	M.E. in Soil Mechanics/Geotechnical Engineering	Civil Engineering	1988	18	-	-	18	Eligible but not applied
10	M.E. in Watershed Management and Flood Control	Civil Engineering	1977	18	-	-	18	Eligible but not applied

Sl No.	Program Name	Name of the Department	Year of Start	Intake	Increase in intake	Year of increase	AICTE Approval	Accreditation Status*
11	M.E. in Electrical Engineering	Electrical Engineering	2004	18	-	-	18	Eligible but not applied
12	M.E. in Mechanical Engineering	Mechanical Engineering	2005	18	-	-	18	Eligible but not applied
Other postgraduate programs								
13	Masters in Computer Application	Computer Applications Department	1990	30	-	-	30	Eligible but not applied

8. Programs to be considered for Accreditation vide this application:

S. No.	Program
1.	B.E. in Civil Engineering
2.	B.E. in Mechanical Engineering
3.	B.E. in Electrical Engineering
4.	B.E. in Chemical Engineering
5.	B.E. in Electronics and Telecommunication Engineering

Table A.8

9. Total number of employees in the institution:

A. Regular Employees (Faculty and Staff):

Items		CAY (2017-18)		CAYm1 (2016-17)		CAYm2 (2015-16)	
		Min	Max	Min	Max	Min	Max
Faculty in Engineering	M	59	59	58	58	58	58
	F	21	21	25	25	25	25
Faculty in Maths, Science &	M	9	9	11	11	13	13
	F	13	13	12	12	12	12
Non-teaching staff	M	172	172	162	162	178	178
	F	14	14	11	11	13	13

Table A.9a

B. Contractual Staff Employees (Faculty and Staff): (Not covered in Table A)

Items		CAY (2017-18)		CAYm1 (2016-17)		CAYm2 (2015-16)	
		Min	Max	Min	Max	Min	Max
Faculty in Engineering	M	25	26	12	12	12	12
	F	14	14	9	9	9	9
Faculty in Maths, Science & Humanities	M	4	4	1	1	0	0
	F	1	1	1	1	0	0
Non-teaching staff	M	5	5	3	3	3	3
	F	1	1	1	1	1	1

Table A.9b

10. Total number of Engineering Students:

Bachelors in Engineering/Undergraduate programs			
Item	CAY (2017-18)	CAYm1 (2016-17)	CAYm2 (2015-16)
Total no. of boys	322	324	320
Total no. of girls	98	99	104
Total no. of students	420	423	424

Masters in Engineering/Postgraduate programs			
Item	CAY (2017-18)	CAYm1 (2016-17)	CAYm2 (2015-16)
Total no. of boys	53	58	43
Total no. of girls	16	15	20
Total no. of students	69	73	63

Masters in Computer Application			
Item	CAY (2017-18)	CAYm1 (2016-17)	CAYm2 (2015-16)
Total no. of boys	23	17	21
Total no. of girls	6	10	8
Total no. of students	29	27	29

Table A.10

11. Vision of the Institution:

To be an institution for promoting and supporting sustainable development

12. Mission of the Institution:

- To prepare technical manpower with knowledge skills and values of sustainability.
- To take up relevant problems of society & industry as projects, research themes for study and to provide technological solutions.

13. Contact Information of the Head of the Institution and NBA coordinator, if designated:

i. Head of the Institution

Name: **Dr. Atul Bora**

Designation: Principal, Assam Engineering College

Mobile No: +91-98640-78634

Email id: principal@aec.ac.in

ii. NBA coordinator, if designated

Name: **Dr. Atul Bora**

Designation: Principal, Assam Engineering College

Mobile No: +91-98640-78634

Email id: principal@aec.ac.in

PART B: Criteria Summary

Name of the program: Bachelor of Engineering (Civil Engineering)

Criteria No.	Criteria	Mark/Weightage
Program Level Criteria		
1.	Vision, Mission and Program Educational Objectives	60
2.	Program Curriculum and Teaching – Learning Processes	120
3.	Course Outcomes and Program Outcomes	120
4.	Students' Performance	150
5.	Faculty Information and Contributions	200
6.	Facilities and Technical Support	80
7.	Continuous Improvement	50
Institute Level Criteria		
8.	First Year Academics	50
9.	Student Support Systems	50
10.	Governance, Institutional Support and Financial Resources	120
Total		1000

Criterion 1	Vision, Mission and Program Educational Objectives	60
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1. VISION, MISSION AND PROGRAM EDUCATIONAL OBJECTIVES (60)

State the Vision and Mission of the Department and Institute (5)

VISION AND MISSION OF THE INSTITUTION

Vision

To be an institution for promoting and supporting sustainable development.

Mission

- To prepare technical manpower with knowledge skills and values of sustainability.
- To take up relevant problems of society & industry as projects, research themes for study and to provide technological solutions.

VISION AND MISSION OF THE DEPARTMENT

Vision

To have complete synergy between teaching and learning for producing civil engineers, who are competent and socially responsible to contribute to the sustainable development of the state, the region and the nation, with global perspective.

Mission

1. To provide state-of-the-art teaching and learning environment where students can solve problems related to civil engineering.
2. To generate excellent human resource in civil engineering through integration of research, innovation and sustainable technology in the learning domains of under-graduate and post-graduate education.
3. To make students capable of designing sustainable solutions for engineering challenges.
4. To develop researchers and regional leaders in the field of civil engineering by serving as a knowledge hub for the society through continuing education, professional program and innovative consultation.

State the Program Educational Objectives (PEOs) (5)

1. To produce competent, smart and efficient civil engineering graduates capable of executing civil engineering works with planning, design, construction and project management capabilities.
2. To develop competency in the civil engineering under-graduates to analyze and formulate sustainable solutions of civil engineering and allied problems using the principles of applied mathematics, science and basic engineering tools.
3. To train the civil engineering under-graduates to understand the origin, working principles, and outcomes of civil engineering and allied projects from parts to whole, in terms of technology, economy, sustainability, social and environmental aspects.
4. To encourage inquisitiveness and innovation in the under-graduate students to motivate them for lifelong learning and higher studies or research in civil engineering and allied disciplines.
5. To instill confidence, professional responsibilities and ethical sense in the under-graduate civil engineering students, so that they can take significant and leading roles for development of the state, the region and the nation.

Indicate where the Vision, Mission and PEOs are published and disseminated among stakeholders (10)

The Vision, Mission and PEO of Department of Civil Engineering, Assam Engineering College are published in the departmental website as well as Alumni Association website. Both the websites can be viewed by internal as well external stakeholders of the college. The same are being circulated in the college prospectus also.

The Vision, mission, PEO statements are published in-

	Internal Stake Holders	External Stake Holders
College/Department website (www.aec.ac.in/civil-engineering)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Departmental Brochure (2018-19)	<input checked="" type="checkbox"/>	

The Vision, mission, PEO statements are disseminated in-

	Internal Stake Holders	External Stake Holders
Faculty rooms	<input checked="" type="checkbox"/>	
Class rooms	<input checked="" type="checkbox"/>	
Departmental notice boards	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Laboratories	<input checked="" type="checkbox"/>	
Departmental library	<input checked="" type="checkbox"/>	
Department office/enquiry section	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Departmental corridors	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Seminar Room	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

State the process for defining the Vision and Mission of the Department, and PEOs of the program (25)

The Vision, Mission and PEOs of the department have been established through a thorough consultative process by a series of discussions amongst the faculty members first, and then involving other stakeholders, as well, such as students, their guardians, academia and industry people from outside world. In finalising the Vision, Mission and PEOs of the department, institute's vision and mission, future scope of the department and the societal requirements etc. have been kept in mind. The process is shown in Fig. 1.4.1

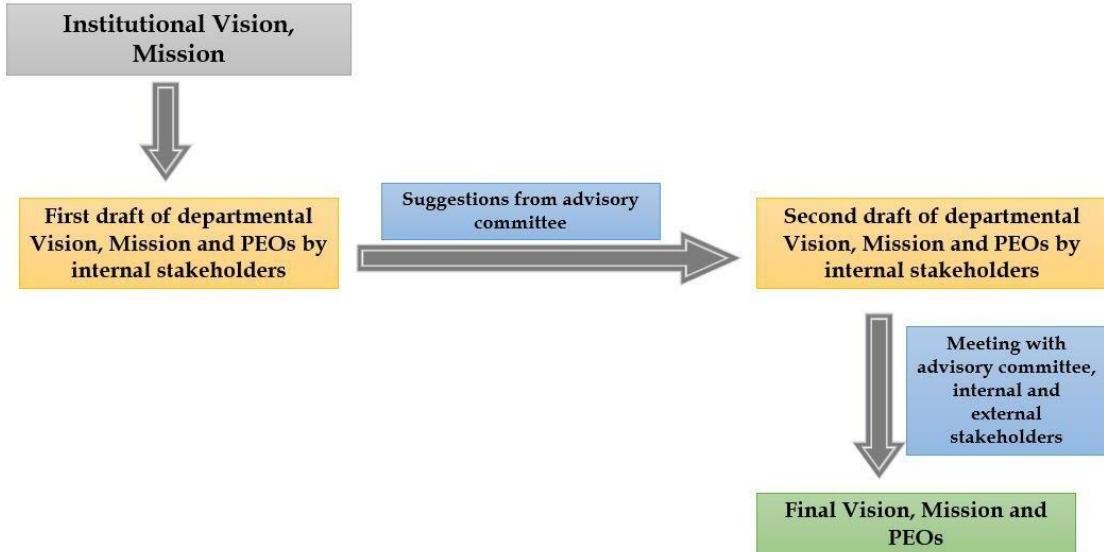


Figure 1.4.1 Process of establishment of vision, mission and PEOs of the department

The following steps were followed:

Step 1: Internal stakeholders of the department such as faculty members, students, staff etc. have been invited to put forward their suggestions for the Vision, Mission and PEOs of the department to be kept in line with institute's vision and mission.

Step 2: Senior faculty members of the department alongwith the members of the advisory committee have discussed it further to arrive at the departmental vision, mission and the PEOs.

Step 3: Finally, the vision, mission and PEOs are finalized in a generalized multi-stakeholder meeting* after incorporating necessary modifications based on stakeholders' input.

*The advisory committee, all the faculty members of the department, students from all the current batches, industry people, alumni and parents of some students were present in the multi-stakeholders meeting.

Establish consistency of PEOs with Mission of the Department (15)

The PEOs of department of civil engineering are closely linked and consistent with the mission of the institute and the department. The program educational objectives provide the first step towards a career of achievement and service in the Infrastructural sector. The needed background of knowledge and skills to survive in the industry are acquired through the PEOs only. They focus on the various professional activities that are carried out by the students in order to provide innovative solutions for the existing issues in different domains.

PEO Statements	M1	M2	M3	M4
PEO1: To produce competent, smart and efficient civil engineering graduates capable of executing civil engineering works with planning, design, construction and project management capabilities.	3	3	2	3
PEO2: To develop competency in the civil engineering under-graduates to analyze and formulate sustainable solutions of civil engineering and allied problems using the principles of applied mathematics, science and basic	2	2	3	2

PEO Statements	M1	M2	M3	M4
engineering tools.				
PEO3: To train the civil engineering under-graduates to understand the origin, working principles, and outcomes of civil engineering and allied projects from parts to whole, in terms of technology, economy, sustainability, social and environmental aspects.	2	3	3	2
PEO4: To encourage inquisitiveness and innovation in the under-graduate students to motivate them for lifelong learning and higher studies or research in civil engineering and allied disciplines.	3	1	1	3
PEO5: To instill confidence, professional responsibilities and ethical sense in the under-graduate civil engineering students, so that they can take significant and leading roles for development of the state, the region and the nation.	3	2	1	3

Table B.1.5

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

M1, M2, M3 and M4 defines the mission statements of the department

2. PROGRAM CURRICULUM AND TEACHING - LEARNING PROCESSES (120)

Program Curriculum (20)

State the process used to identify extent of compliance of the University curriculum for attaining the Program Outcomes and Program Specific Outcomes as mentioned in Annexure I. Also mention the identified curricular gaps, if any (10)

The extent of compliance of the University curriculum for attaining the Program Outcomes and Program Specific Outcomes is identified using the following criteria:

1. Based on student academic achievement: The overall academic achievement of a particular batch is assessed at the end of the program by reviewing the average performance of the batch.
2. Based on academic/research projects: The quality of projects undertaken by the students is evaluated with the help of comments from internal as well as external examiners. The contribution of students in publications (journals, conferences, etc.) are also used for the assessment.
3. Based on student engagement after completion of the program: Student engagement after completion of the program is evaluated based on the percentage of students getting placed in the industry, success rate in competitive examinations (such as GATE, GRE, etc.), admission in reputed institutions for higher studies and Start-Ups initiated by the students.
4. Based on feedback: The feedbacks received from the alumni are also taken into consideration in determining the extent to which the program outcomes are satisfied.

The following table shows the different types of courses a student undergoes in the B.E. Civil Engineering program. The complete list of the courses is given in Annexure VI.

Type of course	No. of courses	Total Credit	% in total credit
Allied Engineering	3	10	3.8
Basic Science	8	32	12.3
Core Civil Engineering	25	100	38.3
Employment Enhancement course	6	24	9.2
Elective	4	16	6.1
Engineering Science	5	20	7.7
Humanities	6	15	5.7
Laboratories	21	44	16.9
TOTAL	78	261	100

State the delivery details of the content beyond the syllabus for the attainment of POs and PSOs (10)

No.	Gap	Action taken	Date-Month-Year	Resource Person with designation	% of students	Relevance to POs, PSOs
1	Usage of modern tools and softwares	Two-day Workshop on Computational Methods in Civil Engineering	22nd & 23rd Feb, 2018	<ul style="list-style-type: none"> • Ritukesh Bharali, Computational Mechanics group Alumni, TU Delft, Netherlands • Dr. Diganta Goswami, Assoc. Professor, AEC • Dr. Bipul Talukdar, Assoc. Professor, AEC 	48.22% of B.E. 6 th and 8 th sem students	PO5: Modern Tool Usage
2	Awareness of recent engineering challenges in NE India	One day seminar on Civil Engineering Challenges in North East India	27 th Feb, 2018	<ul style="list-style-type: none"> • Dr. Diganta Goswami, Assoc. Professor, AEC • Dr. Bibhash Sarma, Assoc. Professor, AEC • Bibhuti B. Bhardwaj, Asst. Professor (TEQIP), AEC • Diptojit Datta, Asst. Professor (TEQIP), AEC 	96.9 % of 4 th sem students	PSO1: Challenges in Civil Engineering

No.	Gap	Action taken	Date-Month-Year	Resource Person with designation	% of students	Relevance to POs, PSOs
3	Ethics	Alumni-Student Interaction meet	28 th Feb, 2018	Mr. Anand Dharmapuri, Vice President, Nornico Pvt. Ltd., Ex-commander of Indian Navy	27 students attended (open to all branches)	PO8: Ethics
4	Ethics	Alumni-Student Interaction meet	8 th of Feb, 2018	Mr. Arup Goswami, P. Engg., ARGOS HOMES INC., Calgary, Canada		PO8: Ethics
5	Modern industry knowledge	Industry Visit	9 th and 10 th April, 2018	Dalmia Cement Group Employees of Lanka Plant	63.4% of 6 th sem students	PSO2: Industry Readiness
6	Performance in GATE	GATE coaching classes	Started from 12 th of March, 2018	<ul style="list-style-type: none"> • Bibhuti B. Bhardwaj, Asst. Professor (TEQIP) • Rupali Sarmah, Asst. Professor (TEQIP) • Jayshree Hazarika, Asst. Professor (TEQIP) • Diptojit Datta, Asst. Professor (TEQIP) 	20 to 30% of 6 th semester students	PSO3: Critical thinking

Table B.2.1.2a

Teaching - Learning Processes (100)

Describe Processes followed to improve quality of Teaching & Learning (25)

The Department of Civil Engineering at Assam Engineering College is sincerely committed to improving the quality of the overall teaching-learning process. The department has implemented a number of initiatives toward the same and regular student feedback is used to ensure that the implemented techniques are on the right track.

Feedback collected from the students in the department of Civil Engineering are of two types. The first one is on the course and second one is on the teacher. The course end survey is merged with the first type of feedback and students are asked to write on the contents of the course, whether the students are confident on the COs of the course, what did they like most about the course, what did they hate

most about the course and any suggestion for the junior batch. The course instructor then evaluates the feedback forms himself and answers the students if any is required. However, the second feedback form, which is on the course instructor are collected anonymously from the students and the course instructor can't see his/her feedbacks directly. The HoD goes through the feedbacks and take necessary action, if any is required.

The Feedback Form is collected by the faculty member who is in-charge for a particular year, and also who is not teaching the students of that year so that students can freely and fearlessly express their views in front of him. Once all the feedback forms have been collected, the following procedure is adopted:

- The data is compiled for each teacher and the course.
- This compiled data is then utilized to understand the status of the teaching learning process for each course and each year of the program.
- For courses where the teaching-learning process is not satisfactory as per the feedback received, the Head of the Department talks to the concerned faculty individually to implement changes required to make the teaching-learning process better.

DEPARTMENT OF CIVIL ENGINEERING
ASSAM ENGINEERING COLLEGE, GUWAHATI-13

Subject Name: _____

Subject Code: _____

Name of teacher: _____

Performance Appraisal of Class Room Teaching

Dear student,

Please tick the appropriate box honestly. Your input means a lot to improve the quality of class room teaching.

Sl No.	Element	Rating Scale	Remarks
1	Aim/Objective of each lesson made clear	0 1 2 3 4	
2	Teaching techniques are effective	0 1 2 3 4	
3	Concepts and principles illustrated with concrete examples	0 1 2 3 4	
4	Active student performance ensured in the class	0 1 2 3 4	
5	Question posed at proper levels	0 1 2 3 4	
6	Students free to raise doubts/as questions	0 1 2 3 4	
7	Communication effective	0 1 2 3 4	
8	Chalkboard/Presentation work systematic	0 1 2 3 4	
9	Student interest maintained	0 1 2 3 4	
10	Proper link up of main points at the end of each class	0 1 2 3 4	
11	Planning and preparation for teaching evident	0 1 2 3 4	
12	Confidence in subject matter evident	0 1 2 3 4	
13	Homework/ Assignments examined and returned within reasonable time	0 1 2 3 4	
14	Engages class punctuality	0 1 2 3 4	

Date: _____ Semester: _____

Fig. 2.2.1-a A sample Feedback survey sheet on teacher

Course End Survey
Transportation Engineering Laboratory-II (CE 613 L)
B.E. 6th Semester
Department of Civil Engineering
Assam Engineering College, Guwahati
Date: 29th April, 2018

Roll No.	Name:
----------	-------

Dear student,
This questionnaire is prepared to test the quality of the course- Transportation Engineering Laboratory-II (CE 613 L). Your input means a lot. Please fill up very frankly and let us know your confidence in the following outcomes after attending the course.
On a scale of 0 to 100 please write down your confidence level.
100-Totally confident, 0-No confidence at all

Course Objective	After attending this course, you are able to-	Confidence Level (0 to 100)
CO 1	Justify why a particular test is required for bitumen i.e. you know why to perform the test	
CO 2	Predict in what type of situation or condition the material should be used by looking at the results	
CO 3	Predict the change in test results for any shortcoming in the test procedure	
CO 4	Review the test results to find out the limitations in the apparatus/tools used	
CO 5	Judge different results of the test and choose the correct ones	
CO 6	Relate the consequence of the test protocols to real life situation	

1. What did you like most about this course?

2. What did you not like at all about this course?

3. What will you suggest to improve the outcome of this course for the junior batch?

Fig. 2.2.1-b A sample course end survey form

Apart from the aforementioned two feedback forms, students are also encouraged to provide feedback on the facilities available in the department. This includes all the facilities of the department such as- Classrooms, all the laboratories, drawing hall, departmental office, wifi/Internet, T&P support, mentoring system, departmental library etc. Their suggestions to improve the particular facility is also sought and the same is assessed and taken into consideration. A sample feedback survey form of the same is shown-

FEEDBACK ON FACILITIES		
Department of Civil Engineering Assam Engineering College		
Particular	Marks on available facilities (out of 10)	Suggestion to improve the facility
Classrooms		
Environmental Engg. Lab		
Transportation Engg. Lab		
Geotechnical Engg. Lab		
Strength of Materials Lab		
Surveying Lab		
Departmental Computer Center		
Drawing Hall		
Departmental office		
Wifi / Internet		
T&P support in Civil Engineering Department		
Mentoring system		
Departmental library		
Others, Specify-		
Roll No.	Name	
Date	Current semester	

Fig. 2.2.1-c A sample feedback survey sheet on facilities

Quality of internal semester Question papers, Assignments and Evaluation (20)

Initiatives:

- Assignments are designed in a way that it requires critical thinking of the students.
- Realistic problems of the current scenario of the region are reflected in the assignments as far as possible.
- Open book tests are conducted sometimes
- Submission of the assignments is made online with strict deadlines.
- Although most of the assignments are given individually, some are given group-wise to develop the taste of team spirit among the students.

- Assignments are evaluated as per the rubric given for the task. The same is circulated amongst the students much before the submission of the assignment. This acts as a motivation and also the quality of the assignments.

Implementation Details:

- The norms of the assignments standard are circulated to all the faculty members of the department and they follow the same.
- Evaluation rubrics are then finalized by the respective faculty members.

Analysis of learning levels

- The questions of the assignments and the examination papers are set in such a way that they fulfill the COs of the subject.
- The marks are analyzed to see the % of students getting higher than the set attainment level at the end of every semester for each course.

Quality of student projects (25)

Initiatives

- The projects of the students are selected in accordance with POs as well as PSOs of the department.
- Students are required to take two projects in the final year, one in each semester.
- Seventh semester project can be related to any civil engineering field of interest of the student. Students are provided with new ideas of various fields by the respective faculties (referring journals, future scopes of previous projects, challenging needs in the domain of civil engineering).
- Eighth semester project is mainly on analysis and design of a multistoried building, with special emphasis on seismic analysis and design, in line with **PSO1**.
- Students are motivated to take practical and demanding projects which can be useful for the society and will also be helpful in their professional career.
- Apart from the application of basic engineering knowledge, students are encouraged to make use of advanced and modern tools, softwares to carry

out their project.

- Students are provided with all necessary resources (data, lab materials, workers etc.) to smoothly carry out the project.
- Students are encouraged to take participation in various project exhibitions and competitions, both internal and external.
- Students are encouraged to publish their work in reputed journals/conferences.

Evaluation scheme

Rubrics are formed separately for both 7th and 8th semester projects for transparent evaluation. Two separate committees are also formed. The rubrics are shown in the following tables-

Rubrics for Seven Semester Project

Department of Civil Engineering

Assam Engineering College

Name of student								
Roll no.								
Description: Seventh Semester Project Report								
A4 size pages 100-150, Times New Roman font 12, single-spaced and with 20mm margins.								
Description	Excellent	Fair	Needs Improvement	Score				
Component								
Research & Design								
Problem Statement & Project objectives	<ul style="list-style-type: none"> • Problem Statement is clear and objectives are contextualised • All major and minor objectives are identified. (10) 	<ul style="list-style-type: none"> • Problem Statement is clear but objectives are not adequately contextualised • All major objectives are identified but few minor ones are missing. (7) 	<ul style="list-style-type: none"> • Problem Statement is not clear and objectives are not adequately contextualised • Many major objectives are missing. (3) 					
Literature Review - Identifies relevant & valid information in literature to support the work	<ul style="list-style-type: none"> • All relevant information is obtained • information sources are referred and valid. (10) 	<ul style="list-style-type: none"> • Sufficient information is obtained • Most of the sources are valid. (7) 	<ul style="list-style-type: none"> • Insufficient information is obtained and/or • Sources lack validity. (3) 					
Generation of Solution and analysis	<ul style="list-style-type: none"> • Two or more alternatives are 	<ul style="list-style-type: none"> • At least two alternatives are 	<ul style="list-style-type: none"> • Only one way of solution is 					

of alternatives	<p>considered.</p> <ul style="list-style-type: none"> Each alternative is appropriately and correctly analyzed for technical feasibility. (20) 	<p>considered.</p> <ul style="list-style-type: none"> Appropriate analyses are selected but analyses include some minor procedural errors. (14) 	<p>considered.</p> <ul style="list-style-type: none"> Inappropriate analyses are selected and/or major procedural and conceptual errors are made.(6) 	
Identifies relevant constraints - limitations (economic, environmental/ safety sustainability, etc)	<ul style="list-style-type: none"> All relevant constraints/ limitations are identified and accurately analyzed. (20) 	<ul style="list-style-type: none"> Most constraints / limitations are identified; some are not adequately addressed or accurately analyzed.(14) 	<ul style="list-style-type: none"> Few or no constraints/ limitations are identified or some constraints are identified but not accurately analyzed. (6) 	
Generates valid & appropriate conclusions/decisions	<ul style="list-style-type: none"> Recommended solution is based on stated criteria, objectives analysis and constraints. (20) 	<ul style="list-style-type: none"> Recommended Solution/decision is reasonable; further analysis of some of the alternatives are necessary.(14) 	<ul style="list-style-type: none"> Only one solution is considered or other solutions were ignored or incompletely analyzed. <p>Many constraints and criteria were ignored. (6)</p>	
Component				
Communication				
Written Communication	<ul style="list-style-type: none"> Report is well organized and clearly written. Diagrams or analyses enhance and clarify presentation of ideas. Sentences are grammatical and free from spelling errors. (20) 	<ul style="list-style-type: none"> Report is organized and clearly written for the most part. In some areas the logic or flow of ideas is difficult to follow. Diagrams are consistent with the text. Sentences are mostly grammatical and only a few spelling errors are present but they do not hinder the reader.(14) 	<ul style="list-style-type: none"> Report lacks an overall organization. Reader has to make considerable effort to understand the underlying logic and flow of the work. Diagrams are absent or inconsistent with the text. Grammatical and spelling errors make it difficult for the reader to 	

			interpret the text in places. (6)	
Visual Presentation	<ul style="list-style-type: none"> Slides are error-free and logically present the main components of the analysis/process and recommendations. Material is readable and the graphics highlight and support the main ideas. (10) 	<ul style="list-style-type: none"> Slides are error-free and logically present the main components of the process and recommendations. Material is mostly readable and graphics reiterate the main ideas. (7) 	<ul style="list-style-type: none"> Slides contain errors and lack a logical progression. Major aspects of the analysis are absent. Diagrams or graphics are absent or confusing. (3) 	
Oral Presentation	<ul style="list-style-type: none"> Speakers are audible and fluent on their topic, and do not rely on notes to present or respond. Speakers respond accurately and appropriately. (10) 	<ul style="list-style-type: none"> Speakers are mostly audible and fluent on their topic and require minimal referral to notes. Speakers respond to most questions accurately and appropriately. (7) 	<ul style="list-style-type: none"> Speakers are often inaudible or hesitant. Speakers rely mainly on notes. Speakers have difficulty responding clearly and accurately to questions. (3) 	
Body Language	<ul style="list-style-type: none"> Body language, as indicated by appropriate and meaningful gestures (e.g., drawing hands inward to convey contraction, moving arms up to convey lift, etc.) eye contact with audience, and movement, demonstrates a high level of comfort and connection with the audience. (10) 	<ul style="list-style-type: none"> Body language, as indicated by a slight tendency to repetitive and distracting gestures (e.g., tapping a pen, wringing hands, waving arms, clenching fists, etc.) and breaking eye contact with audience, demonstrates a slight discomfort with the audience. (7) 	<ul style="list-style-type: none"> Body language, as indicated by frequent, repetitive and distracting gestures, little or no audience eye-contact, and / or stiff posture and movement, indicate a high degree of discomfort interacting with audience. (3) 	
Component				
Team Work				

(Based on peer evaluation, observations of group meetings and presentation)				
Delegation and of Responsibilities	<ul style="list-style-type: none"> Responsibilities delegated fairly. Each member contributes in a valuable way to the project. All members always attended meetings and met deadlines for deliverables. (10) 	<ul style="list-style-type: none"> Some minor inequities in the delegation of responsibilities. Some members contribute more heavily than others but all members meet their responsibilities. Members regularly attended meetings with only a few absences, and deadlines for deliverables were met.(7) 	<ul style="list-style-type: none"> Major inequities in delegation of responsibilities. Group has obvious freeloaders who fail to meet their responsibilities or members who dominate and prevent others from contributing. Members would often miss meetings, and/or deadlines were often missed. (3) 	
Team morale and cohesiveness	<ul style="list-style-type: none"> Team worked well together to achieve objectives. Members enjoyed interacting with each other and learned from each other. All data sources indicated a high level of mutual respect and collaboration. (10) 	<ul style="list-style-type: none"> Team worked well together most of the time, with only a few occurrences of communication breakdown or failure to collaborate when appropriate. Members were mostly respectful of each other. (7) 	<ul style="list-style-type: none"> Team did not collaborate or communicate well. Some members would work independently, without regard to objectives or priorities. A lack of respect and regard was frequently noted. (3) 	
Total Score				
Examiner Name				
Signature				
Date	dd/mm/year	____/____/____/		

Rubrics for Eight Semester Project

Department of Civil Engineering

Assam Engineering College

Name of student						
Roll no.						
Description: Eight Semester Project Report						
Design oriented Project with complete design cycle from concept to construction drawings						
A4 size pages 100-150, Times New Roman font 12, single-spaced and with 20mm margins.						
Description	Excellent	Fair	Needs Improvement - Score			
Component						
Design Cycle						
Design Problem Statement & Design objectives	<ul style="list-style-type: none"> Design Problem Statement is clear and objectives are contextualised All major and minor objectives of design are identified. (10) 	<ul style="list-style-type: none"> Design Problem Statement is clear but design objectives are not adequately contextualised All major objectives are identified but few minor ones are missing. (7) 	<ul style="list-style-type: none"> Design Problem Statement is not clear and design objectives are not adequately contextualised Many major objectives are missing. (3) 			
Literature Review - Identifies relevant & valid data to support the proposed design work	<ul style="list-style-type: none"> All relevant data is obtained information sources / codes/ standards are referred and valid. (10) 	<ul style="list-style-type: none"> Sufficient data is obtained Most of the sources / codes / standards are valid. (7) 	<ul style="list-style-type: none"> Insufficient data is obtained and/or Sources / codes / standards lack validity. (3) 			
Generation of appropriate Design Solution and analysis of alternatives for final design	<ul style="list-style-type: none"> Two or more alternatives are considered. Each alternative is appropriately and correctly analyzed for technical feasibility. (20) 	<ul style="list-style-type: none"> At least two alternatives are considered. Appropriate analyses are selected but analyses include some minor procedural errors. (14) 	<ul style="list-style-type: none"> Only one way of solution is considered. Inappropriate analyses are selected and/or major procedural and conceptual errors are made. (6) 			
Design validation process cycle completed	<ul style="list-style-type: none"> Design process and outcome is validated. Design cycles appropriately / fully completed up to design drawings. (20) 	<ul style="list-style-type: none"> Design process and outcome is validated. Design cycles partially appropriate and partially completed up to design drawings. (14) 	<ul style="list-style-type: none"> Design process and outcome is not adequately validated. Design cycles inappropriately completed no or very little design drawings. (6) 			

Identifies relevant constraints - limitations (economic, environmental/ safety sustainability, etc) in the design	<ul style="list-style-type: none"> • All relevant constraints / limitations are identified and accurately analyzed. (20) 	<ul style="list-style-type: none"> • Most constraints / limitations are identified; • some are not adequately addressed or accurately analyzed.(14) 	<ul style="list-style-type: none"> • Few or no constraints/ limitations are identified or • some constraints are identified but not accurately analyzed. (6) 	
Generates valid & appropriate conclusions/summary	<ul style="list-style-type: none"> • Recommended design solution is based on stated criteria, objectives analysis and constraints. (20) 	<ul style="list-style-type: none"> • Recommended design Solution/decision is reasonable; • further analysis of some of the alternatives are necessary.(14) 	<ul style="list-style-type: none"> • Only one design solution is considered or other solutions were ignored or incompletely analyzed. Many constraints and criteria were ignored. (6) 	
Component				
Communication				
Design Report	<ul style="list-style-type: none"> • Report is well organized and clearly written. • References to codes and standards is complete • Diagrams or analyses enhance and clarify presentation of ideas. • Sentences are grammatical and free from spelling errors. (20) 	<ul style="list-style-type: none"> • Report is organized and clearly written for the most part. • References to codes and standards is mostly complete • In some areas the logic or flow of ideas is difficult to follow. Diagrams are consistent with the text. • Sentences are mostly grammatical and only a few spelling errors are present but they do not hinder the reader.(14) 	<ul style="list-style-type: none"> • Report lacks an overall organization. • References to codes and standards is incomplete or missing • Reader has to make considerable effort to understand the underlying logic and flow of the work. • Diagrams are absent or inconsistent with the text. • Grammatical and spelling errors make it difficult for the reader to interpret the text in places. (6) 	
Oral Viva	<ul style="list-style-type: none"> • Effective interaction, 	<ul style="list-style-type: none"> • mostly effective interactions , mostly 	<ul style="list-style-type: none"> • Interaction not effective, often 	

	<p>audible and fluent on their topic, and do not rely on notes to present or respond.</p> <ul style="list-style-type: none"> • respond accurately and appropriately to all questions . (10) 	<p>audible and fluent on their topic, and require minimal referral to notes.</p> <ul style="list-style-type: none"> • respond to most questions accurately and appropriately.(7) 	<p>inaudible or hesitant.</p> <ul style="list-style-type: none"> • rely mainly on notes. • have difficulty responding clearly and accurately to questions. (3) 	
Component				
Team Work (Based on peer evaluation, observations of group meetings and presentation)				
Delegation and fulfilment of Responsibilities	<ul style="list-style-type: none"> • Responsibilities delegated fairly. • Each member contributes in a valuable way to the project. • All members always attended meetings and met deadlines for deliverables. (10) 	<ul style="list-style-type: none"> • Some minor inequities in the delegation of responsibilities. • Some members contribute more heavily than others but all members meet their responsibilities. • Members regularly attended meetings with only a few absences, and deadlines for deliverables were met.(7) 	<ul style="list-style-type: none"> • Major inequities in delegation of responsibilities. • Group has obvious freeloaders who fail to meet their responsibilities or members who dominate and prevent others from contributing. • Members would often miss meetings, and/or deadlines were often missed. (3) 	
Team morale and cohesiveness	<ul style="list-style-type: none"> • Team worked well together to achieve objectives. • Members enjoyed interacting with each other and learned from each other. • All data sources indicated a high level of mutual respect and collaboration. 10) 	<ul style="list-style-type: none"> • Team worked well together most of the time, with only a few occurrences of communication breakdown or failure to collaborate when appropriate. • Members were mostly respectful of each other. (7) 	<ul style="list-style-type: none"> • Team did not collaborate or communicate well. • Some members would work independently, without regard to objectives or priorities. • A lack of respect and regard was frequently noted. (3) 	

Total Score				
Examiner Name				
Signature				
Date	dd/mm/year	—/—/—/		

Best 3 projects are shown on the basis of final marks obtained and are mentioned below-

Best-3 projects (2016-2017): Seventh Semester

Sl. No	Name of students	Topic/Title of the project	Guided by	Relevance to POs and PSOs
1	Rupanjan Chakraborty; Shaikhul Islam Prodhani; Vikram Singh; Mujahidul Islam Barbhuiya; Shofikul Islam	Rapid Visual Screening of RC-Framed Buildings	Dr. Jayanta Pathak	PO1/2/3/4/6/7/8/9/10/11/12 PSO1/2/3
2	Abu Waydah Rahman; Mohsin Ahmed; Amarendra Deka; Paran Bora; Biswajit Das	Design of an Aqueduct and a Syphon aqueduct of Noanadi irrigation scheme, mangaldoi, Assam	Dr. Utpal Kumar Misra	PO1/2/3/4/6/7/8/9/10/11/12 PSO1/2/3
3	Rajdeep Paul; Kritika Langthasa; Yekhyopya Chowlik; Ajay Rana; Salma Aktar Barbhuiya	Soil investigation for 43 locations in Guwahati city	Dr. Binu Sharma	PO1/2/3/4/6/7/8/9/10/11/12 PSO1/2/3

Best-3 projects (2016-2017): Eighth Semester

Sl. No	Name of students	Topic/Title of the project	Guided by	Relevance to POs and PSOs
1	Bikram Jit Deb; Dhrubajyoti Kaundinya; Deepjyoti Das; Kuntal das; Raja Sarkar; Ajay Rana	Widening of road stretch from Jalukbari interception to Assam Engineering College gate	Mr. Bhaskar Jyoti Das	PO1/2/3/4/6/7/8/9/10/11/12 PSO1/2/3
2	Jaydeep Goswami; Arpan Jaan Uzir; Shakeel Ahmed; Chanaur Rahman; Shyam Sundar Gupta; Parswajit Boruah	Design of (G+5) RCC residential building	Dr. Utpal Kumar Nath	PO1/2/3/4/6/7/9/10/12 PSO1/2/3
3	Kapil Katuwal; Mridupawan Deka; Rajdeep Paul;	Design of (G+3) RCC residential building	Dr. Utpal Kumar Nath	PO1/2/3/4/6/7/9/10/12 PSO1/2/3

Sl. No	Name of students	Topic/Title of the project	Guided by	Relevance to POs and PSOs
	Kritika Langthasa; Manoj Kr. Sarma; Sahin Sultana Mazumdar			

Best-3 projects (2015-2016): Seventh Semester

Sl. No	Name of students	Topic/Title of the project	Guided by	Relevance to POs and PSOs
1	Sarbajit Bhattacharyya; Ratul Ghosh; Smitom Swapna Borah; Pinak Paul; Mrinal Roy	A study of suitability of glass powder as partial replacement of cement in concrete and viability of sugar as an admixture	Dr. Utpal Kumar Nath	PO1/2/3/4/6/7/ 9/10/11/12 PSO1/2/3
2	Ankita Goswami; Pratik Sengupta; Saurabh Kujmar Sarma; Mriganabh Choudhury; Rakesh Kalita; Ranima Mazumdar	Android application development in civil engineering	Dr. Jayanta Pathak; Mrs. Puspanjali Sonowal; Mrs. Rupjyoti Bordoloi	PO1/2/3/4/5/6/ 9/10/11/12 PSO2/3
3	Arindam Kumar Ghosh; Biki Barman; Kewal Agarwalla; Sumitra Bora; Bikash Mondal	Assessment of liquefaction potential of Guwahati city	Dr. Binu Sharma	PO1/2/3/4/6/7/ 9/10/11/12 PSO1/2/3

Best-3 projects (2015-2016): Eighth Semester

Sl. No	Name of students	Topic/Title of the project	Guided by	Relevance to POs and PSOs
1	Debarshi Saikia; Chitraban Hazarika; Shubhabrata Saha; Anupam Borthakur; Maharshi Kalita; Debanjan Chakrabarty	Analysis and design of a (G+4) RCC residential building	Dr. Diganta Goswami	PO1/2/3/4/6/7/ 9/10/12 PSO1/2/3
2	Sarbajit Bhattacharyya; Ratul Ghosh; Smitom Swapna Borah; Pinak Paul; Mrinal Roy; Rohit Mili	Limit state design of intze type water tank by developing MS Excel spreadsheet and comparison with STAAD Pro. V8i	Dr. Utpal Kumar Nath	PO1/2/3/4/5/6/ 9/10/11/12 PSO2/3
3	Thaigai Lung Darengmei; Deep Paul; Aniruddha Roy; Dibyajyoti Borah;	Analysis and design of a double span RCC pile bridge	Mr. Abinash Mahanta	PO1/2/3/4/6/7/ 9/10/12 PSO1/2/3

Sl. No	Name of students	Topic/Title of the project	Guided by	Relevance to POs and PSOs
	Bijan Dutta; Rohit Gogoi; Akif Sarkar			

Best-3 projects (2014-2015): Seventh Semester

Sl. No	Name of students	Topic/Title of the project	Guided by	Relevance to POs and PSOs
1	Jyoti Taparia; Dikshita Dutta; Minakshi Das; Kritartha Neog; Shinjini Paul Choudhury	Correlation among Compressive Strength, Tensile Strength & Rebound Hammer Test (NDT) for Concrete	Dr. Utpal Kumar Nath	PO1/2/4/7/ 9/10/12 PSO1/2
2	Preetish Kakoty; Rahuljit Kalita; Pratim Parash Kalita; Bibek Bikash Gogoi; Mriganka Sekhar Bora	Preparation of design aids for reinforced concrete foundations	Dr. Palash Jyoti Hazarika	PO1/2/3/4/5/6/7/ 9/10/12 PSO1/2/3
3	Archita Gogoi; Kasturi Pathak; Sushmita Borah; Aparajita Das; Gitumoni Gogoi	Variation of consistency limits with percentage of fines in soil	Mr. Bhaskar Jyoti Das	PO1/2/3/4/7/ 9/10/12 PSO1/2/3

Best-3 projects (2014-2015): Eighth Semester

Sl. No	Name of students	Topic/Title of the project	Guided by	Relevance to POs and PSOs
1	Jyoti Taparia; Dikshita Dutta; Minakshi Das; Kritartha Neog; Shinjini Paul Choudhury; Archita Gogoi; Kasturi Pathak	Design of three storied RCC residential building	Dr. Utpal Kumar Nath	PO1/2/3/4/6/ 7/9/10/12 PSO1/2/3
2	Rupam Krishna Borbora; Pranjal Baishya; Litul Swargari; Koustabh Bora; Kunal Brahma; Binod Nath; Amlan Hazarika	Preparation of DPR of road from Hostel-3 to AEC union building	Mr. Bhaskar Jyoti Das & Sasanka Borah	PO1/2/3/4/6/7/ 8/9/10/11/12 PSO1/2/3
3	Suraj Yadav;	Computer aided design of	Dr. Jayanta	PO1/2/3/4/5/6/7/

Sl. No	Name of students	Topic/Title of the project	Guided by	Relevance to POs and PSOs
	Sanjeeb Das; Bhusan Deuri; Rishiraj Basumatary; Pankaj Basumatary; Barun Kanoo; Jyotishman Borkakoty	RCC T-beam and deck slab bridge of 20 metre span	Pathak	9/10/12 PSO1/2/3

Impact analysis:

A good amount of impacts are observed among the students, after completion of the two projects:

- Knowledge on various aspects of the project (execution, implementation and management) is developed.
- New innovative and creative ideas are developed.
- Knowledge on technical report writing, journal papers, conference papers is improved.
- Communication as well as presentation skills of the students are improved.
- Confidence levels of the students are increased.
- Cooperation among students is increased, which improved teamwork spirit.
- Practical problem-oriented projects enhanced the knowledge on societal value of a project.
- More enthusiasm is observed among the students to exhibit their knowledge in various platforms like conferences, exhibitions, competitions etc.

A. Identification of projects and allocation methodology to Faculty Members (3)

- Projects are identified to pertinent context. The importance of the projects are verified in line with the POs and PSOs.
- Faculties, whose domain of work matches with the student's project are allocated as guides/supervisors to guide the student's project.
- The problem definition with their necessities and limitations are verified.
- The understanding and awareness, skills and interest of the students to instigate the project are considered before allocating the projects.
- Each project team varies from five to seven students.

B. Types and relevance of the projects and their contribution towards attainment of POs (5)

- The projects are selected based on the POs and PSOs of the department and are mapped accordingly.
- For seventh semester project, students are provided with new ideas related to various fields of civil engineering, by the respective faculties (referring journals, future scopes of previous projects, challenging needs in the domain of civil engineering), among which students can select the one project of their interest.
- For eighth semester project, students are expected to carry out a full-fledged analysis and design of a multistoried building with all required components of a buildings (gravity analysis, design moments and shear forces for beam, design moments and axial loads for column and footing, design of beam, slab, column, footing, staircase, chajja, lintel, lifts, ductile detailing, seismic analysis etc.). Special emphasis is given on seismic analysis and design, in line with **PSO1**, since north-east India is situated in the highest seismically prone region.

Furthermore, students are encouraged to consider new and advanced components in a building along with the use of advanced tools (softwares like STAAD-Pro, SAP etc.) for improving their designing ability.

- Each project is evaluated according to the rubric and their input towards achievement of POs and PSOs.

C. Process for monitoring and evaluation (5)

- Meetings among the respective faculties and students of the project are held at regular intervals, mostly once in a week.
- The project guide will review and evaluate the progress of their work.
- The difficulties and doubts are discussed time to time and solved with utmost importance.
- Each student in the project team is monitored regularly by the respective faculty based on his/her performance, delivery of the particulars of progress of the work, explanation of the concept of their project work.

D. Process to assess individual and team performance (5)

- Evaluation is done in two stages: Implementation stage, and Final performance stage.
- Assessment of individual and team performance is based on progress work they deliver in front of their guide on regular intervals, during the implementation stage.
- Each student in the project team is assessed regularly by the respective faculty based on his/her performance, delivery of the particulars of progress of the work, explanation of the concept of their project work.
- At the final performance stage, assessment is done following the rubric based on project seminar presentation, project report and the viva voice.

E. Quality of completed projects/working prototype (5)

- A committee is formed for all the project groups, which is responsible for complete evaluation of the project.
- The committee is divided into two panels. These two panels will do the evaluation and assessment of all the project groups.
- Final project demo for the working prototype (if any) is evaluated by the committee.

F. Evidences of papers published/Awards received by projects etc. (2)

Journal publications:

Goswami, D.; Goswami, A.; Sengupta, P.; "Anchored steel sheetpile wall vs Cross-Lot bracing for deep excavation-A case study for a multi-storeyed building in Guwahati-Assam.", International Journal of Computer and Mathematical Sciences, Vol. V, Issue 2, January 2016, pp 50 (ISSN: 2347-85)

Conference papers and awards received:

(a) Roy, M.; Bhattacharya, S.; Paul, P.; Ghosh, R.; Borah, S. S. and Nath, U. K.; "Waste Glass Powder as a Partial Replacement of Cement in Concrete-an Attempt to Bring a Paradigm Shift in Concrete Technology Through Recycling.", International Conference on Waste Management (ICWM-ASWM-02), Indian Institute of Technology Guwahati, 1st-2nd April 2016, Guwahati, India.

(b) Gorai, G. and Kumar, M.; "Comparison between the Effect of Silica Fume

and Fly Ash in High Strength Concrete using Concrete Mix Design.” International Conference on Waste Management (ICWM-ASWM-02), Indian Institute of Technology Guwahati, 1st-2nd April 2016, Guwahati, India.

- (c) Barman, R.; Chakraborty, R. and Bhattacharya, S.; “Recycled Waste Polyethylene for Ground Improvement- Saving the Ecosystem and Enriching the Built Environment.” International Conference on Waste Management (ICWM-ASWM-02), Indian Institute of Technology Guwahati, 1st-2nd April 2016, Guwahati, India.

Initiatives related to industry interaction (15)

Department of Civil Engineering, AEC also works closely with industry in terms of consultancy and all the faculties are acquainted with the practical problems of the industry and help to restructure the syllabus. Lectures are delivered to spread knowledge on recent trends by industry experts during association meeting. Examiners are also sometimes invited from industries. Every year, the 6th semester students are sent for industrial visits to nearby civil engineering projects. They interact with the industry experts and get highly benefitted in terms of practical knowledge. Moreover, summer training is compulsory for the 6th semester passed out students and 4th semester students are also encouraged to go for summer training although it is not mandatory.

Initiatives related to industry internship/summer training (15)

Initiatives and Implementation details:

Summer internship of minimum four weeks is mandatory at the end of 6th semester. All the sixth semester students start applying at different companies, government organizations and different institutes for internship from the beginning of the semester with the help and support of the faculty members and the Training & Placement cell of the college jointly. Generally, a group of 6-7 students are formed. Respecting their ambitions, the students are given free hand to decide whether they want to pursue the internship in an

institute or in an industry. The department also helps the students by interacting with the industrial experts, provide the students recommendation letters and other necessary supports. The internship coordinator constantly interacts with alumni those who are working in the industries and request them to provide necessary guidelines and supports for their juniors' internship. Some of the organizations where the students go for internship are mentioned below-



Indian Institute of Technology, Guwahati



National Highway Authority of India



Public Works Department, Assam



Indian Oil Corporation Ltd.



Oil India Limited



Guwahati Metropolitan Development Authority



National Hydro-electric Power Corporation



National Thermal Power Corporation



Power Grid



North Eastern Electric Power Corporation Ltd.



Northeast Frontier Railway



Oil and Natural Gas Corporation



Central Public Works Department



Irrigation Department, Assam



Brahmaputra Board



Shah Technical
Consultants Pvt. Ltd.



Egis International



Louis Berger

The Louis Berger Group



Punj Lloyd

Punj Lloyd Ltd.



Mott Mac Donald Pvt. Ltd.



GAMMON

Gammon India Ltd.

Impact Analysis:

Every year an evaluation committee is formed by the HoD which includes 4-5 faculty members of the department to review the quality of the internships undergone by the students. A senior professor is selected in as charge of the committee. After completion of their internships, the internship reports will be submitted by students to the committee. The reports consist of the practical knowledge they acquired and the amount of work done. The students are evaluated as per the rubric. During presentation, the students are questioned to examine their depth of knowledge related to their training works. The work details submitted by the students in their report are strictly scrutinized by the committee members and justified marks are awarded accordingly. A rubric has been prepared to evaluate their summer training reports and the same is shown here-

Description: Industrial training report

50-70 A4 pages

Times New Roman font 12,

Single-spaced and with 20mm margins

Description	Excellent	Fair	Needs Improvement	Score
Lay-out & Organization	Informative summary; Table of contents in logical sequence; Page numbering; Suitable sub-titles. (10)	Inadequate summary; Table of contents not in sequence; Page numbering; acceptable sub-titles. (7)	No summary; No Table of contents; No page numbering; unsuitable sub-titles. (3)	

Presentation	Main ideas are clearly presented; Ideas are presented in an interesting manner; Ideas are supported by information and logic; Appropriate conclusions are based upon evidence presented; Does not exceed 50 pages. (20)	Main ideas are presented to some extent; Ideas are not presented in an order that adds clarity; Some ideas are supported by information and logic; Conclusions do not follow from ideas presented; Exceed 50 pages. (15)	No main idea presented; Ideas are presented in an order that distracts from clear communication; Ideas are not supported by information and are illogical; Inappropriate conclusions are presented. (5)	
Description of Processes	Complete explanation from raw material to product handling. (20)	Some explanation on processes but not complete OR complete explanation but not concise. (15)	Very little description. (5)	
Personal Experience	Observation relates to theories; Offer suggestions. (20)	Some observation. (15)	Very little observation. (5)	
Graphics	Effective use of pictures, models, diagrams, charts, tables and graphs. (10)	Some appropriate use of pictures, models, diagrams, charts, tables and graphs. (7)	No use of pictures, models, diagrams, charts, tables and graphs. (3)	
Conventions	Generally error free in regards to sentence structure, punctuation, capitalization, spelling and standard usage. (10)	Sentence structure, punctuation, capitalization, spelling and standard usage errors are noticeable, but do not seriously impair readability. (7)	Errors in sentence structure, punctuation, capitalization, spelling and standard usage impair readability. (3)	
Information Sources	Multiple sources; Wide range of resource types; Reliable sources; Current sources. (10)	Two or more sources; Two types of resources; Some reliable sources; Some current sources. (7)	One source (often personal knowledge or text only); narrow range of resources; Unreliable sources; Out of date sources. (3)	
Total Score				

Criterion 3	Course Outcomes and Program Outcomes	120
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3. COURSE OUTCOMES AND PROGRAM OUTCOMES (120)

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

Engineering 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
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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)

If 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 Mechanics and Strength of Materials	3.00	2.13	1.75	1.60	0.90	-	-	-	-	-	-	0.50
2.4 P	ME203L/CE205L	Engineering Mechanics 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 Structures-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_EII_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 Mechanics I	3.00	2.00	2.00	2.50	1.80	-	-	-	-	-	-	1.00
2.4 P	ME224L	Engineering Mechanics 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)

If 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
2.2 P	CY202L	Engg. Chemistry-II Lab	60
2.3 TS	MA203	Mathematics-II	50
2.4 TS	ME224	Engineering Mechanics I	50
2.4 P	ME224L	Engineering Mechanics 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	CE814 B	Design of Substructures	93.9	93.6	94.7	NA	50
8.5_EIV_1 TS	CE815 A	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

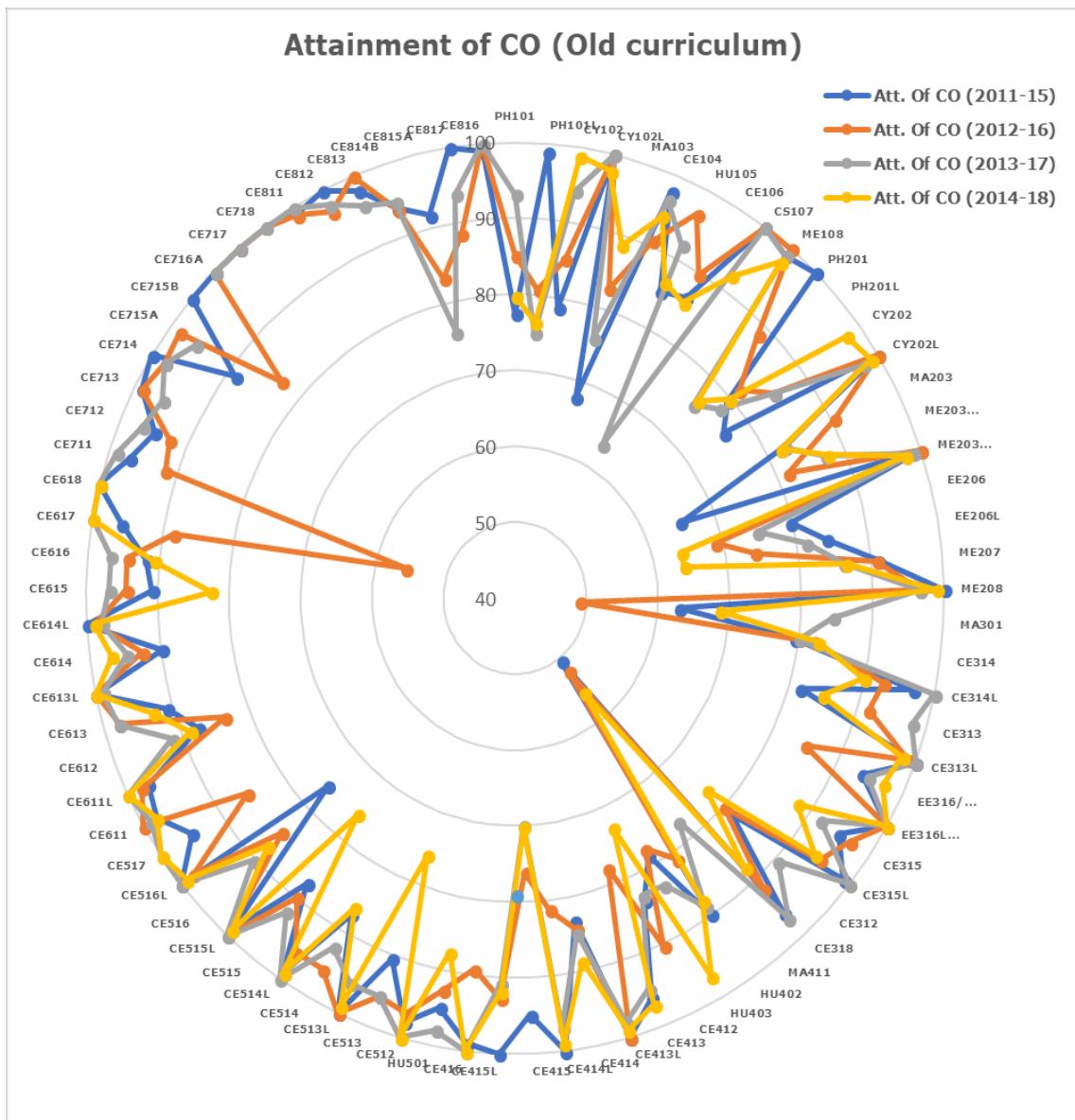


Fig. 3.2.2-a

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 Mechanics I	84.8	83.5	50
2.4 P	ME224L	Engineering Mechanics 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

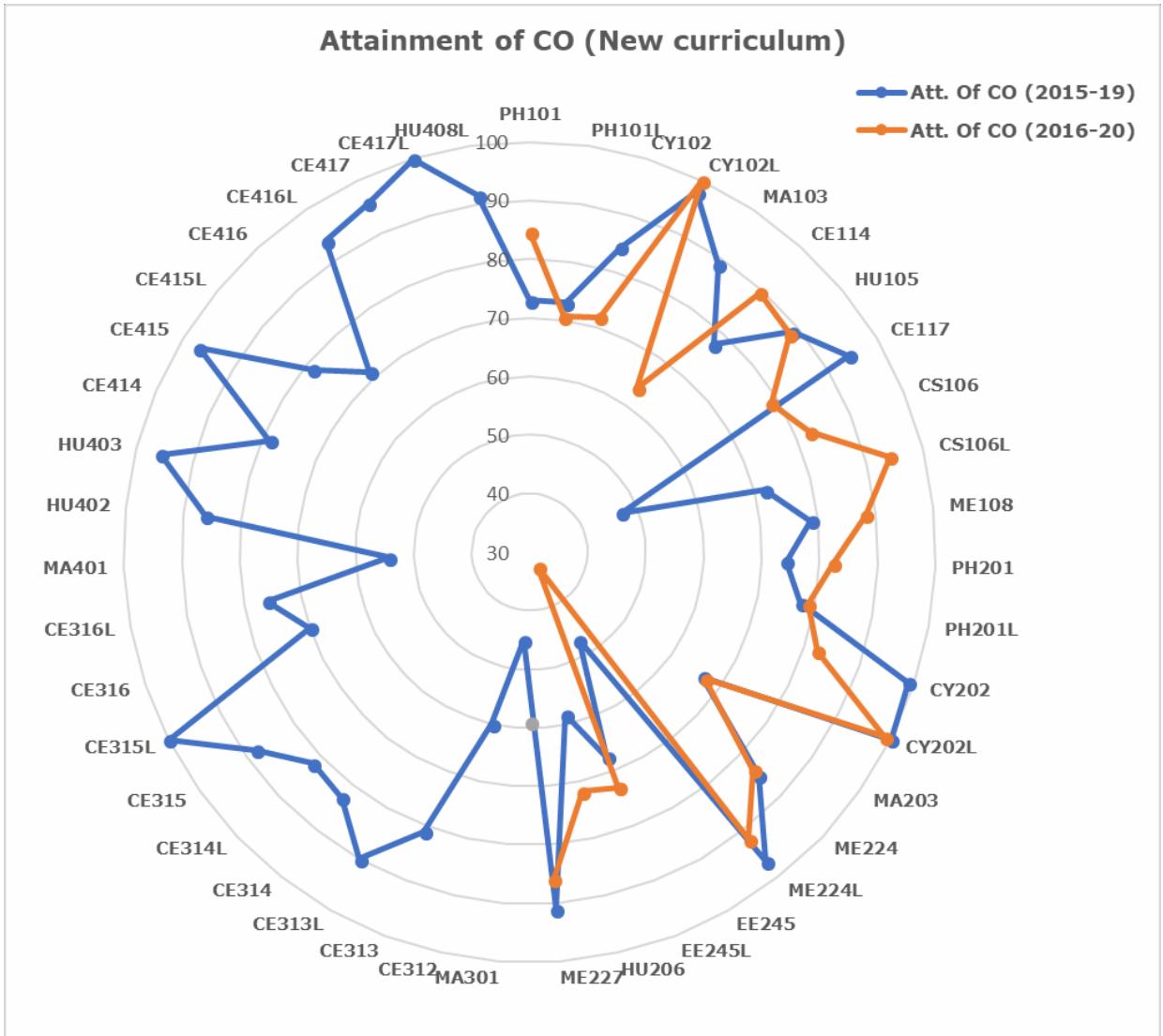


Fig. 3.2.2-b

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 computed 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 Mechanics and Strength of Materials	2.62	1.85	1.53	1.40	0.78	-	-	-	-	-	-	0.44
2.4 P	ME203L/ CE205L	Engineering Mechanics 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 Mechanics and Strength of Materials	0.96	0.78	-
2.4 P	ME203L/CE205L	Engineering Mechanics 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 Structures-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
			Indirect Outcome	2.50	2.50
			Overall Outcome	1.69	1.92
					1.37

Table B.3.3.2-b

Criterion 4	Students' Performance	150
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4. STUDENTS' PERFORMANCE (150)

Item (Information to be provided cumulatively for all the shifts with explicit headings, wherever applicable)	CAY (2017-18)	CAYm1 (2016-17)	CAYm2 (2015-16)
Sanctioned intake of the program (N)	90	90	90
Total number of students admitted in first year <i>minus</i> number of students migrated to other programs/institutions plus no. of students migrated to this program (N1)	89	89-28+24 =85	90-39+40 =91
Number of students admitted in 2nd year in the same batch via lateral entry (N2)	0	12	9
Separate division students, if applicable (N3)	0	0	0
Total number of students admitted in the Program (N1 + N2 + N3)	89	97	100

Year of entry	N1 + N2 + N3 (As defined above)	Number of students who have successfully graduated without backlogs in any semester/year of study (Without Backlog means no compartment or failures in any semester/year of study)			
		I Year	II Year	III Year	IV Year
CAY (2017-18)	89+0+0=89				
CAYm1 (2016-17)	85+12+0=97	20			
CAYm2 (2015-16)	91+9+0=100	11	14		
CAYm3 (2014-15)	(89-23+23) +9+0=98	45	34	33	
CAYm4 (LYG) (2013-14)	(89-11+12) +9+0=99	49	39	36	36
CAYm5 (LYGm1) (2012-13)	(89-13+12) +9+0=97	48	35	31	31
CAYm6 (LYGm2) (2011-12)	(88-11+14) +9+0=100	48	43	39	39

Table B.4b

Year of entry	N1 + N2 + N3 (As defined above)	Number of students who have successfully graduated (Students with backlog in stipulated period of study)			
		I Year	II Year	III Year	IV Year
CAY (2017-18)	89+0+0=89				
CAYm1 (2016-17)	85+12+0=97	77			
CAYm2 (2015-16)	91+9+0=100	89	86		
CAYm3 (2014-15)	(89-23+24) +8+0=98	53	64	65	
CAYm4 (LYG) (2013-14)	(89-11+12) +9+0=99	50	60	63	46
CAYm5 (LYGm1) (2012-13)	(89-13+12) +9+0=97	49	62	66	41
CAYm6 (LYGm2) (2011-12)	(88-11+14) +9+0=100	52	57	61	38

Table B.4c

Enrolment Ratio (20) N1

(2017-18) = 89 N1 (2016-

17) = 85 N1 (2015-16) =

91

Average N1 during the last three years (2015-16 to 2017-18) = $(89+85+91)/3 = 88.33$

Average N during the last three years (2015-16 to 2017-18) = 90

Enrolment Ratio= N1/N = $(88.33/90) \times 100 = 98.14 \%$

Item (Students enrolled at the First Year Level on average basis during the last three years starting from current academic years)	Marks
>=90% students enrolled	20
>=80% students enrolled	18
>=70% students enrolled	16
>=60% students enrolled	14
>=50% students enrolled	12
Otherwise	0

Table B.4.1

Success Rate in the stipulated period of the program (40)

Success rate without backlogs in any semester/year of study (25)

Item	Latest Year of Graduation, LYG (CAYm4) YG: 2017	Latest Year of Graduation minus 1, LYGm1 (CAYm5) YG:2016	Latest Year of Graduation minus 2, LYGm2 (CAYm6) YG:2015
Number of students admitted in the corresponding First Year + admitted in 2nd year via lateral entry and separate division, if applicable	$(89-11+12) +9+0$ $=99$	$(89-13+12) +9+0$ $=97$	$(88-11+14) +9+0$ $=100$
Number of students who have graduated without backlogs in the stipulated period	36	31	39
Success Index (SI)	0.3636	0.320	0.39
Average SI		0.358	

Table B.4.2.1

Success rate with backlog in stipulated period of study (15)

Item	Latest Year of Graduation , LYG (CAYm4) YG: 2017	Latest Year of Graduation minus 1, LYGm1 (CAYm5) YG:2016	Latest Year of Graduation minus 2, LYGm2 (CAYm6) YG:2015
Number of students admitted in the corresponding First Year + admitted in 2nd year via lateral entry and separate division, if applicable	$(89-11+12) +9+0$ $=99$	$(89-13+12) +9+0$ $=97$	$(88-11+14) +9+0$ $=100$
Number of students who have graduated with backlog in the stipulated period	46	41	38
Success Index (SI)	0.465	0.423	0.38
Average Success Index		0.423	

Table B.4.2.2

Academic Performance in Third Year (15)

$$\begin{aligned}
 \text{Academic Performance} &= 1.5 * \text{Average API (Academic Performance Index)} \\
 &= 1.5 \times 6.812 \\
 &= \mathbf{10.22}
 \end{aligned}$$

Academic Performance	CAYm1 (2016-17) YG: 2018	CAYm2 (2015-16) YG:2017	CAYm3 (2014-15) YG:2016
Mean of CGPA or Mean Percentage of all successful students (X)	67.19	70.97	66.19
Total no. of successful students (Y)	98	97	97
Total no. of students appeared in the examination (Z)	98	97	97
API = $x^* (Y/Z)$	67.19	70.97	66.19
Average API = $(AP1 + AP2 + AP3)/3$	$(67.19+70.97+66.19)/3=68.12$		

Table B.4.3

Academic Performance in Second Year (15)

$$\begin{aligned}
 \text{Academic Performance Level} &= 1.5 * \text{Average API (Academic Performance Index)} \\
 &= 1.5 * 6.126 \\
 &= \mathbf{9.19}
 \end{aligned}$$

Academic Performance	CAYm1 (2016-17) YG: 2019	CAYm2 (2015-16) YG: 2018	CAYm3 (2014-15) YG: 2017
Mean of CGPA or Mean Percentage of all successful students	58.71	61.86	60.54
Total no. of successful students (Y)	100	98	97
Total no. of students appeared in the examination (Z)	100	100	97
API = $X^* (Y/Z)$	61.38	61.86	60.54
Average API = $(AP1 + AP2 + AP3)/3$	$(58.71+61.86+60.54)/3=61.26$		

Table B.4.4

Placement, Higher Studies and Entrepreneurship (40)

Assessment Points = $40 \times$ average placement

$$= 40 \times 0.69$$

$$= 27.6$$

Item	CAYm1 (2013-17) YG: 2017	CAYm2 (2012-16) YG: 2016	CAYm3 (2011-15) YG: 2015
Total No. of Final Year Students (N)	99	97	100
No. of students placed in companies or Government Sector (x)	17	43	43
No. of students admitted to higher studies with valid qualifying scores (GATE or equivalent State or National Level Tests, GRE, GMAT etc.) (y)	38	27	31
No. of students turned entrepreneur in engineering/technology (z)	1	3	1
$x + y + z =$	56	73	75
Placement Index: $(x + y + z)/N$	0.57	0.75	0.75
Average placement= $(P1 + P2 + P3)/3$	$2.07/3 = 0.69$		

Table B.4.5

Professional Activities (20)

Professional societies/chapters and organizing engineering events (5)

CESDOC

The First International Conference on "Civil Engineering for Sustainable Development -Opportunities and Challenges (CESDOC 2016)", organized by the Civil Engineering Department of Assam Engineering College (AEC), Jalukbari, was held with the participation of delegates from India and abroad from 19-21 December 2016. The guest speakers collectively recognized the leadership role of engineers in sustainable development and their responsibility to provide effective and innovative solutions in addressing the challenges of sustainability.

The conference provided a platform to technocrats to champion the effort towards building capacity for sustainable development and influence a policy framework that demands a more socially and environmentally responsible decision process for implementation of development projects.

The conference covered seven major themes and each major theme had sub-themes such as sustainable infrastructure development, sustainable urban development, sustainable rural development, sustainable development by disaster risk management, sustainable development of water system, sustainable development through energy management and sustainable development through a new paradigm of engineering education. Covering all these themes, about 80 research papers from India and abroad were being presented during the conference. More than 200 delegates participated from India, Japan, Australia and Thailand. The conference witnessed a confluence of internationally acclaimed keynote speakers from across the world. It is held biennially.

GIT-NE 2012

National Workshop on Ground Improvement Techniques with reference to North Eastern Region (GIT-NE 2012) was organized on 13th October, 2012 (Saturday) by department of civil engineering, Assam Engineering College and Indian Geotechnical Society (IGS)-Guwahati chapter (NE). IGS Guwahati Chapter is working closely with department of civil engineering, AEC and has been having key positions such as Chairman, Secretary, Treasurers etc. from the faculty members of the department.

Publication of technical magazines, newsletters, etc. (5)

Name of the Magazine/newsletter	Volume/Issue	Month and Year of Publishing	Editors	Deputy Editors	Publisher
Aadharshila	1	January 2013	Abhinav Bhattacharyya,	Kuldeep Kaushik, Ritukesh Bharali	Dept. of Civil Engineering, AEC
Aadharshila	2	January 2014	Kuldeep Kaushik, Ritukesh Bharali	--	Dept. of Civil Engineering, AEC
Aadharshila	3	January 2015	Preetish Kakoty, Rimjhim Kashayp,	Sanjeeb Das, Pratim Parash Kalita	Dept. of Civil Engineering, AEC
Aadharshila	4	January 2016	Kewal Agarwalla, Ankita Goswami,	Sarbajit Bhattacharyya, Pinak Paul	Dept. of Civil Engineering, AEC

Name of the Magazine/ newsletter	Volume/Issue	Month and Year of Publishing	Editors	Deputy Editors	Publisher
Aadharshila	5	January 2017	Rakesh Barman, Rupanjan Chakraborty,	Tania Choudhury, Arpan J Uzir, Akash Borah, Nikhil Siva Deka, Pallav Pratim Gayan, Indranuj Pathak	Deptt. of Civil Engineering, AEC
Aadharshila	6	January 2018	Diganta Nath, Priyam Deka, Bhaskar Narzary,	Biswajyoti Deka, Violina Deka, Prachurjya Bhuyan, Dharitri Deka	Deptt. of Civil Engineering, AEC

4.6.3 Participation in inter-institute events by students of the program of study (10)

Year- 2013

Sl no.	Name of students	Name of the paper/Award, if any	Conference/competition name/ workshop attended	Date	Organized by
1	Priyanka Kotoky, Mriganka Shekhar Saikia, Manisha Chetry (6 th sem)	2 nd prize	X-construction: a structure designing competition, Consensio-2013	24 th -27 th January, 2013	Royal Group of Institutions, Guwahati
2	Kuldeep Kaushik, Ritukesh Bharali (8 th sem)	Best paper	5 th National Civil Engineering Students Symposium	8 th March, 2013	IIT Bombay
3	Rupam Saikia, Bhargob Deka, Amit Ranjan Barman (8 th sem)	2 nd prize	Event Name, Megalith 2013	15 th -17 th March, 2013	IIT Kharagpur

Sl no.	Name of students	Name of the paper/Award, if any	Conference/competition name/ workshop attended	Date	Organized by
4	Kuldeep Kaushik, Ritukesh Bharali (8 th sem)	--	A symposium on 'Solid Waste Management'	6 th April, 2013	Dept. Of Civil Engineering and Prakriti Club, IIT Guwahati
5	Rahul Das, Partha Protim Goswami (8 th sem)	1 st prize	Model Bridge-building Competition, Techniche 2013	29 th Aug- 1 st Sept, 2013	IIT Guwahati
6	Priyanka Kotoky, Mriganka Shekhar Saikia, Manisha Chetry (6 th sem)	3 rd prize	Easel: a structure designing competition, Techniche 2013	29 th Aug- 1 st Sept, 2013	IIT Guwahati
7	Rahul Das, Partha Protim Goswami (8 th sem)	1 st prize			RIST and ISTE, Guwahati Chapter
8	Rahul Das, Partha Protim Goswami, Sanjeeb Das (8 th sem)	7 Prizes			Various Technical Fests in Guwahati
9	Supratim Kaushik, Partha Protim Goswami (8 th sem)	2 nd prize	North East Students Geo Congress	28 th Sept, 2013	Assam Engineering College
10	Priyanka Deka, Sandhya Rani Kalita (8 th sem)	3 rd prize	North East Students Geo Congress	28 th Sept, 2013	Assam Engineering College
11	Kuldeep Kaushik, Ritukesh Bharali (8 th sem); Preetish Kakoty, Mriganka	--	A workshop on 'Seismic design of Earth and Rock-filled Dams'	15 th -18 th October, 2013	IIT Gandhinagar

Sl no.	Name of students	Name of the paper/Award, if any	Conference/competition name/ workshop attended	Date	Organized by
	Sekhar Borah (6 th sem)				
12	Rupam Saikia (8 th sem)	Under review for International Journal of Innovative Research in Science, Engineering and Technology (IJIRSET)	National Conference on Recent Advances in Civil Engineering (NCRACE-2013)	15 th -16 th November, 2013	North Eastern Regional Institute of Science and Technology, Itanagar, Arunachal Pradesh
13	Rahul Das, Chinmoy Kalita (8 th sem)	A Study on The Influence of Particle Characteristics on Shear Strength Behavior of Quarry Dust	Indian Geotechnical Conference 2013	22 nd -24 th December, 2013	IIT Roorkee
14	Kuldeep Kaushik, Ritukesh Bharali (8 th sem)	A Study of CBR properties of soil reinforced with jute geotextile with reference to road construction in Assam	Indian Geotechnical Conference 2013	22 nd -24 th December, 2013	IIT Roorkee

Year 2014

Sl no.	Name of students	Name of the paper/ Award, if any	Conference/competition name/ workshop attended	date	Organised by
1	Debanjan Chakrabarty, Imdad Ahmed Laskar (6 th sem)	2 nd prize	Virtual Stock Market, Udgam-109	17 th -19 th January, 2014	IIT Guwahati
2	Tapan Deka, Priyanka	1 st prize	Srijan: a structural designing competition,	22 nd -24 th January	NITS Mirza

Sl no.	Name of students	Name of the paper/ Award, if any	Conference/competition name/ workshop attended	date	Organised by
	Kotoky, Ankur Jain, Mriganka Saikia (8 th sem)		Sastricas-2014		
3	Baharul Hussain, Chandan Handique, Nilin Bihari Das (8 th sem)	2 nd prize on Road Improvement Using Plastic Waste	Technovation: a technical paper presentation competition, Udbhavanam 2	5th March, 2014	Assam Engineering College
4	Sanjeeb Das, Barun Kanoo, Pratim Parash Kalita (8 th sem)	Quarry Dust- A Promising Geomaterial or Improving the Geotechnical Properties of Soil' (poster)	International Civil Engineering Symposium, 2014	14 th -16 th March, 2014	VIT, Vellore
5	Sanjeeb Das, Rahul Das, Barun Kanoo, Pratim Parash Kalita (8 th sem)	1 st prize	Model Exhibition: Pamban Bridge Model, International Civil Engineering Symposium, 2014	14 th -16 th March, 2014	VIT, Vellore
6	Sanjoy Das, Gobinda Bordoloi, Bijan Dutta, Hiranmoy Dey,		Build-Xtra, Udbhavanam 2	25th March, 2014	Assam Engineering College
7	Suman Saha, Tapan Deka (8 th sem)	Road Improvement Using Plastic Waste	Recycle 2014: annual Symposium on Solid Waste Management	6 th April, 2014	Association of Civil Engineers, IIT Guwahati
8	Sushmita Borah,	A Study on Mechanical-	Recycle 2014: annual Symposium on Solid	6 th April,	Association of Civil

Sl no.	Name of students	Name of the paper/ Award, if any	Conference/competition name/ workshop attended	date	Organised by
	Rimjhim Kashyap (6 th sem)	Biological Treatment Technology of Solid Waste Management and its feasibility in Guwahati City	Waste Management	2014	Engineers, IIT Guwahati
9	Barun Kanoo, Sanjeeb Das, Saubhik Das (8 th sem)	2 nd prize	Easel: Model Bridge Building Competition, Techniche 2014	4 th -7 th Sept, 2014	IIT Guwahati
10	Barun Kanoo (8 th sem)	1 st prize	ROBOSOCER (Robotics), Auxesis, 2014	19 th -22 nd Sept, 2014	Dibrugarh University
11	Barun Kanoo (8 th sem)	2 nd prize	ROBOASSAULT (Robotics), Auxesis, 2014	19 th -22 nd Sept, 2014	Dibrugarh University
12	Sanjeeb Das (8 th sem), Rahul Das (2014 graduate)	6 prizes in robotics	Robotics		Royal Group of Institutions, NITS Mirza, GIMT, Don Bosco College of Engineering and Technology and Tezpur University
13	Priyanka Deka, Barsha Sarma, Rimzim Lahkar, Sanandam Bordoloi, Manash Borua	--	UKIERI(UK India Education and Research Initiative) workshop on Seismic Requalification of Pile Supported Structures		IIT Guwahati and Indian Geotechnical Society, Guwahati Chapter (NE)

Sl no.	Name of students	Name of the paper/Award, if any	Conference/competition name/ workshop attended	date	Organised by
	(8 th sem)				

Year 2015

Sl no.	Name of students	Name of the paper/Award, if any	Conference/competition name/ workshop attended	Date	Organized by
1	Ankita Goswami, Pratik Sen Gupta (8 th sem)	Best presentation	ICETESMA-16		New Delhi
2	Mujahidul Islam Barbhuiyan, Md Abu Hena Mustafa Kamal Munna, Mahin Mazumdar (6 th sem)	--	One day seminar on "Earthquake and its effects on structures"	9 th May, 2015	Assam Downtown University, Guwahati
3	Kewal Agarwalla, Sarbajit Bhattacharyya, Mrinal Roy, Ratul Ghosh, Pinak Paul (8 th sem); Rupanjan Chakraborty, Saubhik Das, Kuntal Das (6 th sem)	--	Two-day workshop on "Foundation Engineering and Analysis"	18 th -19 th Sept, 2015	Civil Simplified, UTM Shillong
4	Pranay Sureka (4 th sem)	2 nd prize	Backdoor Scientist competition, Udbhavanam 2015	2015	Assam Engineering College
5	Don Krishna Pegu (6 th sem)	--	<ul style="list-style-type: none"> • Organizer of NCC camp at AEC • Camp Commander of 30th Assam Engineer Coy at NCC 		

Year 2016

Sl no.	Name of students	Name of the paper	Conference/competition name/ workshop attended	Date	Organized by
1	Mousam Talukdar, Priyam Deka, Isfaqul Ahmed, Chayanika Devi, Gunendra Sharma (6 th sem)	3 rd prize	Instridge: Arch bridge designing competition, Megalith 2016	26 th – 28 th Feb, 2016	IIT Kharagpur
2	Ankur Kalita, Tulika Das, Himangshu Sekhar Saud, Salma Nasrin, Abhishek Singh (6 th sem)	2 nd prize	Instridge: Arch bridge designing competition, Megalith 2016	26 th – 28 th Feb, 2016	IIT Kharagpur
3	Rupanjan Chakraborty, Rakesh Barman, (8 th sem) Sarbajit Bhattacharyya (graduate)	Best paper and oral presentation	Recycle 2016: International Conference on Waste Management	1 st -2 nd April	IIT Guwahati
4	Vicky Raj Ray (6 th sem), Priyanka Kotoky, Mriganka Saikia (ME, 4 th sem)	1 st prize	Srijan: a structural designing competition, Sastricas-2016	7 th -9 th April, 2016	NITS Mirza
5	Rakesh Barman, Akash Borah, Tania	--	International Workshop on "Cross-cultural Analysis and Capacity Building in Construction	13 th -16 th Dec, 2016	AEC, Govt. Of Assam, Univ. Of Melbourne,

Sl no.	Name of students	Name of the paper	Conference/competition name/ workshop attended	Date	Organized by
	Choudhury, Arpan J Uzir, Biswajit Das, Bikash Dibra, Abu Waydah Rahman, Abhijit Das, Avinash Kashyap (8 th sem)		Management Practices on Housing and Infrastructure Sectors in Assam and Australia"		Assam Engineering College
6	Krishanu Narayan Das (4 th sem)	--	Workshop on "Remote Controlled Aircrafts"		Seismech, IIT Guwahati

Year 2017

Sl no.	Name of students	Name of the paper	Conference/competition name/ workshop attended	Date	Organised by
1	Arindam Bortamuly (4 th sem)	--	MIT-IIT Make in India Bootcamp on Fabrication, Innovation and Entrepreneurship	19 th June - 15 th July, 2017	IIT Delhi and IIT Mandi
2	Gunendra Sharma, Chayanika Devi (8 th sem)	2 nd prize	20 th ISTE Students National Convention	28 th - 29 th Oct., 2017	USTM and RIST, Meghalaya
3	Rupam Choudhury, David Pratim Gogoi, Mousum Talukdar, Nairita Sarma	Winner	Ideathon: Youth Innovations for a Brighter Assam,	2 nd -3 rd Nov, 2017	UNDP and Govt. Of Assam, Assam Administrative Staff College, Guwahati.
4	Gunendra Sharma, Chayanika Devi	Nano Modification of Natural Fibre to			

Sl no.	Name of students	Name of the paper	Conference/competition name/ workshop attended	date	Organised by
	(8 th sem)	Improve Its Efficacy as Soil Reinforcement Material			
5	Gunendra Sharma, Chayanika Devi (8 th sem)	1 st prize	Aarohan 2017		Assam Engineering College

Criterion 5	Faculty Information and Contributions	200
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FACULTY INFORMATION AND CONTRIBUTIONS (200)

2017-18

Sl. No.	Name of the Faculty Member	Qualification				Designation	Date of Joining the Institution	Department	Specialization	Academic Research			Sponsored Research (Funded Research)	Consultancy and Product Development
		Degree (highest degree)	University	Year of Graduation	Association with the Institution					Research Paper Publications	Ph.D. Guidance	Faculty Receiving Ph.D. during the Assessment Years		
1	Dr. Palash Jyoti Hazarika	Ph.D.	University of Roorkee	2000	1988	Professor	15/11/1988	Civil Engg.	Structural Engineering	12	1 completed 4 ongoing	-	3 Sponsored projects worth 44.5 Lakhs	2 consultancy projects worth Rs. 10 Lakhs
2	Dr. Binu Sharma	Ph.D.	Gauhati University	2000	1987	Professor	07/03/1987	Civil Engg.	Geotechnical Engineering	42	4 ongoing	-	Nil	4 consultancy projects

3	Dr. Jayanta Pathak	Ph.D.	IIT Roorkee	2002	1992	Professor	06/11/1992	Civil Engg.	Structural Engineering	12	2 completed 5 ongoing	-	6 sponsored projects worth Rs. 250.5 Lakhs	1 consultancy projects worth more than Rs. 25 Lakhs
4	Mr. Sunit Kumar Bhagabati	M.U.R.P.	University of Roorkee	1993	1981	Associate Professor	11/12/1981	Civil Engg.	Planning	Nil	-	-	Nil	Nil
5	Dr. Mrinal Kumar Borah	Ph.D.	Gauhati University	2011	1992	Professor	15/10/1992	Civil Engg.	Water Resources Engineering	9	2 ongoing	Yes	Nil	Nil
6	Dr. Diganta Goswami	Ph.D.	IIT Roorkee	2004	1992	Associate Professor	23/10/1992	Civil Engg.	Geotechnical Engineering	28	3 completed 9 ongoing	-	1 sponsored research project worth Rs. 24,93,000/-	5 consultancy projects worth more than Rs. 19,16,200/-
7	Dr. Bipul Talukdar	Ph.D.	University of Roorkee	2000	2000	Associate Professor	28/01/2000	Civil Engg.	Water Resources Engineering	28	3 completed 4 ongoing	-	6 sponsored projects worth Rs. 77.68 Lakhs	5 consultancy projects worth Rs. 21.47 Lakhs
8	Dr. Bibhash Sarma	Ph.D.	IIT Roorkee	2004	1997	Associate Professor	06/05/1997	Civil Engg.	Water Resources Engineering	34	2 completed 4 ongoing	-	1 sponsored project worth Rs. 9,86,230/-	7 consultancy projects worth Rs.69 Lakhs
9	Dr. Utpal Kumar Misra	Ph.D.	IIT Roorkee	2006	1994	Associate Professor	04/10/1994	Civil Engg.	Water Resources Engineering	5	Nil	-	1 sponsored project worth Rs. 18 Lakhs	Nil
10	Mr. Bhaskar Jyoti Das	M.E.	Gauhati University	1995	1997	Associate Professor	18/08/1997	Civil Engg.	Geotechnical Engineering	9	Nil	-	1 sponsored project worth Rs. 14,96,000/-	20 consultancy projects
11	Dr. Utpal Kumar Nath	Ph.D.	Gauhati University	2012	2008	Associate Professor	12/05/2008	Civil Engg.	Structural Engineering	32	6 ongoing	Yes	2 sponsored projects worth Rs. 10 Lakhs	2 consultancy projects worth Rs. 10 Lakhs

12	Dr. Malaya Chetia	Ph.D.	IIT Guwahati	2012	1995	Asstt. Professor	31/07/1995	Civil Engg.	Geotechnical Engineering	81	1 ongoing	Yes	Nil	Nil
13	Dr. Triptimoni Borah	Ph.D.	IIT Guwahati	2015	2014	Associate Professor	07/11/2014	Civil Engg.	Water Resources and Environmental Engineering	29	Nil	Yes	Nil	Nil
14	Dr. Pankaj Goswami	Ph.D.	Gauhati University	2013	1996	Asstt. Professor	03/08/1996	Civil Engg.	Water Resources Engineering	5	Nil	Yes	Nil	Consultancy projects worth more than Rs. 20 Lakhs
15	Dr. Bharati Medhi Das	Ph.D.	Gauhati University	2018	1999	Asstt. Professor	25/01/1999	Civil Engg.	Water Resources Engineering	4	-	Yes	Nil	Nil
16	Mrs. Puspanjali Sonowal	M.Tech.	IIT Guwahati	2012	2007	Asstt. Professor	06/01/2007	Civil Engg.	Environmental Engineering	4	-	-	Nil	Nil
17	Mrs. Rupjyoti Bordoloi	M.Tech.	IIT Guwahati	2013	2007	Asstt. Professor	08/01/2007	Civil Engg.	Transportation Systems Engineering	1	-	-	Nil	Nil
18	Mr. Abinash Mahanta	M.E.	Gauhati University	2009	2011	Asstt. Professor	09/03/2011	Civil Engg.	Geotechnical Engineering	-	-	-	Nil	Nil
19	Dr. Sasanka Borah	Ph.D.	Gauhati University	2018	2011	Asstt. Professor	26/09/2011	Civil Engg.	Geotechnical Earthquake Engineering	11	-	Yes		
20	Dr. Indira Baruah Gogoi	Ph.D.	Gauhati University	2017	1993	Retired (Guest) faculty	01/03/2016	Civil Engg.	Engg. Geoscience	5	-	Yes	Nil	Nil
21	Mr. Prasenjit Saha	B.E.	Gauhati University	2013	2013	Guest faculty	01/08/2013	Civil Engg.	Electronics and Telecommunication Engineering	2	-	-	Nil	Nil
22	Ms. Mitali Mandal	M.Tech.	NIT Silchar	2015	2015	Guest faculty	01/08/2015	Civil Engg.	Structural Engineering	1	-	-	Nil	Nil

23	Mrs. Rhitwika Barman	M.E.	Gauhati University	2016	2016	Guest faculty	08/01/2016	Civil Engg.	Watershed Management and Flood Control	1	-	-	Nil	Nil
24	Mrs. Anindita Bhattacharjya	M.Sc (Geological sciences)	Gauhati University	2013	2017	Guest faculty	01/03/2017	Civil Engg.	Structural Geology	2	-	-	Nil	Nil
25	Mr. Bibhuti B. Bhardwaj	M.Tech	IIT Guwahati	2016	2018	Asstt. Professor (under TEQIP-III, NPIU)	02/01/2018	Civil Engg.	Transportation Systems Engineering	1	-	-	Nil	Nil
26	Ms. Jayshree Hazarika	M.Tech	IIT Guwahati	2013	2018	Asstt. Professor (under TEQIP-III, NPIU)	03/01/2018	Civil Engg.	Water Resources Engineering and Management	5	-	-	Nil	Nil
27	Ms. Rupali Sarmah	M.Tech	IIT Delhi	2015	2018	Asstt. Professor (under TEQIP-III, NPIU)	03/01/2018	Civil Engg.	Rock Engineering and Underground Structures	2	-	-	Nil	Nil
28	Mr. Diptojit Datta	M.Tech	IIT Guwahati	2017	2018	Asstt. Professor (under TEQIP-III, NPIU)	03/01/2018	Civil Engg.	Structural Engineering	3	-	-	Nil	Nil

N.B.: Similar tables are added for the academic year 2016-17 and 2015-16 in Annexure-II

Student-Faculty Ratio (SFR) (20)

No. of UG Programs in the Department (n): 1

No. of PG Programs in the Department (m): 2

No. of Students in UG 2nd Year= u1

No. of Students in UG 3rd Year =u2

No. of Students in UG 4th Year= u3

No. of Students in PG 1st Year= p1

No. of Students in PG 2nd Year= p2

No. of Students = Sanctioned Intake + Actual admitted lateral entry students

(The above data to be provided considering all the UG and PG programs of the department)

S=Number of Students in the Department

F = Total Number of Faculty Members in the Department (excluding first year faculty)

Student Teacher Ratio (STR) = S / F

Year	CAY (2017-2018)	CAYm1 (2016-2017)	CAYm2 (2015-2016)
UG1	90+12=102	90+9=99	90+8=98
UG2	90+9=99	90+8=98	90+9=99
UG3	90+8=98	90+9=99	90+9=99
p1.1 (Geotech. Engg)	18	18	18
p1.2 (Water Res. Engg.)	18	18	18
PG1	18+18=36	18+18=36	18+18=36
P2.1 (Geotech. Engg)	18	18	18
P2.2 (Water Res. Engg.)	18	18	18
PG3	18+18=36	18+18=36	18+18=36
Total No. of Students in the Department (S)	371	368	368
No. of Faculty in the Department (F)	23	19	19
Student Faculty Ratio (SFR)	SFR1=371/23 = 16.13	SFR1=368/19 = 19.37	SFR1=368/19 = 19.37
Average SFR	SFR=18.29		

Table B.5.1

Faculty Cadre Proportion (25)

The reference Faculty cadre proportion is 1(F1):2(F2):6(F3)

F1: Number of Professors required = 1/9 Number of Faculty required to comply with 15:1

Student-Faculty ratio based on no. of students (N) as per 5.1

F2: Number of Associate Professors required = 2/9 x Number of Faculty required to comply with

15:1 Student-Faculty ratio based on no. of students (N) as per 5.1

F3: Number of Assistant Professors required = 6/9 x Number of Faculty required to comply with

15:1 Student-Faculty ratio based on no. of students (N) as per 5.1

Year	Professors		Associate Professors		Assistant Professors	
	Required F1	Available	Required F2	Available	Required F3	Available
CAY (2017-2018)	3	4	6	8	16	11
CAYm1(2016-2017)	3	3	6	7	16	9
CAYm2 (2015-2016)	3	3	6	7	16	9
Average Numbers	RF1=3	AF1=3.33	RF2=6	AF2=7.33	RF3=16	AF3=9.67

Table B.5.2

$$\text{Cadre Ration Marks} = \left\{ \left(\frac{AF1}{RF1} \right) + 0.6 \times \left(\frac{AF2}{RF2} \right) + 0.4 \times \left(\frac{AF3}{RF3} \right) \right\} \times 12.5$$

$$\text{Cadre Ration Marks} = \left\{ \left(\frac{3.33}{3} \right) + 0.6 \times \left(\frac{7.33}{6} \right) + 0.4 \times \left(\frac{9.67}{16} \right) \right\} \times 12.5 = 26.06 = 25$$

Faculty Qualification (25)

FQ = 2.5 x [(10X +4Y)/F] where x is no. of regular faculty with Ph.D., Y is no.

of regular faculty with M.Tech. F is no. of regular faculty required to comply 1:15

Faculty Student ratio (no. of faculty and no. of students required are to be calculated as per 5.1)

Years	X	Y	F	$FQ=2.5 \times [(10X + 4Y)/F]$
CAY (2017-2018)	14	5	25	16.0
CAYm1 (2016-2017)	12	7	25	14.8
CAYm2 (2015-2016)	12	7	25	14.8
Average Assessment				15.2

Faculty Retention (25)

No. of regular faculty members in

CAYm3 (2014-15) = 20

CAYm2 (2015-16) = 19 (95% retained, one faculty has retired and joined as guest faculty)

CAYm1 (2016-17) = 19 (95%)

CAY (2017-18) = 23 (4 nos. TEQIP faculties have joined)

Item (% of faculty retained during the period of three academic years keeping CAYm3 as base year)	Marks (Allotted)	Marks (Allotted)
>=90% of required Faculty members retained during the period of three academic years keeping CAYm3 as base year	25	
>=75% of required Faculty members retained during the period of three academic years keeping CAYm3 as base year	20	
>=60% of required Faculty members retained during the period of three academic years keeping CAYm3 as base year	15	25
>=50% of required Faculty members retained during the period of three academic years keeping CAYm3 as base year	10	
<50% of required Faculty members retained during the period of three academic years keeping CAYm3 as base year	0	

Table B.5.4

Innovations by the Faculty in Teaching and Learning (20)

All the classrooms of the department of civil engineering are equipped with projectors and faculties make use of the same whenever they feel necessary.

A change in normal lab classes has been introduced in the department of Civil Engineering by introducing the concept of rubric while writing/Preparing the lab reports. The students are provided a rubric before submitting the lab reports, and they have to follow the rubric at every step. The rubric used for Transportation Engineering-II laboratory is shown-

Sl No.	Part of the report	Assigned Marks
1	Experiment No.	0.25
2	Name of the Experiment	0.25
3	Aim of the experiment	0.5
4	Relevance of the Experiment You are expected to write this in bullets discussing all the following points- why the test is performed- what property is evaluated by the test-why this property should be evaluated-how these test results help in good road construction-what if this property is not evaluated before road construction	5
5	Test Description If you write directly as given in the manual you will get 1.5 out of 3 marks If you write in your own language- 3 out of 3 marks If copied from one another i.e. same writing for two or more students- 1.5 out of 3 marks for all those students	3
6	Apparatus Used Write as it is in the manual without diagram- 1 out of 3 marks Write as it is in the manual with neat schematic diagram- 1.5 out of 3 marks Write as it is in the manual with neat schematic diagram + Write about the shortcomings in the lab - 3 out of 3 marks (e.g. in ductility test one of the shortcomings in the lab was that the temperature of the bath could not be maintained at given temperature because of lack of thermostat)	3
7	Relevant Codes Just mentioning the codes as written in the manual - 1 out of 3 marks Attaching print out of any one of the relevant codes with the report- 3 out of 3 marks	3
8	Procedure Write as it is in the manual - 1 out of 3 marks Write as it is in the manual, but in passive voice - 1.5 out of 3 marks Write as it is in the manual, but in passive voice + Write about the shortcomings in conducting the experiment- 3 out of 3 marks	3

Sl No.	Part of the report	Assigned Marks
	(e.g. in ductility test we did not allow the specimen to cool down in air temperature for the given time as mentioned in the code)	
9	Observation Table and Result (2+2+1) Construction of the table in proper format- 2 marks Matching of the results (2 marks)- <ul style="list-style-type: none"> Matching of the results with the group members (2 out of 2 marks) Not matching of the results with the group members (0 out of 2 marks) Final result of the test (the average of the values obtained) - 1 mark	5
10	Discussion Discuss on the result obtained from the test e.g. what can you comment on the type of material from the result-where can you use the material with that kind of result-how the shortcomings in the lab apparatus or procedure followed can have impact on the result-your final conclusion on the test Copying of discussion will directly bring 0 marks to both the students	5
11	Precautions As written in the manual- 1.5 out of 2 marks Anything extra with that- 2 out of 2 marks	2

The students after submitting their reports can view their marks online at any time by clicking a link, where the marks are updated after each and every copy gets evaluated.

Also, the system of open book quiz has also been introduced. The students are allowed to bring books, notebooks, laptops while solving the papers. This opens up their minds as well and their potential gets measured too.

The same can be viewed and is available for peer review and critique here-

http://www.ide.iitkgp.ernet.in/Pedagogy/fullcourse.jsp?COURSE_ID=3286

Faculty as participants in Faculty development/training activities/STTPs(15)

- A Faculty scores maximum five points for participation
- Participation in 2 to 5 days Faculty development program: 3 Points
- Participation >5 days Faculty development program: 5 points

Name of the Faculty	Max. 5 per Faculty			
	CAY (2017-2018)	CAYm1 (2016-2017)	CAYm2 (2015-2016)	CAYm3 (2014-2015)
Mr. Bhaskar Jyoti Das	-	-	3	-

Name of the Faculty	Max. 5 per Faculty			
	CAY (2017-2018)	CAYm1 (2016-2017)	CAYm2 (2015-2016)	CAYm3 (2014-2015)
Dr. Sasanka Borah	3	5	3	5
Dr. Bharati Medhi Das	3	-	5	-
Dr. Jayanta Pathak	5	5	-	3
Dr. Bipul Talukdar	5	-	-	-
Dr. Utpal Kumar Nath	5	3	3	5
Dr. Triptimoni Borah	-	3	-	3
Mrs. Puspanjali Sonowal	5	3	5	-
Mrs. Rupjyoti Bordoloi	5	-	3	-
Mr. Bibhuti B. Bhardwaj	3	-	-	-
Ms. Jayshree Hazarika	3	-	-	-
Ms. Rupali Sarmah	3	-	-	-
Mr. Diptojit Datta	3	-	-	-
Sum	43	19	22	16
RF = Number of Faculty required to comply with 15:1	25	25	25	25
Assessment = 3 × (Sum/0.5RF)	10.32	4.56	5.28	3.84
Average assessment over three years (Marks limited to 15) = 4.56				

Table B.5.6

Research and Development (30)

Academic Research (10)

Research Paper Publications during the assessment period:

(Journal publications/conference papers/book chapters)

Dr. Palash Jyoti Hazarika

1. (2015) "Finite Element Analysis of Pile Cap Lateral Resistance", Paper No. 81, 50th Indian Geotechnical Conference, December 2015, Pune, Maharashtra, India.
2. (2013) "Lateral resistance of pile cap - an experimental investigation", International journal of Geotechnical Engineering, Vol. 7, No. 3, 266-272.
3. (2013) "Parametric study of pile cap lateral resistance : finite element analysis", International journal of Geotechnical Engineering, Vol. 7, No. 3, 273-281.
4. (2011) "Study of Lateral Resistance of Pile Cap using Finite Element Analysis", International journal of emerging trends in engineering and development (ijeted), Vol. 1, 15-31.
5. (2011) "Prediction of Compressive Strength of Concrete using Neural Network", International journal of emerging trends in engineering and development (ijeted), Vol. 1, 32-43.
6. (2011) "Study of Pile Cap Lateral Resistance using Artificial Neural Networks", International Journal of Computer Applications (0975 - 8887), Volume 21- No.1, ISBN: 978-93-80749-22-7, pp. 20-25.
7. (2011) "Prediction of pile cap lateral resistance using neural networks", Indian Geotechnical Conference, Kochi, Kerala, pp. 815-818.

Dr. Binu Sharma

1. Sharma, B; Gogoi, B; Sridharan, A. (2018) Static Compaction Characteristics of Coarse and Fine Grained Soils. Accepted for publication in Sustainable Civil Infrastructures of GeoChina 2018, July 23-25, 2018, HangZhou, China.
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5. Sharma,B and Deka,A. (2017). "A study on Static compaction of Soils" Springer conference volume. IGC 2016, 15-17 December, IIT Madras, Chennai,India.
6. Sharma,B and Sarkar,S.(2017). "A Study on Efficiency of Micropile Groups" Springer conference volume. IGC 2016, 15-17 December, IIT Madras, Chennai,India.
7. Sharma,B and Deka, P.(2017) "A study on Compressibility,Swelling and Permeability Behaviour of Bentonite-Sand Mixtures". Springer conference volume, IGC 2016, 15-17 December, IIT Madras, Chennai,India.
8. Sharma,B; Sarma,S; Sridharan,A. (2017). A Study on Compressibility, Swelling and Permeability characteristics of a Bentonite-Sand Mixture. Indian Geotechnical Conference 2017 GeoNEst 14-16 December 2017, IIT Guwahati, India.
9. Sharma,B; Siddique,A; Medhi, B. (2017). Assessment of Liquefaction Potential of Guwahati city using Ground Response Analysis. Proceedings of the National conference on recent advancement in Geotechnical Investigations and Ground Improvement Techniques, 14-15 May, 2017, NIT Silchar.
10. Sharma,B; Sridharan,A and Talukdar,P.(2016) " Static Method to determine Compaction Characteristics of Soils". Accepted for publication in the Geotechnical Engineering Journal, American Society of Testing Materials (ASTM).
11. Sharma, B. and Rahman, S.K. (2016) Use of GIS Based Maps for Preliminary Assessment of Subsoil of Guwahati City. *Journal of Geoscience and Environment Protection*, 4, 106-116. <http://dx.doi.org/10.4236/gep.2016.45011>
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Dr. Jayanta Pathak

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2. "A Prognostics Earthquake Damage Scenario of Traditional and Conventional Housing in the Guwahati Urban Centre", International Journal of Scientific and Engineering Research (IJSER), Paper Published in IJSER Volume 7, Issue6, June 2016 Edition (ISSN 2229-5518).
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- Curve using Short Duration Rainfall Data for Different Return Period for Guwahati City. International Journal of Scienctific and Engineering Research, Volume 7, July 2016, ISSN 2229-5518, pp. 908-911.
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Dr. Bibhash Sarma

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Dr. Bharati Medhi Das

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2. Medhi Das, B., Sarma, B. and Das, M.M. (2017) " solution of unsteady flow equations in high pressure pipe" IJIRSET, Vol.6, Issue 3, pp 4300-4312
3. Medhi Das, B., Das, M.M., and Sarma, B. (2016) "Evaluation of Numerical Solution Methods and Resistance Equations for Unsteady Flow in Surge Tank" IRJET, Vol.03,

4. Medhi Das, B. and Sarma, B. (2016) "Solution of Non-Linear Unsteady Flow Equation in Surge Tank" IJEERT, Vol.4, Issue 9, pp 8 - 17.

Mrs. Puspanjali Sonowal

1. Vermicomposting of Dewatered Sludge from Pulp and Paper mill; International Journal of Environment and Waste Management, volume 5, issue-1, pp-24-34, 2014
2. Vermicomposting of solid Pulp and Paper mill Sludge (SPPMS) using Eudrilus Eugeniae Earthworm; international journal of Environmental sciences, volume 5, issue-3, pp-502-514, 2014
3. Stability Analysis of Dewatered Sludge of Pulp and Paper mill during Vermicomposting; Waste and Biomass Valorization, volume 5, issue-1, pp-19-26, 2014
4. Feasibility of Vermicomposting Dewatered Sludge from paper mills using Perionyx Excavatus; European journal of environmental sciences, volume 3, issue-1, pp-17-26, 2013

Mrs. Rupjyoti Bordoloi

1. Quantification of Land Use Diversity in the Context of Mixed Land Use; Procedia-Social and Behavioral Sciences, Volume 104, pp-563-572, December 2013

Dr. Sasanka Borah

1. Borah, S. and Doloi, H. (2018), "Sustainable Construction in the Context of Smart Villages in Assam", Proceedings of the Zero Energy Mass Custom Home (ZEMCH) 2018 International Conference, University of Melbourne, Australia, 29th January - 1st February, 2018, ISBN: 978-0-7340-5486-9, pp. 367-378.
2. Choudhury, S., Baishya, P. and Borah, S. (2017), "Effect of Lime-Mud on Consolidation Characteristics of Soil", Indian Geotechnical Conference 2017 GeoNEst, 14-16 December, 2017, IIT Guwahati, India.
3. Borah, S., Goswami, D. And Pathak, J. (2016), "Site Response in Guwahati Region using Standard Spectral Ratio", International Journal of Research in Engineering and Technology, Vol. 5, No 4, pp.77-81.
4. Borah, S., Goswami, D. And Pathak, J. (2016), " Site Response Analysis : Guwahati City and CMP 2025", 6ICRAGEE, 6th International Conference on Recent Advances

in Geotechnical Earthquake Engineering and Soil Dynamics, August 1 – 6, 2016, IIT Roorkee Extension Centre, 20 Knowledge Park II, Greater Noida, India

5. Borah, S., Goswami, D. And Pathak, J. (2016), "Site Amplification: A study in Guwahati Region", 16th World Conference in Earthquake Engineering, Chile. (Abstract only)
6. Das, N.J., Deori, M. & Borah, S. (2016), "Site Response Analysis: A case study of Guwahati city", 1st International Conference on Civil Engineering for Sustainable Development-Opportunities and Challenges, 19-21 Dec, 2016, Assam Engineering College, Guwahati, Assam.
7. Borah, S., Goswami, G, & Pathak, J. (2016), "Site Response Studies for Sustainable Urban Planning - A Case Study of the Western Guwahati Region", 1st International Conference on Civil Engineering for Sustainable Development-Opportunities and Challenges, 19-21 Dec, 2016, Assam Engineering College, Guwahati, Assam.
8. Bordoloi, S., Yamsani, S.K., Garg, A. & Borah, S (2015), "Study on the efficacy of harmful weed species Eichornia crassipes for soil reinforcement", Ecological Engineering, Vol 85, pp. 218-222.
9. Bordoloi, S., Yamsani, S.K., Sreedep, S. & Borah, S. (2015), "Effect of compaction state on strength characteristics of fibre reinforced soil", 5 th Indian Young Geotechnical Engineers Conference (5IYGE), 14-15 March, 2015, Vadodara.
10. Baruah, B & Borah, S. (2015), "Effect of Lime-mud on undrained shear strength of soil" 5 th Indian Young Geotechnical Engineers Conference (5IYGE), 14-15 March, 2015, Vadodara.
11. Wahab, S.A., Sharma, A.K., Kalita, M. & Borah, S. (2015), "Ground Subsidence due to Tunnelling and Effects on Pile Foundations", Journal of Applied and Fundamental Sciences, Vol 1(2), pp. 237-244.

Ph.D. guided /Ph.D. awarded during the assessment period while working in the institute

- **Ph.D. guidance**

Name of the faculty	Number of students	Name of the student	Year of graduation	Topic
Dr. Palash Jyoti Hazarika	1 completed & 4 ongoing	Utpal Kumar Nath	2012	A Study of Pile Group Performance under Lateral Load
		M. H. Al-Rashid	continuing	Not yet decided

Name of the faculty	Number of students	Name of the student	Year of graduation	Topic
		Yudhajit Dey	continuing	Not yet decided
		Nilakshi Talukdar	continuing	Not yet decided
		Gitartha Kalita	continuing	Not yet decided
Dr. Binu Sharma	4 ongoing	Zakir Hussain	continuing	Response of Micropiles in Granular Soil Under Various Loading Conditions
		Gopal Banik	continuing	Not yet decided
		Amar Farooq Siddique	continuing	Liquifaction with Ground Response Analysis (tentative)
		Shafi Kamal Rahman	continuing	Swelling Compressibility and Permeability Characteristics of Bentonite Sand Mixture using Ethanol (tentative)
Dr. Jayanta Pathak	2 completed & 5 ongoing	N. N. Patowari	2017	Seismic vulnerability assessment and prognostic damage scenario of conventional and traditional housing around under centres of Assam
		Sasanka Borah	2017	Site Response Analysis and Soil Structure Interaction in High Seismic Region
		Partha Pratim Roy	continuing/ readmission reqd.	Comparative Study of Various Parameters and Optimal Design of Cable Stayed Bridge
		Jyotisman Saikia	continuing	Earthquake Vulnerability Study of Guwahati Urban Centre Based on Site Response (tentative)
		Nabanita Sharma	continuing	A Study of Deep Foundations Under Dynamic Load for Mid-Rise Buildings
		Karabi Bharadwaj	continuing	Cost Effective Retrofitting Solutions for Open Ground-Storyed Buildings in Urban Centre
		Deberaj Bailung Sonowal	continuing	Seismic Vulnerability Assessment of Highway Bridges
Dr. Mrinal Kumar Borah	2 ongoing	Dwipjyoti Mishra	continuing	Not yet decided
		Bhagirathi Taro	continuing	Not yet decided

Name of the faculty	Number of students	Name of the student	Year of graduation	Topic
Dr. Diganta Goswami	3 completed & 9 ongoing	Bibeka Nanda Choudhury	2014	Strength and deformation behavior of reclaimed land with reference to municipal solid waste dumping sites
		Indira B. Gogoi	2017	A study of river borne aggregates of some rivers of Assam as construction materials
		Sasanka Borah	2017	Site Response Analysis and Soil Structure Interaction in High Seismic Region
		Ruby Das Borah	Continuing (Thesis submitted)	Integrated Remote Sensing and GIS Based Study on Urban Storm Water Fielding in Guwahati
		Ranjeet Bahadur Singh	continuing	A Study on the Complexities in River Valley Projects in the Himalayas
		Arunav Chakraborty	continuing	Three Dimensional Slope Stability Analysis of Landslides in Guwahati and Adjoining Areas-Causative Factors and Remedial Measures
		Ranu Gowala	continuing	Not yet decided
		Nabanita Sharma	continuing	A Study of Deep Foundations Under Dynamic Load for Mid-Rise Buildings
		Nabanita Baruah	continuing	Shallow tunneling through soft ground
		Nabanita Das	continuing	Stability of slope under dynamic loading with special reference to Guwahati city
Dr. Bipul Talukdar	3 completed & 4 ongoing	Bhaskar Jyoti Das	continuing	Not yet decided
		Pawan Kumar Singh	continuing	Not yet decided
		Debasis Deb	2011	Integrated Land and Water Resources Management of a Water Logged Area using RS and GIS Technology
		Sirajul Islam	2014	Development of Optimal Irrigation Strategies under Conjunctive use System.

Name of the faculty	Number of students	Name of the student	Year of graduation	Topic
		Pankaj Kr. Goswami	2014	Evaluation of Scour Depth around Bridge Piers.
		Nripen Mazumdar	continuing	Erosion Hazard Assessment of Brahmaputra River Bank in Lower Assam Region.
		Ranjit Das	continuing	Assessment of River Bank Erosion and Embankment Vulnerability of Some Rivers of Assam: A Geo-Spatial Approach
		Priyanjit Purkaystha	continuing	Dynamic Modelling for Floodplain Management in Assam
		Rhitwika Barman	continuing	Sediment Transporation Characteristics and Modelling of Brahmaputra River.
Dr. Bibhash Sarma	2 completed & 4 ongoing	Lakshmi Rani Konwar	2017	A Study of Resistance to Open Channel and Pipe Flow
		Bharati Medhi Das	2018	Study of Non-Linear Unsteady Flow in Surge Tank and High Pressure Pipes
		Jahanur Rahman	continuing	Irrigation Development of Dhansiri Basin
		Krishna Kamal Das	continuing	Water Resources Development of Kulsu River Basin
		Junaid Ahmed Choudhury	continuing	Water Resources Development of Buridihing River Basin
		Tsangpo Kashyap	continuing	Yet to be finalised
Dr. Utpal Kumar Misra	2 ongoing	Pranjal Buragohain	continuing	Hydrological and Hydro-Chemical Study of Basistha Watershed, North East India with Special Reference to Sustainable Water Resource Management
		Biswadeep Bharali	continuing	A Proposed Model of Channel Routing for Gauged and Ungauged Basin

Name of the faculty	Number of students	Name of the student	Year of graduation	Topic
Dr. Utpal Kumar Nath	6 ongoing	Noorjahan Begum	continuing	Effect of Climate Parameters on Slope Stability- A Study in Greater Guwahati Area
		Bhaskarendra Nath Patowary	continuing	Parametric study of Piled Raft Foundation
		Mukul Kalita	continuing	Dynamic behaviour of Piled Raft Foundation
		Mitali Mandal	continuing	Study on Re-Strengthening of RCC Structures
		Angana Kakoty	continuing	A Study on the River-Borne Fine Aggregates and Hill Quarry Stone-Dust for Construction Purpose
		Anku Medhi	continuing	Study of Behavior of Closely Spaced Footings
Dr. Malaya Chetia	1 ongoing	Tinku Kalita	continuing	Not yet decided

- Faculty receiving Ph.D. during the assessment period

Name of the faculty	Name of guide	Year of graduation	University	Topic
Dr. Mrinal Kumar Borah	Dr. Madan Mohan Das	2011	Gauhati University	Infiltration into Non-homogeneous Soils
Dr. Utpal Kumar Nath	Dr. Palash Jyoti Hazarika	2012	Gauhati University	A Study of Pile Group Performance under Lateral Load
Dr. Malaya Chetia	Dr. Sreedeept S.	2012	IIT Guwahati	A study on Measuring Methodologies and Critical Parameters Influencing Soil Suction-Water Content Relationship
Dr. Pankaj Goswami	Dr. Bibha Das Saikia & Dr.	2014	Gauhati University	Evaluation of Scour Depth around Bridge Piers

Name of the faculty	Name of guide	Year of graduation	University	Topic
	Bipul Talukdar			
Dr. Triptimoni Borah	Dr. Rajib Kumar Bhattacharjya	2014	IIT Guwahati	Development of Efficient Pollution Source Identification Model using ANN-GMS-GA Based Simulation-Optimization Approach
Dr. Sasanka Borah	Dr. Diganta Goswami & Dr. Jayanta Pathak	2017	Gauhati University	Site Response Analysis and Soil Structure Interaction in High Seismic Region
Dr. Bharati Medhi Das	Dr. Madan Mohan Das & Dr. Bibhash Sarma	2018	Gauhati University	Study of Non-Linear Unsteady Flow in Surge Tank and High-Pressure Pipes

Sponsored Research (5)

Funded research:

Name of the faculty	Project Title	Funding Agency	Year	Amount (in Rs.)	Duration
Dr. Jayanta Pathak	Earthquake Damage and Loss Estimation of Guwahati City for Scenario Earthquakes - a step towards Real-Time Earthquake Damage and Loss Information System" (short ELIAS)-in collaboration with NORSAR (Earthquake Hazard and Risk, Stiftelsen NORSAR, Norway) and supported by IIT Roorkee	Assam State Disaster Management Authority(ASDMA), Govt. of Assam	2016 - 2018	98,95,200/-	2 years
Dr. Utpal Kumar Nath	Full Scale Experimental Study of Pile cap Lateral Resistance	OIL-IEI, ASC H P Barua Fellowship-2014	2014	5,00,000/-	1 year

Name of the faculty	Project Title	Funding Agency	Year	Amount (in Rs.)	Duration
Dr. Diganta Goswami	Investigation of Deformation Modulus & Characteristics of soft Tertiary Rock at Pare HE Project by Measuring Deformation in open and Underground Excavation	North Eastern Electrical Power Corporation Ltd (NEEPCO)	2014	24,93,000/-	1 year
Dr. Jayanta Pathak	EQRisk - A Large Research Project on Earthquake Hazard and Risk Reduction In India, In Collaboration With NORSAR and NGI, Norway	Norwegian Research Council, Norway	2012-2016	NOK 419,000 Rs.40,00,000/- (approx)	4 years
Dr. Jayanta Pathak	Status Survey of School and Hospital Buildings in Guwahati City Structural and Non-structural Vulnerability to Earthquake, Wind, Flood & Fire	Assam State Disaster Management Authority (ASDMA), Govt. of Assam	2011 - 2014	53,00,000/-	2 years
Dr. Bipul Talukdar	Modernization of Hydraulics Laboratory	All India Council for Technical Education (AICTE), Govt. of India	2011-2012	14,62,000/-	1 year
Dr. Bipul Talukdar; Dr. Utpal Kumar Misra	Mathematical Modeling of an Erosion Affected Reach of River Brahmaputra	All India Council for Technical Education (AICTE), Govt. of India	2011-2012	18,00,000/-	2 years
Dr. Bipul Talukdar	Evaluation of Scour Depth Around Bridge Piers	All India Council for Technical Education (AICTE), Govt. of India	2011-2012	14,68,795/-	2 years
Dr. Palash Jyoti Hazarika	Establishment of Concrete Quality Testing Laboratory	All India Council for Technical Education (AICTE), Govt. of India: (RPS) 2008	2008	9, 80,000/-	1 year
Dr. Bipul	Modernization of Environmental Engineering	All India Council for Technical	2007-2008	12,50,000/-	1 year

Name of the faculty	Project Title	Funding Agency	Year	Amount (in Rs.)	Duration
Talukdar	Laboratory	Education (AICTE), Govt. of India			
Dr. Bibhash Sarma	Planning for Optimal Utilization of Water in Three Proposed Reservoirs in North-East India	Department of Science & Technology (DST), Govt. of India; DST No: NRDMS/11/1101/ 2006 dated 16.06.2006	2006-2009	9,86,230/-	3 years (01/09/2006 to 30/08/2009)
Dr. Jayanta Pathak	Earthquake Vulnerability Study for Risk Assessment of Guwahati Urban Centre	Department of Science & Technology (DST), Govt. of India	2006-2008	7,50,000/-	2 years
Dr. Bipul Talukdar	Modernization of Computational Laboratory	All India Council for Technical Education (AICTE), Govt. of India	2005-2006	5,00,000/-	1 year
Dr. Palash Jyoti Hazarika	Preparation of Liquefaction potential Map of Guwahati City	Department of Science & Technology (DST), Govt. of India, 2004	2004	26,70,000/-	3 years
Dr. Bipul Talukdar	Explicit Consideration of Reliability in Multiobjective Stochastic Dynamic Programming Models for Reservoir Planning and Operation Problems	All India Council for Technical Education (AICTE), Govt. of India	2000-2001	2,50,000/-	2 years
Dr. Palash Jyoti Hazarika	Establishment of Computer Aided Design and Drafting Centre	All India Council for Technical Education (AICTE), Govt. of India: (TAPTEC) 1993	1993	8,00,000/-	1 year
BJD	MODERNISATION OF TRANSPORTATION ENGINEERING LABORATORY" under MODROBS	All India Council for Technical Education (AICTE), Govt. of India		14,96,000/-	1 year

Name of the faculty	Project Title	Funding Agency	Year	Amount (in Rs.)	Duration
Dr. Bipul Talukdar	Evaluation of Master Plans made during 10th Plan	MoWR (Brahmaputra Board)		25,00,000/-	1 year
Dr. Jayanta Pathak	Technical Safety Audit of Water Supply System and Network In Guwahati City for Earthquake	In collaboration with Guwahati Municipal Corporation (GMC), Assam		33,00,000/-	2 years
Dr. Jayanta Pathak	Technology development for seismic Vulnerability Reduction of Traditional & Conventional housing of Rural areas - RPS project	All India Council for Technical Education (AICTE), Govt. of India		14,00,000/-	1 year
Dr. Utpal Kumar Nath	Rapid Identification of Anomalous Piles using Pile Integrity Tester	Department of Science & Technology (DST), Govt. of India		5,00,000/-	2 years
Dr. Sasanka Borah	Coordinator-Training Programme on Earthquake Resilient Technology for Engineers	Assam State Disaster Management Authority (ASDMA), Govt. of Assam, India		4,86,000/-	28/11/2016 to 07/12/2016

Development activities (10)

Research laboratories

Sr. No.	Name of the Laboratory	Equipment/Software Name
1.	Transportation Engineering	<ul style="list-style-type: none"> • Wheel testing apparatus • Wheel rut shaper • Mastic Asphalt Test Machine • Asphalt Mixture Density Meter • Devel Abrasion Test Apparatus

Sr. No.	Name of the Laboratory	Equipment/Software Name
2.	Geotechnical Engineering	<ul style="list-style-type: none"> • Drop cone test apparatus • Electrical Resistivity apparatus • Large Direct Shear apparatus • Static Cone Penetrometer • Point Load Apparatus • Triaxial test apparatus (Soil and Rock)
3.	Hydraulics Lab	<ul style="list-style-type: none"> • Eco-sounder • Digital Velocity meter • Automatic weather station
5.	Strength of Materials Lab	<ul style="list-style-type: none"> • Rebound Hammer • Ultrasonic Pulse Velocity meter

Product development:

Android applications have been developed for-

- Traffic Volume Analysis
- Analysis of three hinges arch
- Analysis of beam
- Calculation of pump capacity
- Plastic moment capacity

Working Models:

- BEST PRACTICE DOCUMENT drafted by CED AEC for Status Survey of Hospital & School Buildings in Guwahati City and Retrofitting Solutions- published by Department of Admin Reform and Public grievances
<https://www.darpg.gov.in/financialassistance/status-survey-hospital-school-buildings-guwahati-city-and-retrofitting-solutions>
- Design charts for factor of safety for various slope angle, slope height for dry, saturated and submerged condition for soil with various strength parameters (c- ϕ)

Consultancy (from Industry) (5)

Name of the Faculty	Project Title	Funding Agency	Year	Amount (in Rs.)	Duration
Dr. Bipul Talukdar	Quality assurance of KV Building at Rangia, Kamrup	Arunachal Pradesh Public Works Department	2018	5,40,000/-	
Dr. Diganta Goswami	Subsoil investigation at MIMER, Falkawn, Aizawl, Mizoram	HSCC(India) Ltd	2018	4,72,000/-	
Dr. Jayanta Pathak	Consultancy services for Pre-Construction stage - for Power System control centre at Guwahati	POWER SYSTEM OPERATION CORPORATION LTD. (a Govt. of India Enterprise), North Eastern Regional Load Despatch Centre (NERLDC) Dongteih, Lower Nongrah, Lapalang, Shillong - 793006, Meghalaya	2017 - 2019	31,50,000/-	2 years
Dr. Bipul Talukdar	Design and Estimation of KV Buulding in Arunachal Pradesh	Urban Development Department, Arunachal Pradesh	2017	13,67,500/-	
Dr. Diganta Goswami	Slope Stability Analysis and Design of Filter Drains at Chainage 4.3km (Near Dakhala Hills) under the scheme "Assam Integrated Flood and River Bank Erosion Management Project, subproject Palashbari	Flood and river erosion management Agency Assam (FREMAA)	2017	2,16,200/-	

Name of the Faculty	Project Title	Funding Agency	Year	Amount (in Rs.)	Duration
Dr. Bipul Talukdar; Dr. Palash Jyoti Hazarika; Dr. Utpal Kumar Nath	Structural Soundness of Construction of Ph-A (Balance) Building for JNV at Distt. Williamangar (Meghalaya)	HIMALAYA CONSTRUCTION, Tawang, Arunachal Pradesh	2017	6,81,596/-	1 month
Dr. Jayanta Pathak	Expert Inputs in Design and Retrofitting ; Package No. DoF/SHCDM/DS C/03 : Supporting Human Capital Development in Meghalaya state, India , project No. 46166-001	Asian Development Bank (ADB) :: Analysis and design of new and retrofitting of existing school buildings and facilities	2015- till date	34,94,400/-	continuing
Dr. Bibhash Sarma	River model study for the scheme "Protection of Borbeel, Muwamari and Goroimari from the erosion of river Brahmaputra	Water Resources Department, Govt. of Assam	2015	6,00,000/-	3 months
Dr. Bibhash Sarma	Name: Vetting of DPR of the scheme "Anti erosion measures to protect villages Kanthalguri, Jamunaguri, Silbari, Anandapur and Janata Bazar from the erosion of river Langkar on L/B"	Water Resources Department, Govt. of Assam	2015	50,000/-	1 month

Name of the Faculty	Project Title	Funding Agency	Year	Amount (in Rs.)	Duration
Dr. Diganta Goswami	Plate load test and Proctor's light compaction test in and around switchyard area under KaHEP, Kimi, Arunachal Pradesh		2015	2,14,115/-	
Dr. Bibhash Sarma	Construction material testing for different reputed companies working in North-East India	Individual Companies	2014-2018	6,00,000/-	Immediate response for each case
Dr. Bibhash Sarma	Evaluation study of Master Plans prepared by Brahmaputra Board during Xth Plan	Ministry of Water Resources, Govt. of India	2010	10,00,000/-	6 months
Dr. Bibhash Sarma	Review Report for Drainage System at Bamboo Technology Park Chaygaon, Dist.- Kamrup, Assam	Bamboo Technology Park Chaygaon	2009	50,000/-	1 month
Dr. Bibhash Sarma	Soil investigation, planning and design of Dibrugarh town protection embankments	Water Resources Department, Govt. of Assam, funded by Asian Development Bank	2008	12,00,000/-	6 months
Dr. Bibhash Sarma	Evaluation study of many flood mitigation and river bank protection schemes in Assam	Water Resources Department, Govt. of Assam	2007-2013	Rupees twenty lakh (Rs.29,00,000/-)	30 months (scattered duration)
Dr. Bipul Talukdar;	Feasibility Study for Structural	HSCC(India) Ltd		5,00,000/-	1 month

Name of the Faculty	Project Title	Funding Agency	Year	Amount (in Rs.)	Duration
Dr. Palash Jyoti Hazarika; Dr. Utpal Kumar Nath	Stability for Various Blocks of Referal Hospital Campus at Falkawn, Mizoram				
Dr. Diganta Goswami	Rapid Visual Screening of Landslide Vulnerable Areas of Guwahati	District Disaster Management Authority, Kamrup (Metro)		4,00,000/-	
Dr. Diganta Goswami	Determination of Shear Strength Parameters of rock -to-rock interface and concrete-to-rock interface for Pare Hydro Electric Power project by conduction of insitu shear test, in-situ wedge shear test for determination of shear strength parameters for slope stability analysis and excavation planning for Pare Dam at Arunachal Pradesh, India	North Eastern Electrical Power Corporation Ltd (NEEPCO)		6,50,000/-	
Dr. Diganta Goswami	Design for Stabilization of slope by soil nails at Halflong-Jatinga stretch, India	Indian Railways			

Name of the Faculty	Project Title	Funding Agency	Year	Amount (in Rs.)	Duration
Dr. Diganta Goswami	Determination of shear strength parameters of rock-to-rock interface and rock -to-concrete interface by conducting Insitu Shear Test for the proposed 75.0M Bichom Dam, Kameng HE project, Arunachal pradesh	North Eastern Electrical Power Corporation Ltd (NEEPCO)		11,12,364/-	
Dr. Diganta Goswami	Geotechnical Investigation for Numaligarh Township of Numaligarh Refinery Limited, Numaligarh, Assam, India	Numaligarh Refinery Limited			
Dr. Diganta Goswami	Static cone penetration testing and preparation of geotechnical report for Oil Storage Tanks of Numaligarh Refinery limited, Assam, India	Numaligarh Refinery Limited			
Dr. Diganta Goswami	Geotechnical Investigation for Transit Building of Indian Institute of Technology Guwahati, Assam, India	Indian Institute of Technology Guwahati			
Dr. Jayanta	Review of Design and Proof				

Name of the Faculty	Project Title	Funding Agency	Year	Amount (in Rs.)	Duration
Pathak	Checking of Building (above G+7) in Guwahati Metropolitan Area - member of the Review Panel - 75 project Reviewed (approx)				
Dr. Jayanta Pathak	Review of Design and Proof Checking of Bridges and ROBs				
Dr. Jayanta Pathak	Review of design of DHDT extention work at BRPL IOCL Refinery				
Dr. Bipul Talukdar	Stability Checking of the Building Structures/ Foundations at Lakwa Plant (Phase I)	GAIL (India) Limited		2,37,000/-	1 month
Dr. Bipul Talukdar	Stability Checking of the Building Structures/ Foundations at Lakwa Plant (Phase II)	GAIL (India) Limited		4,10,000/-	1 month
Dr. Bipul Talukdar	Evaluation study of various FMP schemes of State Water Resources Department particularly at Biswanath chariali, Morigaon, Nalbari, N. Lakhimpur, Gohpur, Dhubri	Water Resources Department, Govt. of Assam		5,00,000/-	6 months

Name of the Faculty	Project Title	Funding Agency	Year	Amount (in Rs.)	Duration
	ets				
Dr. Binu Sharma	Project on Soil Liquefaction study	Department of Science and Technology, Govt. of India			
Dr. Binu Sharma	Soil consultancy on Kokrajhar University, Guwahati University, IIT(Guwahati), Numaligarh refinery	Respective institutions/organizations			
Dr. Binu Sharma	Flood protection embankment for proposed NEIFRM (ADB) project at Dibrugarh, Assam	Asian Development Bank (ADB)			
Dr. Binu Sharma	NEIFRM (ADB) project in Arunachal pradesh	Asian Development Bank (ADB)			
Dr. Pankaj Goswami	Involved in Nos. of small scale consultancy work amounting +20 lacs from 2006- to 2018	-		more than 20,00,000/-	
Mr. Bhaskar Jyoti Das	Stability analysis of B/Dyke along L/B of river Brahmaputra from Dhing to Hilloikhunda (Extension of embankment from Pabahakati to Kasasila hill) at Morigaon, Assam				

Name of the Faculty	Project Title	Funding Agency	Year	Amount (in Rs.)	Duration
Mr. Bhaskar Jyoti Das	Stability Analysis of Flood Protection Embankment for Proposed NEIFREM (ADB) Project at Dibrugarh, Assam				
Mr. Bhaskar Jyoti Das	Geotechnical Investigation for proposed North eastern integrated flood and river erosion management (NEIFREM) project at project sites of Pasighat, Roing, Miao, Doimukh and Daporijog in Arunachal Pradesh				
Mr. Bhaskar Jyoti Das	State Technical Agency (STA), Prime Minister Gram Sadak Yojana (PMGSY). STA is involved in the scrutiny of Detailed Project Reports and Monitoring as per requirement for the roads being proposed to be taken up by the Assam State Public Works Department under PMGSY scheme,				

Name of the Faculty	Project Title	Funding Agency	Year	Amount (in Rs.)	Duration
	MoRD, Govt. of India,				
Mr. Bhaskar Jyoti Das	Detailed soil investigation report of proposed Nalbari Engineering College, Government of Assam				
Mr. Bhaskar Jyoti Das	Detailed soil investigation report of proposed Udaguri Engineering College, Government of Assam				
Mr. Bhaskar Jyoti Das	Detailed soil investigation report of proposed Nagaon Engineering College, Government of Assam				
Mr. Bhaskar Jyoti Das	Geotechnical and Geological investigation at Tenga Dam, NEEPCO, Arunachal Pradesh				
Mr. Bhaskar Jyoti Das	Geotechnical and Geological investigation at Bishom Dam, NEEPCO, Arunachal Pradesh.				

Name of the Faculty	Project Title	Funding Agency	Year	Amount (in Rs.)	Duration
Mr. Bhaskar Jyoti Das	Geotechnical investigation of proposed 100 bedded hospital at Naharlagun, Arunachal Pradesh tested on behalf of HSCC (India) Ltd				
Mr. Bhaskar Jyoti Das	Geotechnical Investigation for proposed 1st CNG station at Dibrugarh Town, Assam tested on behalf of Assam Gas Company Limited (AGCL), Duliajan				
Mr. Bhaskar Jyoti Das	Field compaction test for 132/33 kV substation at Seppa, Arunachal Pradesh on behalf of POWERGRID.				
Mr. Bhaskar Jyoti Das	Field compaction test for 132/33 kV substation at Pasighat, Arunachal Pradesh on behalf of POWERGRID				
Mr. Bhaskar Jyoti Das	Geotechnical investigation for proposed multistoried Building at Haflong tested on behalf of Executive Engineer (Agri),				

Name of the Faculty	Project Title	Funding Agency	Year	Amount (in Rs.)	Duration
	Dima Hassao Division, Haflong				
Mr. Bhaskar Jyoti Das	Determination of Bearing Capacity of Soil at AGCL Industrial Area, Duliajan, Assam				
Mr. Bhaskar Jyoti Das	Geotechnical investigation for proposed development of Integrated Check Post at Dawki (Meghalaya) along Indo-Bangladesh Border tested on behalf of RITES Limited				
Mr. Bhaskar Jyoti Das	Geotechnical Investigation for Sewage Treatment Plant, Assam Rifles at Jorhat, Assam, Tested on behalf of NPCC, GoI Enterprise				
Mr. Bhaskar Jyoti Das	Geotechnical Investigations for MR-Accommodation for 3 Workshop, Assam Rifles Rifles at Jorhat, Assam, Tested on behalf of NPCC, GoI Enterprise				
Mr. Bhaskar Jyoti Das	Slope stability analysis of site located at Devkota Nagar, West				

Name of the Faculty	Project Title	Funding Agency	Year	Amount (in Rs.)	Duration
	BOragaon, Maligaon, Guwahati for Mr Rabi Sapkota				
Mr. Bhaskar Jyoti Das	Geotechnical investigation for the construction of proposed Pragjyoti Textile Park at Sipajhar, Darrang, Assam				

Faculty Performance Appraisal and Development System (FPADS) (30)

A well-defined system for faculty appraisal for all the assessment years (10)

Performance-based Appraisal System (PBAS)

All the regular faculties of the department of civil engineering need to fill up a form as a part of annual self-assessment for performance-based appraisal system. The faculties fill up the details asked in the form such as academic staff college orientation, refresher courses attended during the year and along with his/her academic and professional achievements. Principal then prepares an Annual Confidential Report (ACR) and sends it to the state government for necessary actions. Promotions, increments are related to this Performance based appraisal data. Fig shows the format of the PBAS-Self Assessment form.

Fig. Format of the annual self-assessment for performance-based appraisal system (PBAS)

Sharing of achievement of faculties with the stakeholders through Aadharshila
Faculty members of civil engineering department of Assam Engineering College go through a unique way of sharing achievements with the stakeholders of the department. At the beginning of every calendar year, in the month of January, the performance of the faculties in terms of the events organized/participated, conference attended, list of publications and any other activities involved during the last year is collected by the department. and is published in the departmental annual newsletter named “Aadharshila”. The newsletter is then distributed among all the internal and external stakeholders. It is also published online in the departmental website and is available for public also.

Implementation and effectiveness (20)

Performance-based Appraisal System (PBAS)

During promotion of any faculty, the PBAS becomes instrumental. However, in unfavourable cases, a particular faculty may also receive a warning from the government of Assam and in extreme cases may have to face punitive measure.

Sharing of achievement of faculties with the stakeholders through Aadharshila

This procedure was started way back in the year of 2013 only and is being followed ever since. The achievement of the faculties as well as the department are reflected in the newsletter, which is also available online. Through the newsletter, the stakeholders get an opportunity to learn about various activities of the department and interaction with the outside world. This system of publishing the achievements of the faculties creates a healthy atmosphere of constructive competitiveness.

Visiting/Adjunct/Emeritus Faculty etc. (10)

Retired faculty

Name of faculty	Association with the Institution	Date of joining	Interaction per year (hours)	Total years of interaction	Total hours
Dr. Indira Baruah Gogoi	2016	01/03/2016	50+	2.2	110+

Guest faculty

Name of faculty	Association with the Institution	Date of joining	Interaction per year (hours)	Total years of interaction	Total hours
Mr. Prasenjit Saha	2013	01/08/2013	50+	5	250+
Ms. Mitali Mandal	2015	01/08/2015	50+	3	150+
Mrs. Rhitwika Barman	2016	08/01/2016	50+	2.5	125+
Mrs. Anindita Bhattacharjya	2017	01/03/2017	50+	1.2	60+

Criterion 6	Facilities and Technical Support	80
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6. FACILITIES AND TECHNICAL SUPPORT (80)

Adequate and well-equipped laboratories, and technical manpower (30)

Sr. No	Name of the Laboratory	No. of students per Setup (Batch Size)	Name of the Important equipment	Weekly utilization status (all the courses for which the lab is utilized)	Technical Manpower support		
					Name of the technical staff	Designation	Qualification
1.	Transportation Engineering	12	<ul style="list-style-type: none"> Aggregate Impact Value apparatus Crushing Value of Aggregates apparatus Los Angeles Abrasion apparatus Bitumen Penetration test apparatus Ring and Ball apparatus Pensky-Martens apparatus Saybolt Viscometer 	12 hrs	Jogesh Das	Scientific Assistant	B.Sc (Certified from NITTTR, Kolkata)

Sr. No	Name of the Laboratory	No. of students per Setup (Batch Size)	Name of the Important equipment	Weekly utilization status (all the courses for which the lab is utilized)	Technical Manpower support		
					Name of the technical staff	Designation	Qualification
2.	Geotechnical Engineering	4	<ul style="list-style-type: none"> • Consolidation Test Apparatus • CBR Test apparatus • UCS test apparatus • Direct Shear apparatus • Casagrande apparatus and cone penetrometer • Permeability Test assembly • Proctor test apparatus (heavy+light) 	12 hrs.	Tafik Ali Dewan	Scientific Assistant	B.Sc (Certified from NITTTR, Kolkata)

Sr. No	Name of the Laboratory	No. of students per Setup (Batch Size)	Name of the Important equipment	Weekly utilization status (all the courses for which the lab is utilized)	Technical Manpower support		
					Name of the technical staff	Designation	Qualification
3.	Hydraulics Lab	7	<ul style="list-style-type: none"> • Reynold's apparatus • Pipe friction apparatus (Stand pipe and Bench model) • Orifice-meter • Venturimeter • Jet impact apparatus 	12 hrs	Paban Bhattacharya	Junior Instructor	B.E. (Mechanical)
4.	Surveying Lab	5	<ul style="list-style-type: none"> • Theodolite • Dumpy Level • Plane Table • Clinometer • Compass • Ranging road, Level 	12 hrs	Manoj Kumar Dutta (i/c)	Junior Instructor	Graduate

Sr. No	Name of the Laboratory	No. of students per Setup (Batch Size)	Name of the Important equipment	Weekly utilization status (all the courses for which the lab is utilized)	Technical Manpower support		
					Name of the technical staff	Designation	Qualification
5.	Strength of Materials Lab	3	<ul style="list-style-type: none"> • Universal Testing Machine • Compression Testing Machine • Vicat Apparatus • Flexural Testing Machine • Concrete Mixer • Vibrating table • Mortar mixing machine • Humidity 	12 hours (for regular classes) + 12 hours (for project/research work) + 12 hours for consultancy work	Niren Ch. Baishya	Scientific Assistant	M.Sc in IT (Certified from NITTTR, Kolkata)

Sr. No	Name of the Laboratory	No. of students per Setup (Batch Size)	Name of the Important equipment	Weekly utilization status (all the courses for which the lab is utilized)	Technical Manpower support		
					Name of the technical staff	Designation	Qualification
6.	Engineering Geology Lab	25	<ul style="list-style-type: none"> Petrologica l Nicroscope Trinocular Polarizing microscope with Microphotographic equipment "Classico" Moh's Hardness Scale (Box) and Streakplatr e Clinometer compass GPS device Structural 	12 hrs	Anindita Bhattacharyya (i/c)	Guest Lecturer	M.Sc in Geological Science
7.	Environmental Engineering Lab	7	<ul style="list-style-type: none"> BOD Incubator Open Reflux Turbidity meter pH meter Conductivi 	12 hrs	Nimita Devi	Scientific Assistant	B.Sc (Certified from NITTTR, Kolkata)

Sr. No	Name of the Laboratory	No. of students per Setup (Batch Size)	Name of the Important equipment	Weekly utilization status (all the courses for which the lab is utilized)	Technical Manpower support		
					Name of the technical staff	Designation	Qualification
8.	CAD Lab	2	<ul style="list-style-type: none"> • Geo-slope • MIC • Arc-GIS • SAP • ANSYS 		Prasenjit Saha (i/c)	Guest Lecturer	B.E. (Electronics and Communication)

Table B.6.1

Additional facilities created for improving the quality of learning experience in laboratories (25)

Sr. No	Facility Name	Details	Reason(s) for creating facility	Utilization	Areas in which students are expected to have enhanced learning	Relevance to POs/PSOs
1	Wifi facility	24×7 wifi facility is available inside every laboratory	To help the students to access the internet for clearance of any kind of doubt or watching the procedures of the experiments in video	Used by the students in while inside the laboratory	<ul style="list-style-type: none"> ✓ Better understanding of the test performed ✓ Ability to compare the results with other data ✓ Acquittance with the state of the 	PO-5 (Modern tool usage)

Sr. No	Facility Name	Details	Reason(s) for creating facility	Utilization	Areas in which students are expected to have enhanced learning	Relevance to POs/PSOs
2	Sitting arrangements and black boards	The facility to sit and discuss and carry out the analysis of results after the lab experiments	To help the students analyze the results and find out the conclusion or any kind of error immediately after the tests	Used by the students as well as faculties after and before the experiments	<ul style="list-style-type: none"> ✓ Ability to interpret results and draw conclusion ✓ Ability to review various errors while conducting the experiments 	PO-9 (Individual and Team work)
3	Lab Manuals	The procedure and details of the apparatus used in the experiments are provided beforehand to the students	To help the students understand the apparatus and the theory behind the experiments and to perform the test	Used by the students in every laboratory class	<ul style="list-style-type: none"> ✓ Better understanding of the apparatus ✓ Following of exact test procedures ✓ Knowledge of the theory behind the test 	PO-1 (Engineering Knowledge)
4	Lab Rubrics	The students are instructed to write the relevance of the importance and shortcomings in the apparatus and procedures followed in the lab	To help the students to understand why a particular test is performed and also the effect of the limitations in the lab to the results obtained	Used by the students while writing the lab report	<ul style="list-style-type: none"> ✓ Ability to predict the change in test results for any shortcoming in the test procedure ✓ Ability to review the test results to find out the limitations in the apparatus/tools used ✓ Ability to relate the consequence of the test protocols to real 	PO-4 (Conduct investigations of complex problems)

Table B.6.2

Laboratories: Maintenance and overall ambience (10)

All the laboratories in the Department of Civil Engineering, Assam Engineering College are well equipped with state of the art equipments and facilities for conducting cutting edge research works as well laboratory practice for the students and carrying out consultancy works. All the laboratories are spacious enough for the available equipments and thus help in maintaining a healthy environment even during the lab classes. All the equipments are regularly checked by the technical staff and faculty in charge. Machineries are greased at a regular interval. The laboratories are cleaned daily and have provision for sufficient ventilation as well as maximum utilization of sunlight. Each of the laboratory has a faculty in charge, technical assistant and lab bearers, who work in resonance for the overall development of the laboratories. The laboratories are always open to the enthusiastic students who can come with their curiosity and doubts. Overall, the ambience is very positive and help the department grow in a faster rate.

Project laboratory (5)

The project laboratories/equipments co-exist with the regular laboratories only. The modern state of the art apparatus and tools are used for the research purpose by both post graduates and research scholars. The sponsored research works are also carried out here and are regularly monitored by the faculty in charge.

The details of the equipments are mentioned below-

Sr. No.	Name of the Laboratory	Equipment/Software Name
1.	Transportation Engineering	<ul style="list-style-type: none">• Wheel testing apparatus• Wheel rut shaper• Mastic Asphalt Test Machine• Asphalt Mixture Density Meter

Sr. No.	Name of the Laboratory	Equipment/Software Name
2.	Geotechnical Engineering	<ul style="list-style-type: none"> • Drop cone test apparatus • Electrical Resistivity apparatus • Large Direct Shear apparatus • Static Cone Penetrometer • Point Load Apparatus • Triaxial test apparatus (Soil and Rock)
3.	Hydraulics Lab	<ul style="list-style-type: none"> • Eco-sounder • Digital Velocity meter • Automatic weather station
5.	Strength of Materials Lab	<ul style="list-style-type: none"> • Rebound Hammer • Ultrasonic Pulse Velocity meter • Rebar locator

Table B.6.4

Safety measures in laboratories (10)

Sr. No.	Name of the Laboratory	Safety measures
1.	Transportation Engineering	Gloves, Fire extinguishers, Exhaust fan, Masks, Apron, Medical Kit, Glasses
2.	Geotechnical Engineering	Gloves, Fire extinguishers, Exhaust fan, Masks, Apron, Medical Kit, Glasses
3.	Hydraulics Lab	Gloves, Fire extinguishers, Exhaust fan, Masks, Apron, Medical Kit, Glasses
4.	Surveying Lab	Hats, Medical Kit, Safety jacket
5.	Strength of Materials Lab	Gloves, Fire extinguishers, Exhaust fan, Masks, Apron, Safety Helmet, Medical Kit
6.	Engineering Geology Lab	Gloves, Medical Kit
7.	Environmental Engineering Lab	Gloves, Fire extinguishers, Exhaust fan, Masks, Apron, Medical Kit, Glasses
8.	CAD Lab	Quick Heal Antivirus

Table B.6.5

Criterion 7	Continuous Improvement	50
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7. CONTINUOUS IMPROVEMENT (50)

Actions taken based on the results of evaluation of each of the POs & PSOs (20)

PO-PSO attainment for the batches 2011-15 and 2012-16 are also computed (ref. Annexure B) and overall outcome is shown below.

Summary of PO and PSO attainment

Batch	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
2011-15	2.22	1.89	1.67	1.57	1.51	1.57	1.58	1.65	1.90	1.89	1.39	1.82	1.69	1.92	1.33
2012-16	2.22	1.97	1.72	1.57	1.54	1.56	1.60	1.66	1.88	1.88	1.42	1.78	1.74	1.95	1.41
2013-17	2.24	1.90	1.71	1.60	1.55	1.58	1.67	1.68	1.96	1.90	1.39	1.90	1.69	1.92	1.37
Average in last 3 batches	2.23	1.92	1.70	1.58	1.53	1.57	1.62	1.66	1.92	1.89	1.40	1.83	1.71	1.93	1.37
Target Level	1.75	1.75	1.75	1.75	1.75	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.75	1.75	1.75

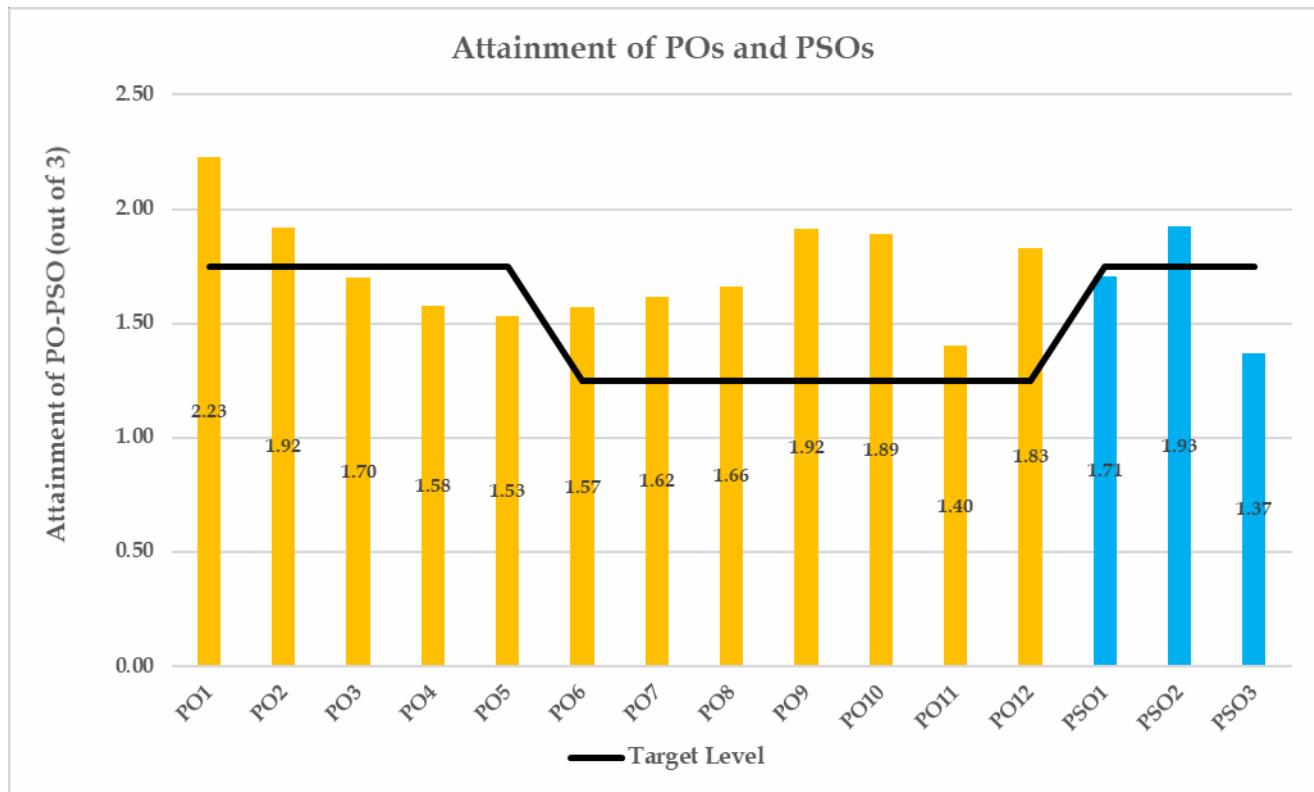


Fig. Average attainment of PO-PSO for the last three batches

POs & PSOs Attainment Levels and Actions for improvement - 2017-18

POs	Target Level	Attainment Level	Observations
PO1: Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.			
PO1	1.75	2.23	Target achieved
Action 1:			
PO2: 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.			
PO2	1.75	1.92	Target achieved
Action 1:			
PO3: 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.			
PO3	1.75	1.70	Target not achieved
Action 1: More society beneficial projects are carried out			
PO4: 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.			
PO4	1.75	1.58	Target not achieved
Action 1: More project works which require design of experiments, analysis and interpretation of data are carried out			
PO5: 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.			
PO5	1.75	1.53	Target not achieved
Action 1: Two-day Workshop on "Computational Methods in Civil Engineering" on 22nd and 23rd February, 2018 under TEQIP-III for B.E. 6th semester onwards students			

PO6: 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.

PO6	1.25	1.57	Target achieved
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Action 1:

PO7: 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.

PO7	1.25	1.62	Target achieved
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Action 1:

PO8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice

PO8	1.25	1.66	Target achieved
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Action 1:

PO9: Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO9	1.25	1.92	Target achieved
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Action 1:

POs	Target Level	Attainment Level	Observations
PO10: 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.			
PO10	1.25	1.89	Target achieved
Action 1:			
PO11: 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.			
PO11	1.25	1.40	Target achieved
Action 1:			
PO12: 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.			
PO12	1.25	1.83	Target achieved
Action 1:			
Similar information is to be provided for PSOs			
PSOs	Target Level	Attainment Level	Observations
PSO1: Challenges in Civil Engineering: Review, analyse and design projects as per the emerging engineering needs of the globe in general and that of North East India in particular.			
PSO1	1.75	1.71	Target not achieved
Action 1: One day Seminar on "Civil Engineering challenges in North East India" for B.E. 4 th semester students on 27 th February, 2018			
PSO2: Industry readiness: Prepare, practice different soft skills and civil Engineering technical skills to cater to contemporary needs.			
PSO2	1.75	1.93	Target achieved
Action 1:			
PSO3: Critical thinking: Recognize, evaluate and prepare problem specific solutions to any novel state of the art Civil Engineering problems that require critical thinking.			
PSO3	1.75	1.37	Target not achieved

Action 1: GATE coaching classes have been started for the B.E. 6th semester students of the department from 12th March, 2018 by the TEQIP faculties.

Table B.7.1

Academic Audit and actions taken thereof during the period of Assessment (10)

The department of Civil Engineering has separate committees to take care of various academic issues and to take necessary actions. The members of the committee sit together to discuss the issues and the frequency of meeting varies with the type of tasks assigned to the committee. The roles and structures of all the committees have been shown in the following table-

Sl.	Committee Name	Roles of the members	Structure of the committee
1	Academic Advisory Committee	<ul style="list-style-type: none"> Advise on different academic issues of the department Help in preparation of Vision-Mission-PEOs-PSOs 	6 nos. HoD + Academicians from prominent institutes+ Regional leaders from industry
2	Project-I committee	<ul style="list-style-type: none"> Allotment of projects Ensure evaluation as per rubric Evaluation of project quality and best project award Organizing Project Exhibition 	4 nos. (2 senior faculties+2 junior faculties) all from different specialization
3	Project-II committee	<ul style="list-style-type: none"> Allotment of projects Ensure evaluation as per rubric Evaluation of project quality and best project award 	4 nos. (3 from the specialization Structural Engg.+ 1 other specialization)
4	Summer Training committee	<ul style="list-style-type: none"> Ensure internships/trainings Track training details Ensure proper evaluation of as per rubric 	4 nos. (2 senior faculties+2 junior faculties)
5	Faculty Appraisal Committee	<ul style="list-style-type: none"> Look after the annual faculty appraisal system Ensure smoothness of the system Take corrective measures 	5 nos. (HoD + 4 senior faculties)
6	Feedback Analysis Committee	<ul style="list-style-type: none"> Ensure proper collection of feedbacks at the end of the courses Analysis of the same Take corrective measures 	4 nos. (HoD + 2 senior faculties+1 Junior faculty)
7	Placement Committee	<ul style="list-style-type: none"> Help in improving on-campus drive Ensure enhanced placement 	5 nos. (4 senior faculties+T&P cell coordinator)

Sl.	Committee Name	Roles of the members	Structure of the committee
8	CO review committee	<ul style="list-style-type: none"> Organize supportive events Scrutiny of Course Outcomes Review of attainment of COs Actions taken against deficiency 	4 nos. (2 senior faculties+2 junior faculties)
9	PO-PSO review committee	<ul style="list-style-type: none"> Evaluation of PO-PSO attainment Review of attainment of PO/PSOs Actions taken against deficiency 	4 nos. (2 senior faculties+2 junior faculties)
10	Finance committee	<ul style="list-style-type: none"> Budget allocation for laboratories and other works Improve the facilities of the laboratories 	4 nos. (HoD+2 senior faculties+2 junior faculty)
11	Mentoring Committee	<ul style="list-style-type: none"> Allotment of students under different mentors Ensure mentor meetings and interactions Collect of student data and ensuring entry of the same in soft copies 	4 nos. (2 senior faculties+2 junior faculties)
12	GATE committee	<ul style="list-style-type: none"> Organize GATE classes Ensure higher student appearance in GATE Ensure enhanced performance in GATE Collect GATE results and analyse 	5 nos. (HoD+ 4 junior faculties)

Table B.7.2

Improvement in Placement, Higher Studies and Entrepreneurship (10)

Item	CAYm1 (2016-17) YG: 2017	CAYm2 (2015-16) YG: 2016	CAYm3 (2014-15) YG: 2015
Total No. of Final Year Students (N)	99	97	100
No. of students placed in companies or Government Sector (x)	17	43	43
No. of students admitted to higher studies with valid qualifying scores (GATE or equivalent State or National Level Tests, GRE, GMAT etc.) (y)	38	27	31
No. of students turned entrepreneur in engineering/technology (z)	1	3	1
$x + y + z =$	56	73	75

Improvement in the quality of students admitted to the program (10)

Item	CAY (2017-18) YG: 2021	CAYm1 (2016-17) YG: 2020	CAYm2 (2015-16) YG: 2019
National Level Entrance Examination (Name of the Entrance Examination)	No. of Students admitted	-	-
	Opening Score/Rank	-	-
	Closing Score/Rank	-	-
State/University/Level Entrance Examination/Others (Combined Entrance Examination of 300 marks)	No. of Students admitted	89	89
	Opening Score/Rank	Score: 250	Score: 180
	Closing Score/Rank	Score: 35	Score: 82
Name of the Entrance Examination for Lateral Entry or lateral entry details (Joint Lateral Entrance Examination of 400 marks)	No. of Students admitted	12	9
	Opening Score/Rank	Score: 205	Score: 179
	Closing Score/Rank	Score: 171	Score: 158
Average CBSE/Any other Board Result of admitted students (Physics, Chemistry & Maths)	75.5	75.6	76.1

Table B.7.4

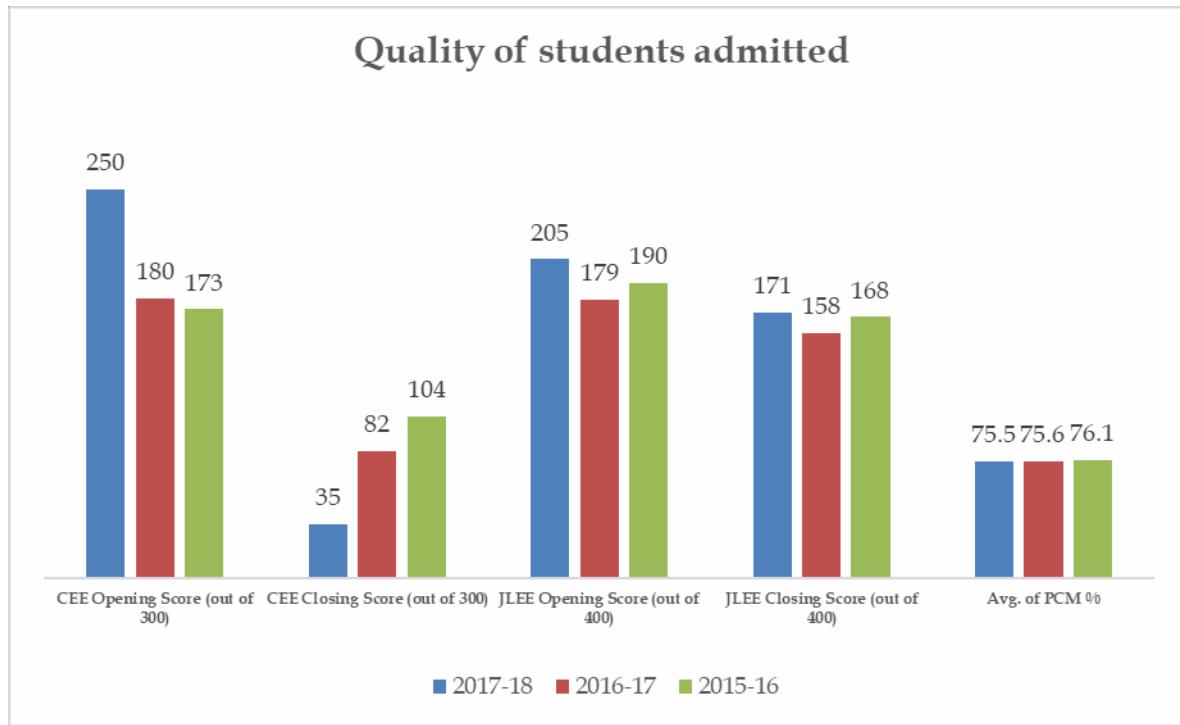


Fig. B.7.4

Criterion 8	First Year Academics	50
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8. FIRST YEAR ACADEMICS (50)

First Year Student-Faculty Ratio (FYSFR) (5)

Assessment = $(5 \times 15) / \text{Average FYSFR}$ (Limited to Max. 5)

Data for first year courses to calculate the FYSFR:

Year	Number of students (approved intake strength)	Number of faculty members (considering fractional load)	FYSFR
CAY (2017-18)	420	19.32	21.74
CAYm1 (2016-17)	420	22.87	18.36
CAYm2 (2015-16)	420	24.52	17.13
Average		19.08	
Assessment= $(5 \times 15) / \text{Average FYSFR}$ (Limited to Max. 5)		3.93	

Table B.8.1

Qualification of Faculty Teaching First Year Common Courses (5)

Assessment of qualification = $(5x + 3y) / RF$, x = Number of Regular Faculty with Ph.D, y = Number of Regular Faculty with Post-graduate qualification RF = Number of faculty members required as per SFR of 15:1, Faculty definition as defined in 5.1

Year	x	y	RF	Assessment of faculty qualification $(5x + 3y) / RF$
CAY (2017-18)	19	22	28	5.75
CAYm1 (2016-17)	22	23	28	6.39
CAYm2 (2015-16)	22	24	28	6.50
Average Assessment				6.21

Table B.8.2

First Year Academic Performance (10)

Academic Performance	CAY (2017-18)	CAYm1 (2016-17)	CAYm2 (2015-16)
Mean of CGPA or Mean Percentage of all successful students (X)	-	58.21	57.97
Total no. of successful students (Y)	-	85	89
Total no. of students appeared in the examination (Z)	-	85	89
API = x* (Y/Z)	-	58.21	57.97
Average API = (AP1 + AP2 + AP3)/3	$(58.21+57.97)/2= 58.09$		

Table B.8.3

Attainment of Course Outcomes of first year courses (10)

Describe the assessment processes used to gather the data upon which the evaluation of Course Outcomes of first year is done (5)

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 % of students scoring more than the set attainment level of the subjects. The % of students scoring more than the attainment level is taken as CO outcome of the course and is expressed in terms of %. The attainment level is different for all the courses. 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.8.4.

Record the attainment of Course Outcomes of all first-year courses (5)

Short Code	Long Code	Course Name	Att. Of CO (2016-2020)	Set attainment Level
1.1 TS	PH101	Engg. Physics	84.7	50
1.1 P	PH101L	Engg. Physics Lab	70.6	50
1.2 TS	CY102	Engg. Chemistry	71.8	60
1.2 P	CY102L	Engg. Chemistry Lab	100	60
1.3 TS	MA103	Mathematics-I	63.5	50
1.4 TS	CE114	Mechanics of Solids	89.4	50
1.5 TS	HU105	Technical Report Writing	88.2	50
1.6 PS	CE117	Engineering Graphics-I	78.8	50
1.7 TS	CS106	Computer Programming	82.4	50
1.7 P	CS106L	Computer Programming Lab	94.1	50
1.8 P	ME108	Workshop Practice	88.2	60
2.1 TS	PH201	Engg. Physics-II	82.4	50
2.1 P	PH201L	Engg. Physics-II Lab	78.8	50
2.2 TS	CY202	Engg. Chemistry-II	82.4	50
2.2 P	CY202L	Engg. Chemistry-II Lab	98.8	60
2.3 TS	MA203	Mathematics-II	67.1	50
2.4 TS	ME224	Engineering Mechanics I	83.5	50
2.4 P	ME224L	Engineering Mechanics I Lab	91.8	60
2.5 TS	EE245	Basic Electrical Engg. & Electronics	32.9	50
2.5 P	EE245L	Basic Electrical Engg. & Electronics Lab	72.9	50
2.6 TS	HU206	Sociology	71.8	50
2.7 PS	ME227	Engineering Graphics-II	85.9	50

Table B.8.4

Attainment of Program Outcomes from first year courses (20)

Indicate results of evaluation of each relevant PO and/or PSO, if applicable (15)

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 attainment of that particular PO.

CO-PO mapping of 1st year courses

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 Mechanics I	3.00	2.00	2.00	2.50	1.80	-	-	-	-	-	-	1.00
2.4 P	ME224L	Engineering Mechanics 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

Table B.8.5.1

CO-PSO mapping of 1st year courses

S1 No.	Short Code	Long Code	Course Name				PSO1	PSO2	PSO3
1	1.1 TS	PH101	Engg. Physics				-	-	-
2	1.1 P	PH101L	Engg. Physics Lab				-	-	-
3	1.2 TS	CY102	Engg. Chemistry				-	-	-
4	1.2 P	CY102L	Engg. Chemistry Lab				-	-	-
5	1.3 TS	MA103	Mathematics-I				-	-	-
6	1.4 TS	CE114	Mechanics of Solids				-	0.80	0.40

Sl No.	Short Code	Long Code	Course Name	PSO1	PSO2	PSO3
7	1.5 TS	HU105	Technical Report Writing	-		
8	1.6 PS	CE117	Engineering Graphics-I	-	1.00	0.29
9	1.7 TS	CS106	Computer Programming	-	-	-
10	1.7 P	CS106L	Computer Programming Lab	-	-	-
11	1.8 P	ME108	Workshop Practice	-	-	-
12	2.1 TS	PH201	Engg. Physics-II	-	-	-
13	2.1 P	PH201L	Engg. Physics-II Lab	-	-	-
14	2.2 TS	CY202	Engg. Chemistry-II	-	-	-
15	2.2P	CY202L	Engg. Chemistry-II Lab	-	-	-
16	2.3 TS	MA203	Mathematics-II	-	-	-
17	2.4 TS	ME224	Engineering Mechanics I	-	-	-
18	2.4 P	ME224L	Engineering Mechanics I Lab	-	-	-
19	2.5 TS	EE245	Basic Electrical Engg. & Electronics	-	-	-
20	2.5 P	EE245L	Basic Electrical Engg. & Electronics Lab	-	-	-
21	2.6 TS	HU206	Sociology	-	-	-
22	2.7 PS	ME227	Engineering Graphics-II	-	-	-

Table B.8.5.2

PO attainment for the batch 2016-17

Sl No.	Short Code	Long Code	Course Name	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
1	1.1 TS	PH101	Engg. Physics	2.12	1.69	-	-	-	-	-	-	-	-	-	-
2	1.1 P	PH101L	Engg. Physics Lab	1.41	-	-	-	-	-	-	-	-	-	-	-
3	1.2 TS	CY102	Engg. Chemistry	1.87	1.29	1.29	-	-	0.57	1.01	-	-	-	-	1.15
4	1.2 P	CY102L	Engg. Chemistry Lab	2.00	1.80	-	1.00	-	-	-	-	1.20	1.80	-	-
5	1.3 TS	MA103	Mathematics-I	1.91	1.91	0.76	0.13	-	-	-	-	0.13	-	-	1.27
6	1.4 TS	CE114	Mechanics of Solids	1.79	1.25	0.72	0.72	0.18	-	0.18	-	-	-	-	0.54
7	1.5 TS	HU105	Technical Report Writing	-	0.53	0.53	0.71	-	1.23	0.88	1.23	1.41	2.47	0.88	2.65
8	1.6 PS	CE117	Engineering Graphics-I	2.36	2.36	1.91	2.03	1.69	2.03	0.56	-	-	-	-	-
9	1.7 TS	CS106	Computer Programming	1.65	1.48	1.98	0.99	0.99	-	-	-	-	-	-	-
10	1.7 P	CS106L	Computer Programming Lab	1.88	1.69	2.26	1.13	1.13	-	-	-	-	-	-	-
11	1.8 P	ME108	Workshop Practice	1.41	1.76	-	-	-	-	-	0.88	1.41	-	-	-
12	2.1 TS	PH201	Engg. Physics-II	2.06	1.65	-	-	-	-	-	-	-	-	-	-
13	2.1 P	PH201L	Engg. Physics-II Lab	1.58	-	-	-	-	-	-	-	-	-	-	-
14	2.2 TS	CY202	Engg. Chemistry-II	2.31	1.48	1.32	0.82	-	1.48	0.82	-	1.32	1.48	-	0.82
15	2.2P	CY202L	Engg. Chemistry-II Lab	1.98	1.98	-	-	-	1.24	1.24	-	0.99	0.99	-	-
16	2.3 TS	MA203	Mathematics-II	2.01	2.01	1.34	-	-	-	-	-	-	-	-	1.34
17	2.4 TS	ME224	Engineering Mechanics I	2.51	1.67	1.67	2.09	1.50	-	-	-	-	-	-	0.84

Sl No.	Short Code	Long Code	Course Name	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
18	2.4 P	ME224L	Engineering Mechnaics I Lab	2.75	1.38	1.19	1.65	1.19	-	-	-	-	-	-	0.92
19	2.5 TS	EE245	Basic Electrical Engg. & Electronics	0.99	0.99	0.99	0.66	0.53	0.33	0.99	0.13	0.33	-	-	0.99
20	2.5 P	EE245L	Basic Electrical Engg. & Electronics Lab	2.19	2.19	-	0.73	-	-	-	-	2.19	0.51	-	2.19
21	2.6 TS	HU206	Sociology	-	0.72	-	-	-	1.44	-	1.44	0.72	0.72	0.72	2.15
22	2.7 PS	ME227	Engineering Graphics-II	2.58	2.58	0.86	-	0.34	0.52	-	-	-	-	-	0.86
			Direct attainment	1.97	1.62	1.29	1.05	0.94	1.10	0.81	0.92	1.08	1.33	0.80	1.31

Table B.8.5.3

* Direct attainment level of a PO is determined by taking average across all courses addressing that PO. Fractional numbers may be used for example 1.55.

Note: Add PSOs; if applicable

Sl No.	Short Code	Long Code	Course Name	PSO1	PSO2	PSO3
1	1.1 TS	PH101	Engg. Physics	-	-	-
2	1.1 P	PH101L	Engg. Physics Lab	-	-	-
3	1.2 TS	CY102	Engg. Chemistry	-	-	-
4	1.2 P	CY102L	Engg. Chemistry Lab	-	-	-
5	1.3 TS	MA103	Mathematics-I	-	-	-
6	1.4 TS	CE114	Mechanics of Solids	-	0.72	0.36
7	1.5 TS	HU105	Technical Report Writing	-	-	-
8	1.6 PS	CE117	Engineering Graphics-I	-	0.79	0.23
9	1.7 TS	CS106	Computer Programming	-	-	-
10	1.7 P	CS106L	Computer Programming Lab	-	-	-
11	1.8 P	ME108	Workshop Practice	-	-	-
12	2.1 TS	PH201	Engg. Physics-II	-	-	-
13	2.1 P	PH201L	Engg. Physics-II Lab	-	-	-
14	2.2 TS	CY202	Engg. Chemistry-II	-	-	-
15	2.2P	CY202L	Engg. Chemistry-II Lab	-	-	-
16	2.3 TS	MA203	Mathematics-II	-	-	-
17	2.4 TS	ME224	Engineering Mechnaics I	-	-	-
18	2.4 P	ME224L	Engineering Mechnaics I Lab	-	-	-
19	2.5 TS	EE245	Basic Electrical Engg. & Electronics	-	-	-
20	2.5 P	EE245L	Basic Electrical Engg. & Electronics Lab	-	-	-
21	2.6 TS	HU206	Sociology	-	-	-
22	2.7 PS	ME227	Engineering Graphics-II	-	0.75	0.29
			Direct attainment	-		

Table B.8.5.4

Actions taken based on the results of evaluation of relevant POs (5)

(The attainment levels by direct (student performance) are to be presented through Program level Course-PO matrix as indicated)

PO Attainment Levels and Actions for improvement - CAY - Mention for relevant POs

POs & PSOs Attainment Levels and Actions for improvement - 2017-18

POs	Target Level	Attainment Level	Observations
PO1: Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.			
PO1	1.5	1.97	Target is achieved
Action 1:			
PO2: 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.			
PO2	1.5	1.62	Target is achieved
Action 1:			
PO3: 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.			
PO3	1.5	1.29	Not many subjects will contribute to this PO at first year level
Action 1:			
PO4: 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.			
PO4	1.5	1.05	Not many subjects will contribute to this PO at first year level
Action 1:			
PO5: 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.			
PO5	1.5	0.94	This PO will be addressed more in higher semesters
Action 1:			

PO6: 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.

PO6	1.5	1.10	Not many subjects will contribute to this PO at first year level
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Action 1:

PO7: 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.

PO7	1.5	0.81	Not many subjects will contribute to this PO at first year level
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Action 1:

PO8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice

PO8	1.5	0.92	Not many subjects will contribute to this PO at first year level
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Action 1:

PO9: Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO9	1.5	1.08	Not many subjects will contribute to this PO at first year level
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Action 1:

POs	Target Level	Attainment Level	Observations
PO10: 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.			
PO10	1.5	1.33	Not many subjects will contribute to this PO at first year level
Action 1:			
PO11: 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.			
PO11	1.5	0.80	Not many subjects will contribute to this PO at first year level
Action 1:			
PO12: 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.			
PO12	1.5	1.31	Not many subjects will contribute to this PO at first year level
Action 1:			
Similar information is provided for PSOs			
PSOs	Target Level	Attainment Level	Observations
PSO1: Challenges in Civil Engineering: Review, analyse and design projects as per the emerging engineering needs of the globe in general and that of North East India in particular.			
PSO1	1.5	-	Not many subjects will contribute to this PSO at first year level
Action 1:			
PSO2: Industry readiness: Prepare, practice different soft skills and civil Engineering technical skills to cater to contemporary needs.			
PSO2	1.5	0.75	Not many subjects will contribute to this PSO at first year level
Action 1:			
PSO3: Critical thinking: Recognize, evaluate and prepare problem specific solutions to any novel state of the art Civil Engineering problems that require critical thinking.			
PSO3	1.5	0.29	Not many subjects will contribute to this PSO at first year level
Action 1:			

Criterion 9	Student Support Systems	50
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9. STUDENT SUPPORT SYSTEMS (50)

Mentoring system to help at individual level (5)

Type of mentoring:

The institute has mentoring system at department level. The B.E. students are mentored by the faculty members of the respective department. The students are continuously monitored by the mentor in his academic and extra-curricular pursuits. The mentors also do the job of information dissemination to the mentees by keeping in contact with their mentees constantly. The mentors are responsible for the information collection regarding their mentees whenever the department needs some extra information regarding the students. The subject teachers of the department are instructed to inform the mentors, regarding the attendance and performance of the mentees. Any alarming condition is preventively taken care of by the mentors. If the mentors find the matter to be not conclusive at his/her end, then the matter is forwarded to the senior professors/mentors or the HOD. If required the parents/guardians of the mentees are also contacted for discussion regarding the attendance and performance related issues.

The scope of the faculty members in student mentoring is set as mentioned below-

1. To monitor his/her attendance in class and if found irregular discuss the problems with the student and try to find out the solutions.
2. To monitor his/her academic performance in class and if found non-satisfactory, advise the student for improvement. If necessary arrange for remedial classes for the weak subjects in consultation with TEQIP coordinator.
3. Can guide them to do student research project with innovative ideas, write research papers, encourage them to join different national level competitions, encourage and help them to appear for competitive examinations like GATE, UPSC exams etc.
4. To motivate for co-curricular activities like development of different types of hobbies, membership of different clubs, social activities like helping unprivileged

and differently abled sections of the society, environmental protection, blood donation, social services etc.

5. Motivate the students to maintain a healthy life by involving themselves with any kind of physical sports and taking balance diet.
6. Ultimately help them to grow as a responsible citizen of the nation and a good human being.

Number of students per mentor: Every faculty has been allotted 11/12 nos. of students under his/her mentorship.

Frequency of meeting: The frequency of meeting between a mentor and the student is not more than 2 weeks. Apart from the regular meetings, the mentees meet the mentors whenever there is a need for any guidance and counselling, thus enabling the mentors to show the way forward.

Feedback analysis and reward /corrective measures taken, if any (10)

Feedback is also collected from the students at department level.

Civil Engineering department

Feedback collected from the students in the department of Civil Engineering are of two types. The first one is on the course and second one is on the teacher. The course end survey is merged with the first type of feedback and students are asked to write on the contents of the course, whether the students are confident on the COs of the course, what did they like most about the course, what did they hate most about the course and any suggestion for the junior batch. The course instructor then evaluates the feedback forms himself and answers the students if any is required. However, the second feedback form, which is on the course instructor are collected anonymously from the students and the course instructor can't see his/her feedbacks directly. The HoD goes through the feedbacks and take necessary action, if any is required.

DEPARTMENT OF CIVIL ENGINEERING
ASSAM ENGINEERING COLLEGE, GUWAHATI-13

Subject Name: _____
Subject Code: _____
Name of teacher: _____

Performance Appraisal of Class Room Teaching

Dear student,
Please tick the appropriate box honestly. Your input means a lot to improve the quality of class room teaching.

Sl. No.	Element	Rating Scale	Remarks
1	Actual/Objective of each lesson made clear	0 1 2 3 4	
2	Teaching techniques are effective	0 1 2 3 4	
3	Concepts and principles illustrated with concrete examples	0 1 2 3 4	
4	Active student performance ensured in the class	0 1 2 3 4	
5	Question posed at proper levels	0 1 2 3 4	
6	Students free to raise doubts/queries	0 1 2 3 4	
7	Communication effective	0 1 2 3 4	
8	Chalkboard/Presentation work systematic	0 1 2 3 4	
9	Student interest maintained	0 1 2 3 4	
10	Prepares link up of main points at the end of each class	0 1 2 3 4	
11	Planning and preparation for the class evident	0 1 2 3 4	
12	Confidence in subject matter evident	0 1 2 3 4	
13	Homework/Assignments evaluated and returned within reasonable time	0 1 2 3 4	
14	Engages class punctually	0 1 2 3 4	

Date: _____ Semester: _____

Fig. 9.2.1 Sample Feedback survey sheet on teacher

Mechanical Engineering Department

Department of Mechanical Engineering has a system of taking feedback from students about the course and the concerned teacher. The sample feedback form is attached here under. The concerned teacher can improve his teaching-learning capability by going through the feedback received from the students. The teacher will be able to know the topics in which the students have difficulty in understanding and require more elaborate and further discussions.

Course End Survey
Transportation Engineering Laboratory-II (CE 613 L)
B.E. 6th Semester
Department of Civil Engineering
Assam Engineering College, Guwahati
Date: 29th April, 2018

Roll No. _____ Name: _____

Dear student,
This questionnaire is prepared to test the quality of the course- Transportation Engineering Laboratory-II (CE 613 L). Your input means a lot. Please fill up very frankly and let us know your confidence in the following outcomes after attending the course.
On a scale of 0 to 100 please write down your confidence level.
100=Totally confident, 0=No confidence at all

Course Objective	After attending this course, you are able to-	Confidence Level (0 to 100)
CO 1	Justify why a particular test is required for biomass (i.e. you know why to perform the test)	
CO 2	Predict in what type of situation or condition the material should be used by looking at the results	
CO 3	Predict the change in test results for any shortcoming in the test procedure	
CO 4	Review the test results to find out the limitations in the apparatus/tools used	
CO 5	Judge different results of the test and choose the correct ones	
CO 6	Relate the consequence of the test protocols to real life situation	

1. What did you like most about this course?

2. What did you not like at all about this course?

3. What will you suggest to improve the outcome of this course for the junior batch?

Fig. 9.2.2 Sample course end survey form

MECHANICAL ENGINEERING DEPARTMENT
ASSAM ENGINEERING COLLEGE, GUWAHATI-13
FEEDBACK FOR COURSE EVALUATION

COURSE NAME: (ME 427) Materials Science (wef 01/01/2018 to 10/05/2018)

INSTRUCTIONS:
1. Please respond to each statement carefully.
2. Do not write your name and roll number.
3. Your independent and well-considered responses will contribute to the continuous effort of the teacher to improve teaching and learning process.
4. Put a tick mark in the appropriate cell.

1. About the teacher of the course

	Strongly Disagree (0)	Disagree (1)	Neutral (2)	Agree (3)	Strongly Agree (4)
1. Overall, the teacher was excellent.					
2. The teacher was very prepared for the class.					
3. The concepts were explained properly.					
4. Concepts were had regularly as per time.					
5. The teacher was audible and understandable.					
6. Faculty were very/visually presentations were of good quality.					
7. Topics were covered in a logical sequence.					
8. The coverage of the course was complete.					
9. Questions and discussions were encouraged.					
10. The basic steps and concepts of the topics/problems were explained clearly.					

2. About the course

	Strongly Disagree (0)	Disagree (1)	Neutral (2)	Agree (3)	Strongly Agree (4)
1. Text books were appropriate for the course					
2. Reference books available in the library and provided good support to the course					
3. General feedback/progress along with course plan was provided at the beginning of the course.					
4. The course load was very heavy.					
5. The course was highly enjoyable.					

3. MENTION STRONG AND WEAK POINTS OF THE COURSE/INSTRUCTIONS: (write overall)
4. Any suggestion: (write overall)

Fig. 9.2.3 Sample Feedback form of ME department

Electrical Engineering department

Two types of feedback are collected from the students in the department of Electrical Engineering that asks them to write on the contents of the course. The first form asks the students whether the laboratory facilities and the course coverage is adequate to meet their requirements for competitive examinations as well as promoting research. The course instructor then evaluates the feedback forms himself and answers the students if any is required. However, the second feedback form, which is on the course instructor are collected anonymously from the students and the course instructor can't see his/her feedbacks directly. The HoD goes through the feedbacks and take necessary action, if any is required.

**GOVERNMENT OF ASSAM
ASSAM ENGINEERING COLLEGE
ELECTRICAL AND INSTRUMENTATION ENGINEERING DEPARTMENT
Jalukbari, Guwahati-13, ASSAM**

STUDENT FEEDBACK FORM

1. Name: _____ 2. Roll No. _____
3. Year of Admission: _____
4. Please rate the following according to the scale given below (✓ mark)
1. Strongly Disagree 2. Disagree
3. Somewhat Agree 4. Agree
5. Strongly Agree Not Applicable

S. No.	Items	Strongly Agree				
		Agree	Somewhat Agree	Disagree	Strongly Disagree	Not Applicable
1	Laboratory and computational facilities fulfilled the needs for undergraduate course and career.	5	4	3	2	1
2	Faculty members were available for all assistance					
3	Faculty was supportive and provided constructive guidance					
4	Faculty are competent and well abreast of the course material					
5	Questions were always encouraged in the classroom					
6	Soft skills and computational ability were enhanced through classroom teaching, project works and laboratory					
7	Lectures delivery in the class were adequate and helpful for competitive examinations					
8	Laboratory facilities were adequate to promote research					
9	Academic environment of the department was conducive and motivating towards learning					
10	Course curriculum has helped in developing communication and presentation skills					

What are the strengths of the department:

What are the weaknesses of the department:

Fig. 9.2.4 Sample course end survey form

COURSE FEEDBACK FORM

Academic year	Term	Course No.	Course Title	
0-20	20-40	40-60	60-80	80-100
1. Information on the Respondent : (Tick ✓ if Appropriate)				
1 Percentage of classes attended				
0-20	20-40	40-60	60-80	80-100
2. The expectations of the students from the course are : (Tick ✓ if Appropriate)				
A) Eligibility will have in the area of specializations				
B) Get exposed in a relevant subject				
C) Curiosity				
D) Better Employment Opportunities				
E) Competitive Course requirements				
F) Improve CGPA percentage				
3. About the Instructor : (Tick ✓ if Appropriate)				
A B C D E				
1. Coverage of syllabus				
2. Organization of the Course				
3. Emphasis on fundamentals				
4. Availability of text book/study materials				
5. Usefulness of the prescribed text book				
6. Usefulness of tests and assignments				
7. Benefit you derived from the course?				
8. Pace of the Teaching Lecture				
9. Content of the Subject				
10. Clarity of Explanations				
11. Level of Interactions				
12. Level of interest				
13. Atmosphere, conduct in the class				
Overall Rating of the Course				
A: Excellent B: Very Good C: Good D: Satisfactory E: Poor				
(Please affix the performance line and submit separately)				
Name of the student : _____ Roll No. : _____				
Percentage of classes attended				
0-20	20-40	40-60	60-80	80-100

Fig. 9.2.5 Sample feedback form on teacher

Similarly, the system is there for other departments. A few sample forms from the other departments are appended below-

Fig. 9.2.6 Feedback sheet for Chemical Engg. Dept.

Fig. 9.2.7-8 Feedback sheets for E&T Engg. Dept.

Feedback on facilities (5)

The feedback on facilities of the departments are collected at departmental level too.

Civil Engineering Department

Students give their feedbacks on the facilities available in the department. This includes all the facilities of the department such as- Classrooms, all the laboratories, drawing hall, departmental office, wifi/Internet, T&P support, mentoring system, departmental library

etc. Their suggestions to improve the particular facility is also seek and the same is assessed and taken into consideration. A sample feedback survey form of the same is shown below-

FEEDBACK ON FACILITIES		
Department of Civil Engineering Assam Engineering College		
Particular	Marks on available facilities (out of 10)	Suggestion to improve the facility
Classrooms		
Environmental Engg. Lab		
Transportation Engg. Lab		
Geotechnical Engg. Lab		
Strength of Materials Lab		
Surveying Lab		
Departmental Computer Center		
Drawing Hall		
Departmental office		
Wifi / Internet		
T&P support in Civil Engineering Department		
Mentoring system		
Departmental library		
Other: Specify		
Roll No.	Name:	
Date	Current semester	

Fig. 9.3.1 sample feedback survey sheet on facilities for CE department

Mechanical Engineering Department

The Mechanical Engineering Department has a system of taking feedback from final semester students in the form of graduate survey. Feedbacks from students are taken for facilities in the department. This include computation facility, laboratory facilities etc. Feedbacks from students are also taken for the academic environment, teachers' supportiveness etc. Department critically analyses all the feedback and improve upon these.


**GOVERNMENT OF ASSAM
ASSAM ENGINEERING COLLEGE
MECHANICAL ENGINEERING DEPARTMENT
Jalukbari, Guwahati-13, ASSAM**

STUDENT SURVEY FORM

1. Name _____	2. Roll No. _____	
3. Year of Admission _____	4. Branch _____	
5. Please rate the following according to the scale given below (1 mark)		
1. Strongly disagree 2. Disagree 3. Somewhat agree 4. Agree 5. Strongly agree Not applicable		
Sl. No.	Items	Strongly Agree Agree Somewhat Agree Disagree Strongly Disagree Not Applicable
1	a) Laboratory and computational facilities fulfilled the needs for undergraduate course and career	5 4 3 2 1
2	b) Faculty members were available for all assistance	5 4 3 2 1
3	c) Faculty was supportive and provided constructive guidance	5 4 3 2 1
4	d) Faculties are competent and well abreast of the course materials	5 4 3 2 1
5	e) Questions were always encouraged in the classroom	5 4 3 2 1
6	f) Soft skills and computational ability were enhanced through classroom teaching, project works and laboratory	5 4 3 2 1
7	g) Lectures delivery in the class were adequate and helpful for effective assimilation	5 4 3 2 1
8	h) Laboratory facilities were adequate to promote research	5 4 3 2 1
9	i) Academic environment of the department was conducive and motivate towards learning	5 4 3 2 1
10	j) Course curriculum helped you in developing communication and presentation skills	5 4 3 2 1

6. What are the strengths of the department: _____

7. What are the weaknesses of the department: _____

Date: _____ Signature: _____

Fig. 9.3.2 sample feedback survey sheet on facilities for ME department

Similarly, the system is there for other departments.

**ASSAM ENGINEERING COLLEGE
CHEMICAL ENGINEERING DEPARTMENT
Jalukbari-781013**

**Departmental Feedback form for the Session: _____ Batch: _____

Sl No.	QUESTIONNAIRE	Poor (1)	Average (2)	Good (3)	Very Good (4)	Excellent (5)
1.	How do you rate the contents of the curriculum					
2.	Helping approach towards varied academic interests of students					
3.	Helps students in providing study material which is not readily available in the text books					
4.	Approach towards developing professional skills/career awareness					
5.	Impact of Industrial Training (as a part of curriculum)					
6.	Availability of computing facilities					
7.	Were manuals/data sheets/write-ups etc. available in the Labs?					
8.	Was lab equipment functional while you were experimenting?					
9.	Are the lab facilities adequate?					
10.	Were you given proper assistance in the Lab?					
11.	Were sufficient number of practical conducted to illustrate important topics of the course content?					

Fig. 9.3.3 sample feedback survey sheet on facilities for Chemical Engg. department

FEEDBACK ON FACILITIES
 Department of Electrical Engineering
 Assam Engineering College

Particulars	Marks on available facilities (Out of 10)	Suggestions to improve the facility
Classrooms		
Basic Electronics and Electrical Engineering Lab		
Electrical Machines Lab		
Computer Lab		
Microprocessor Lab		
Digital Electronics Lab		
Control Lab		
Power Electronics Lab		
Wifi/Internet		
Departmental Office		
T&P support in Electrical Engineering Department		
Monitoring System		
Others (Specify)		

Roll No. _____ Name: _____
 Date: _____ Current Semester: _____

Fig. 9.3.4 sample feedback survey sheet on facilities for Electrical engg department

In the Electronics and Telecommunication department, the feedback on facilities is integrated with other feedback forms.

Self-Learning (5)

Self-learning capabilities of students are enhanced through various e-learning resources facilities and computing facilities like central computing and supercomputing center and the internet infrastructure created in the institute. In addition, library facilities, multidisciplinary center, laboratories and various other facilities are accessible to the students to enhance their knowledges beyond their curriculum. Students are promoted to go through various training program outside of their curriculum to enhance their skills, curiosity and self-learning capability.

The institute provides the self-facilities mentioned in the following table

Facilities and material for the self-learning/beyond the syllabus in the department/institution
1. Central computer center
2. C-DAC Super computer center
3. Multidisciplinary Center
4. Digital library
5. Access to the journals
6. Wi-Fi enabled campus
7. NPTEL
8. Central library

In addition, various activities are conducted in the campus outside the regular teaching learning process.

Facilities for the self-learning/beyond the syllabus in the department/institution
1. Annual Technical Festival-Udvabanam
2. Debate competition
3. Conduct seminars and workshops
4. Robotics Club
5. Energy Club
6. Group Discussion
7. Mini project

8. Professional societies
9. Entrepreneurship Development Cell

Career Guidance, Training, Placement (10)

Since establishment in 1955, Assam Engineering College (AEC) graduates were in high demand in all sectors all throughout. The Training & Placement Cell (TPC) became an active functional unit of the college from the year 2002. The TPC initiated interaction with various organizations and industries to impress upon them and organize campus recruitments in AEC. Over the years the TPC has been providing opportunities to the students to prove their mettle and caliber in various areas starting from the ICT sectors to the Core industries, and they have been reasonably successful in their ventures. The TPC operates from the Multi-Disciplinary Centre (MDC) complex with its own communication set-up. Besides support from AEC authority, AEC Alumni Association, ex-AECians and present students have contributed towards the acquiring of essential gadgets and maintenance of this Cell. The TPC has been a significant and notable landmark in the history of AEC, and will continue to remain so in the coming years.

TPC also issues request letter for training for 6th semester student, which is compulsory as per syllabus, as many organisation requires a common letter issued by the training and placement cell. TPC comprises of Training and Placement Officer (TPO), Assistant Training and Placement Officer (ATO), Training and Placement Secretary (TPS) who is elected every year by the students of Assam Engineering College in the student union election, Training and Placement Faculty representative (TPFR) from respective departments, Training and Placement Coordinators (TPCor) and office support staff. They are assisted by other TP Coordinators comprising of student representatives from various disciplines.

It is not just concentrating on offering jobs to the students, it has been putting serious efforts to improve the quality of the students by organizing trainings, motivational talks, seminars, workshops, etc. through best-available experts.

TPC has the following facility:

- 5 nos. of Personal Interview Room
- 1 no. of GD Room

- 1 no. of Seminar room with a seating capacity of 100 students with adequate audio and video facility.
- 1 no. of TPO Room
- 1 no. of TPS Room
- Dining Room
- Lecture Room
- Lobby
- Reception

Career guidance including counseling for higher studies

The training cell collects Rs. 1000 each from all the students of 3rd and 4th year. This money is then utilized for organizing counseling, mock interviews, supplementary classes for placements etc. Most of such classes are taken by T.I.M.E. Pvt. Ltd. The students get huge benefits from such type of classes and boost their confidence levels to face interviews and competitive examinations.

From 12th of March, 2018, the newly engaged TEQIP-III faculties of department of Civil Engineering have started coaching for GATE among the 6th semester students of Civil Engineering department. Classes are taken every Saturday and Monday of a week and the participation of the students is good.

The campus placement records for the last four years are shown below-

2017-18												
Sl	Company	Civil	ME	EE	ChE	E&TE	CSE	IE	IPE	MCA	Total	
1	Rivigo (Passed Out)	1	0	0	0	0	0	2	0	0	3	
2	JUD Cements (P/O)	-	0	-	1	-	-	-	-	-	1	
3	Control Print (P/O)	-	0	-	0	-	-	-	-	-	0	
4	Ashok Leyland	-	3	-	-	-	-	-	-	-	3	
5	Wipro	-	0	3	-	2	2	0	-	-	7	
6	Bureau Veritas	-	-	-	-	0	0	-	-	-	0	
7	Zola Code	12	2	6	3	9	0	2	0	3	37	
8	Zaloni	-	-	-	-	0	0	-	-	-	0	
9	Concept	0	1	0	1	0	0	0	0	0	2	
10	Cummins India	-	4	-	-	-	-	-	-	-	4	
11	HUL	-	1	1	1	-	-	0	0	-	3	
12	Live Health	-	-	-	-	0	0	-	-	-	0	
13	Smartprix	-	-	-	-	0	0	-	-	0	0	

2017-18												
Sl	Company	Civil	ME	EE	ChE	E&TE	CSE	IE	IPE	MCA	Total	
14	Interview Air	-	-	-	-	1	0	-	-	-	1	
15	BPCL	3	4	-	-	-	-	-	-	-	7	
16	Gannon and Dunkerly (P/O)	1	-	-	-	-	-	-	-	-	1	
17	TASL	-	2	-	-	-	-	-	0	-	2	
18	Godrej and Boyce	-	0	-	-	-	-	-	-	-	0	
19	TCS	0	0	1	0	1	0	0	0	-	2	
20	IOCL	2	5	-	4	-	-	-	-	-	11	
21	WSP	0	0	0	-	-	-	-	-	-	0	
22	Directi	-	-	-	-	-	0	-	-	-	0	
23	Patil Group	-	-	-	-	-	-	-	-	-	0	
24	GS Lab	-	-	-	-	-	-	-	-	-	waiting	
25	ABCI (P/O)	3	-	-	-	-	-	-	-	-	3	
26	Berger Paints	-	-	-	-	-	-	-	-	-	0	
27	ITC Foods	-	0	1	-	-	-	-	-	-	1	
28	Asian Oil Services	-	-	-	-	-	-	-	-	-	waiting	
29	Oil India	2	4	2	-	-	-	-	-	-	8	
30	BPCL	-	-	-	4	-	-	-	-	-	4	
31	Geruda Power	-	-	1	-	-	-	-	-	-	1	
32	Kalpataru Power Tx		-	-	-	-	-	-	-	-	waiting	
33	MAX Cement	-	-	-	2	-	-	-	-	-	2	
34	Parking Rhino	-	-	-	-	0	4	-	-	0	4	
Branch-wise total		24	26	15	16	13	06	04	00	03	107	

2016-17												
Sl	Company	Civil	ME	EE	ChE	E&TE	CSE	IE	IPE	MCA	Total	
1	Techaxis Inc (Passed Out) (Others)	1	0	1	0	2	0	0	0	0	4	
2	OIL (Passed Out) (Core)	-	-	-	-	1	-	3	-	-	4	
3	Amazon (Passed Out) (Others)	0	0	1	1	0	1	0	0	0	3	
4	Rivigo (Passed Out) (Others)	0	0	0	1	0	0	0	0	0	1	
5	Wipro (IT)	0	0	4	0	2	0	0	0	0	6	
6	Accenture (IT)	12	14	19	9	7	1	5	0	5	72	
7	IBM (IT)	-	-	12	-	4	0	1	-	0	17	
8	Ashok Leyland (Core)	-	4	-	-	-	-	-	-	-	4	
9	Cummins India (Core)	-	2	-	-	-	-	-	-	-	2	

2016-17											
Sl	Company	Civil	ME	EE	ChE	E&TE	CSE	IE	IPE	MCA	Total
10	AIS Glass (Core)	-	0	0	-	-	-	-	-	-	0
11	Avin Networks (IT)	0	0	1	0	5	0	0	0	0	6
12	TASL(Core)		3	-	-	-	-	-	-	-	3
13	Havells India (Core)		1	2	-	-	-	-	-	-	3
14	Hindustan Unilever Ltd (Core)		1	0	-	-	-	1	-	-	2
15	OIL (Core)	1	5	1	-	2	-	-	-	-	9
16	British paints(Core)	-	-	-	2	-	-	-	-	-	2
17	Berger Paints(Core)	-	1	-	3	-	-	-	0	-	4
18	Britania Industries (Core)	-	0	0	0	-	-	-	-	-	0
19	SAP (Core)	-	-	-	-	0	-	-	-	-	0
20	Amazon (Others)	0	0	0	0	1	0	0	0	0	1
22	IOCL (Core)	-	5		4	-	-	3	-	-	12
23	Huawei (Core)	-	-	-	-	0	0	-	-	-	0
24	ITC Foods (Core)		0	0	-	-	-	-	-	-	0
25	RVNL (Core)	0	-	5	-	1	-	-	-	-	6
26	Dalmia Cements (Core)		P	P	P			P	P		P
27	Josh Technologies (Core)	-	-	-	-	0	0	-	-	0	0
28	ABCI Infrastructures (Passed Out) (Core)	5	-	-	-	-	-	-	-	-	5
29	Genpact (Others)	0	0	0	0	0	0	0	0	0	0
30	ABCI Infrastructures (current Batch) (Core)	1	--	--	-	-	-	-	-	-	1
31	Century Ply (Core)	-	-	-	2	-	-	-	-	-	3
32	Zaloni Technologies(Core)	-	-	-	-	0	0	-	-	-	0
33	WSP Parsons Brinckerhoff (Core)	0	0	0	-	-	-	-	-	-	0
34	BCPL (Core)	-	-	1	10	-	-	1	-	-	12
35	BYJU'S (Others)	0	2	3	1	1	0	0	0	0	7
36	Power Grid (Core)	-	-	3	-	-	-	-	-	-	3
37	BPCL (Core)	-	2	-	-	-	-	1	-	-	3
38	OYO Rooms (others)	0	0	0	0	0	1	0	0	0	1
39	Technowell Services Pvt Ltd. (core)	-	-	-	-	-	1	-	-	-	1
Branch-wise total		20	40	54	34	27	2	15	0	5	197

2015-16											
Sl	Company	Civil	ME	EE	ChE	E&TE	CSE	IE	IPE	MCA	Total
1	Zaloni	-	-	-	-	-	1	-	-	-	1
2	TCS	-	2	17	-	12	5	1	-	3	40
3	Torrecid	-	-	-	2	-	-	-	-	-	2
4	Godrej & B	-	0	-	-	-	-	-	-	-	0
5	Wipro	-	-	8	-	4	2	3	-	-	17
6	TNS	-	-	3	-	1	0	0	-	-	4
7	Accenture	8	16	13	10	5	2	2	0	2	58
8	Godrej Consumer Products	-	1w	0	1w	-	-	1w	-	-	3w
9	TASL	-	2	-	-	-	-	-	-	-	2
10	Eveready (Regular + Passed out)	-	1+2	-	0	-	-	-	-	-	3
11	Genpact	2	0	1	0	1	1	1	0	0	6
12	Vodafone	-	-	-	-	2	-	-	-	-	2
13	British Paint (Passed out)	-	-	-	2	-	-	-	-	-	2
14	Mu Sigma	0	0	0	0	0	0	0	0	0	0
15	BPCL	-	2	1	-	-	-	-	-	-	3
16	Patil Group (Passed out)	2	-	-	-	-	-	-	-	-	2
17	OIL	-	3	2	3	-	-	-	-	-	8
18	Huawei	-	-	-	-	0	1	-	-	-	1
19	Aristocrat Gaming	-	-	-	-	0	0	-	-	0	0
20	SAP Labs India	-	-	0	-	0	0	-	-	-	0
21	SIB n JITs Life	2w	0	0	0	0	0	0	0	1w	3w
22	Coffee De Café B	2	1w	0	0	1	0	0	0	0	3+1w
23	XL Dynamics	0	0	0	0	0	0	0	0	0	0
24	Emami	-	6	-	2	-	-	1	-	-	9
25	Power grid	-	-	3+1w	-	-	-	-	-	-	3+1w
Branch-wise total		14	31	45	19	26	12	8	0	5	160

2014-15											
Sl	Company	Civil	ME	EE	ChE	E&TE	CSE	IE	IPE	MCA	Total
1	TCS	-	1	8	-	17	3	3	-	2	34
2	IBM	2	1	7	2	4	-	-	-	-	16
3	SM GROUP	3	-	-	-	-	-	-	-	-	3
4	Tata Advanced System Ltd	-	4	-	-	-	-	-	-	-	4
5	GODREJ & B	-	0	-	-	-	-	-	-	-	0

2014-15												
Sl	Company	Civil	ME	EE	ChE	E&TE	CSE	IE	IPE	MCA	Total	
6	ZALONI	-	-	0	-	1	0	0	-	-	1	
7	L & T Info.	0	0	1	0	2	0	0	0	0	3	
8	WIPRO	-	-	6	-	3	1	1	-	2	13	
9	MAX CEMENTS	2	1	1	1	-	-	0	-	-	5	
10	Vodafone	-	-	-	-	2	-	-	-	-	2	
11	KEC	0	0	0	-	-	-	-	-	-	0	
12	Polycab	-	0	0	-	0	-	0	0	-	0	
13	ATC	1	0	1	-	-	-	-	-	-	2	
14	Premium Transmission Ltd.	-	2	-	-	-	-	-	-	-	2	
15	Ashok Leyl.	-	3	-	-	-	-	-	-	-	3	
16	SSDA	0	0	1	0	1	0	2	0	0	4	
17	Genpact	2	0	0	3	2	5	1	0	0	13	
18	Patel Engg.	8	-	-	-	-	-	-	-	-	8	
19	Sehwing Setter	-	1	-	-	-	-	-	-	-	1	
20	Coffee Day Cafe B	-	1	0	-	2	-	-	-	-	3	
21	INNOFIED Technologies	-	-	-	-	-	0	-	-	0	0	
22	Mobisoft Technologies	-	-	-	-	-	0	-	-	2	2	
23	Marico	-	0	0	-	-	-	-	-	-	0	
24	XL Dynamics	3	0	0	0	0	0	0	0	0	3	
25	Sling Infocom	-	-	-	-	0	0	-	-	7	7	
26	BPCL	-	6	2	-	-	-	-	-	-	8	
27	Signum I Technology	-	-	-	-	-	1	-	-	-	1	
28	Federal Bank	2	0	0	0	1	0	1	0	0	4	
29	Gannon Dunkerley	3	-	-	-	-	-	-	-	-	3	
30	Brigosha Technologies	-	-	-	-	-	0	-	-	-	0	
31	Future First	-	-	1	-	-	-	-	-	-	1	
32	Budget Signs	1	0	-	-	1	-	-	-	-	2	
33	Taj Cements	-	-	-	-	-	-	0	-	-	0	
Branch-wise total		27	20	27	6	36	10	8	0	13	147	

Entrepreneurship Cell (5)

The Entrepreneurship Development Cell of Assam Engineering College was set up in the year 2009 and since then it has been working under the guidance of Dr. Damodar Agarwal, HoD, Department of Electrical Engineering.

The Entrepreneurship Development Cell (EDC) of Assam Engineering College is a non-profit student organization that aims to hone, nurture as well as sprout an entrepreneurial

spirit among the students and impress upon them a subject of vital importance in the present times- 'self employment'. Keeping this agenda in mind, the cell has organized various sessions on public speaking as well as case studies, held various prestigious state level B-Plan competitions, been on many industrial tours, interacted with a lot of esteemed industrial experts and has also taken active participation in a lot of related workshops. Spurred by the continuous support of the aspirational AEC crowd, the cell now aims to bolster-up and conduct various sessions, quizzes and competitions to encourage and intrigue the like-minded people and bring them to a common platform.

Aims and Objectives of Entrepreneurship Cell

- The aims and objectives of the Cell are:
- To organize B-Plan Competitions, Lecture Seminars and Start-up Showcases.
- To encourage Students in cultivating ideas and help them to master it.
- To encourage the practical knowledge of latest trends in the world dominated by entrepreneurs.
- With the origination of the EDC-AEC from 2009, it has seen both the dark nights and beautiful days. EDC-AEC during the tenure 2015-2016, 2016-2017 and 2017-18, started to work on the grass root level of the AEC's entrepreneurship environment the following are the activities done by the cell -
- EDC-AEC started conducting weekly sessions on public speaking, brainstorming, case study, BMC model. So, as to share knowledge and help in personality development of the members of the CELL. These networking sessions revived the enthusiastic minds in college premises.
- Then EDC-AEC also arranged startup talks in the college premises in weekly and monthly basis by inviting local, especially, AECian startups and well-known entrepreneurs like Poptales, Jaabol, Eventjugaad, TechVariable. The Alumni's success story inspires the budding minds.
- EDC-AEC, under the guidance of Dr. Damodar Agarwal, executed an industrial tour in EXPORT PROMOTION INDUSTRIAL PARK, Amingaon, Guwahati-31. (2015)
- EDC-AEC also encouraged the AECians to participate in Entrepreneurial events in

the region. "Jaobol" was the winner (Best Idea) of Parivartan-2016, "Mavin" was the 2nd runner up, all from AEC.

- EDC-AEC, promotes entrepreneurship through various events throughout the academic tenure such as Creatovate (A B-plan competition), Innovation Garage etc.
- EDC-AEC, had collaborations with IIT-GHY, IIT-BOM, NE8-Startups. EDC-AEC helps in promoting entrepreneurship in other regional colleges and also encourage them for forming their own e-cell, like NERIM, GCC, AEI.
- Finally, from 1st April to 2nd April, 2017 EDC-AEC, organized Annual Entrepreneurship Summit- "ERTHINITI 2017" which is the mega event of the session comprising talk shows by multiple personalities in Entrepreneurial field like Mr. Hironmoy Gogoi, Mr. Amlan Jyoti Khanikar, Mr. Tanushree Hazarika, Mr. Sanjeev Sarma, Mr. Aditya Jain and many more. It included other events like CREATOVATE phase-II, Bull and Bears (Virtual stock Market), IPL Auction, Business Quiz.
- Orientation program for the newly joined students have been conducted every year to mark the beginning of the new session.
- Josh talks was organized in AEC for the first time and EDC played a vital role in organizing the event. (2018)
- A General Enterprise Tendency Test (GETT) was held to see the tilt of the students of the 6th and 8th semester students towards entrepreneurship. (2018)
- IDEATION BOOT CAMP by NRL was held in the chemical auditorium (2018)
- An awareness workshop on startup activities was held on 7th February 2018

Success stories

The rate of success stories may not be quite high, but the innovative ideas of students are good in number. The two startups whose starting journey started from EDC-AEC are mentioned here-

- **Nexop** – it is the only sales Driven Marketing Agency in North East India. Based in Guwahati, Assam they provide 360-degree Marketing services which include search Engine optimization, Pay Per Click on Google Ad words, Bing etc., Social Media Marketing (facebook, Twitter etc.), Video Marketing, offline Marketing and others.

- **Smash Talk** – it is a fun and entertainment YouTube channel.

In the beginning of the year 2018 a new cell named as the Startup Cell was opened under TEQIP 3, which was merged with the EDC-AEC and a new cell Entrepreneurship Development and Startup Cell (EDSC) was formed which has been working together now under two faculties

- **Dr. Damodar Agarwal (HoD, Electrical Engineering Dept).**
- **Dr. Diganta Goswami (Associate professor, Civil Engineering Dept.)**
- Their guidance has helped a lot to prepare the plan of the upcoming year 2018-19.

Co-curricular and Extra-curricular Activities (10)

There are many scopes for extra and co-curricular activities in the institute. A few of them are mentioned below-

NCC

NCC of Assam Engineering College comes under the company of 30 Assam Engineering. It is open for both boys and girls. A Caretaking officer (CTO) is allotted to college and when he undergoes training for 3 months at NCC Officers Training Academy, Kamptee he is promoted to Associate NCC Officer (ANO). Sasanka Sekhar Sarma from Electrical Engineering department is an ANO of the college.

NSS

NSS is also quite active in the college since 2010 under the leadership of Dr. Pradip Baishya, Assistant Professor, Department of Mechanical Engineering. Under the scheme of NSS, many activities have been organized such as-

- Plantation drive
- Cleanliness drive
- Health and Safety awareness Camp for the urban poor in Pandu slum locality in Guwahati.

Other activities-

SOVIC- It is a social service organisation started off with an initiative by a group of enthusiastic and socially committed group of engineering students from Assam Engineering College Guwahati, hailing from diverse backgrounds with a common vision of "A better tomorrow for the backward & less-privileged children".

The organization is established on 28th June, 2013 with all the three districts of Barak Valley as operational areas. The core focuses are helping destitute, orphan, neglected, needy and abandoned children, empowerment of children & women, eliminating child labour and child abuse, combat effectively the exploitation, illiteracy and other evils targeting them, educational reforms etc..We do this through our unique holistic approach that tackles the areas that matters the most to the poor and deprived section of the society without any bias for sex, religion, caste, and creed.

Red Ribbon society

Red ribbon society was founded in 2011 which is responsible for blood donation camps. A blood donation camp was organized in collaboration with Social Welfare Section of the Assam Engineering College at Assam Engineering College Hospital premises. The event was flagged off by Pradip Baishya, President, Care Assam. The enthusiastic students, alumni, staff & faculty of AEC and members of Care Assam came ahead to achieve a collection of 266 units of blood, which is a record collection in a day for any educational institution. The team from Gauhati Medical College & Hospital which supported the event with the necessary technical resources held at AEC hospital thanked the AEC team & Care Assam for the noble gesture.

College week

Assam Engineering College organizes its annual college week in the later half of the month of January. During the college week various competitions in various disciplines of sports, cultural and literature are held. Various outdoor sports competitions such as Cricket, Football, Tennis, Volleyball, Basketball, Badminton and Athletics are held. These competitions are monitored by the Cricket Secretary, Football Secretary, General Sports Secretary, Minor Games Secretary etc who are the members of the union body and are selected by the student community. Various indoor sports competitions such as carom, table tennis etc are also held during the college week. These competitions are monitored by Boys Common Room Secretary. Cultural events such as solo singing, Chorus, Qawali, Jikir, Borgeet, Drama, Group Dance, Bihu competition etc are held. Cultural secretary arranges these competitions. Debate competition and Quiz Competitions are also organized during college week and it is being hosted by the Debating and Publicity Secretary. Salad Dressing Competition and Flower Decoration

Competition are held under the aegis of Girls' Common Room Secretary. Wall magazine competition is also held under the Magazine Secretary.

These competitions showcase the talents of the students. The college week ends with a parade from each of the hostels along with a cultural rally. This marks the foundation day of the college, i.e 25th January. A week long activity thus ends and winners are awarded in a prize distribution ceremony.

UDBHAVANAM

Assam Engineering College, has started organizing the annual technical festival entitled UDBHAVANAM from the year 2012. The two-day technical fest has many exciting events to attract the technical students all over India. Moreover, through this fest we at AEC try to induce young minds of the school students to new technologies and applications. There are events covering every technical department of the college namely, Civil, Mechanical, Electrical, Electronics and Telecommunication, Chemical, Computer Science, Instrumentation and Industrial Production Engineering. In addition to that the Entrepreneurship Development Cell and the Energy Club of AEC also organizes various events. The two-day technical festival promises to deliver a lot to the technical students and open new endeavors through various technologies in the betterment of the society.

Pyrokinesis

The college also organizes a cultural festival called- "Pyrokinesis" in every even semester. It is an effort to enthuse the spirit of technical and cultural exuberance amongst youth. It's a common platform wherein students can showcase their talents and visions. Pyrokinesis encompasses a wide range of events covering all the areas of interest of the youth of this part of the nation, and the variety of the events is something we have always been proud of. From science and technology to entertainment, from information technology to literature pursuits, all the events at Pyrokinesis have constantly set new benchmarks of excellence in organization and participation.

Robotics Club

The Robotics Club of Assam Engineering College is a fraternity, of students whose passions dwell in beholding wires and metal beget a machine that has a brain of its own. The Club offers indispensable guidance, workshops and tutorials along with tools,

equipments, components and workspace. It welcomes anyone, with or without prior knowledge, who wishes to be a part of this fraternity. There are no pre-requisites to join because its members believe in the transfer of knowledge, especially that which concerns our precious interest in Robotics. It organizes its annual set of competitions during UDBHAVANAM, the annual technical festival of the institution.

Energy Club

Energy Club is formed with an aim to create awareness about sustainable energy. It is run by the department of Electrical Engineering. Energy club was formed in the year 2012. It organized a seminar during UDBHAVANAM'2012 in which invited speakers highlighted the various aspects of present scenario of energy in the state.

Annual Magazine

Assam Engineering College also publishes an annual magazine called "AECIAN". It was first published in the year of 1964 and since then every year the students, faculty members and other members of the AEC fraternity is helping in making the magazine a great success.

Sports

Assam Engineering College has as many as 5 grounds for playing various kinds of sports like cricket, football, hockey and other outdoor sports. It has a hard court for basketball and also a hard court for tennis. Courts for volleyball and badminton are also there within the campus. Table Tennis board is available in the common room and in all the hostels for the students. There is a gymnasium hall in the campus which is well equipped with all the modern equipments. Overall it has good sports facility for the students. AEC has always performed well in all the inter college championships.

Some other clubs that come under Students' Activity Centre (SAC) are-

- Art Artist Artworks-Painting club
- AEC Coding club
- AEC Bihu club
- AEC JAM club-Music club
- AEC Literary club
- AEC Media cell-Publicity & Information wing
- AEC Riders' club
- AEC Quiz club
- AEC Drama club
- Flash Point-Photography club
- The best house-Dance club
- The Aspire Community
- SCOPE (Skill Development Cell)
- AEC Science club

Criterion 10	Governance, Institutional Support and Financial Resources	120
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10. GOVERNANCE, INSTITUTIONAL SUPPORT AND FINANCIAL RESOURCES (120)

Organization, Governance and Transparency (40)

State the Vision and Mission of the Institute (5) Vision

To be an institution for promoting and supporting sustainable development

Mission

- To prepare technical manpower with knowledge skills and values of sustainability.
- To take up relevant problems of society & industry as projects, research themes for study and to provide technological solutions.

Governing body, administrative setup, functions of various bodies, service rules, procedures, recruitment and promotional policies (10)

Assam Engineering College (AEC) is a state government college and Assam government is its 100% stake holder. AEC is governed by Department of Higher Education (Technical) under the Director of Technical Education, Kahilipara. College activities and policy decisions regarding academic matters are taken by the Academic Council of the college. Members of the Academic Council are Principal (Chairman), Heads of all Departments and Senior Professors.

Functions of Key Administrative Positions

The functions of various key positions are depicted in Table below-

Position	Functions
Principal	<ul style="list-style-type: none"> • Design & define organization structure • Define & delegate responsibilities of various positions in the organization

Position	Functions
	<ul style="list-style-type: none"> • Ensure periodic monitoring & evaluation, of various processes & sub-processes • Ensure effective purchase procedure • Define quality policy and objectives • Prepare annual budget • Conduct periodic meeting of various bodies such as LMC, Standing Committee and Grievances Redressal Committee etc • Manage accounts and finance • Office Administration • Compliance with AICTE, DTE & University • Admission
Administrative Officer	<ul style="list-style-type: none"> • Liasoning with AICTE, DTE and University • College roster • Service Books • Faculty personal files • Maintain minutes of meeting (all) • Co – ordinate day to day activities of office • Purchase process • AICTE, DTE, SU committee preparation • Annual College budget
Head of Departments	<ul style="list-style-type: none"> • Plan and execute academic activities of the department • Maintain discipline and culture in the department • Maintain the department neat and clean • Pick and promote strengths of students / faculty / staff • Monitor academic activities of the department • Propose Department Budget • Adhere to QMS Procedures • Maintain records of departmental activities and achievements
I/C Alumni Association	<ul style="list-style-type: none"> • Formation of student council (SC) • Arrange periodic meetings of SC

Position	Functions
	<ul style="list-style-type: none"> • Ensure alumni registration • Prepare alumni news letter • Proposing annual budget
I/C Workshop	<ul style="list-style-type: none"> • Smooth running of college workshop • Preparing Material Requirement • Oversee the routine work
I/C Employee Development cell	<ul style="list-style-type: none"> • Identifying training needs of employees
Training and Placement Officer	<ul style="list-style-type: none"> • Notify the employees about various Employee Development programmes • Arrange Employee Development Programmes • Maintain training records • Liaison with industry • Student Training and Placement • Identify and provide for training needs of students • Arrange campus interviews • Proposing annual T & P budget
I/C Library	<ul style="list-style-type: none"> • Plan and execute modus operandi of routine activity of the library • Plan and propose expansion / development • Maintain library discipline and culture • Prepare annual budget for library
I/C Student Professional Activities	<ul style="list-style-type: none"> • Organize events through students professional societies / chapters • Organize different contests • Encourage student participation • Publication of technical magazine and news letters • Record of student participation and achievements in Co-curricular and extra – curricular activities • Maintain record of such events
	<ul style="list-style-type: none"> • Ensure smooth conduct of sports

Position	Functions
I/C Gymnasium/Sports	<ul style="list-style-type: none"> • Ensure proper use of gym • Purchasing of sport items • Encourage students to participate in zonal tournaments • Creation and upkeep of sports facilities • Proposing annual budget
I/C Counseling Cell	<ul style="list-style-type: none"> • Facilitate career guidance to students • Assist students suffering from psychological disorders • Arrange for professional counselors • Maintain record of counseling activities • Student academic counseling • Provide slow-pace programme for weaker students • Arrange remedial classes for weaker students

Position	Name	Contact Details
Principal	Dr. Atul Bora	Phone: +913612570550 , 03612572521(R) Email: principal@aec.ac.in
Administrative Officer	<i>The post is vacant now, the tasks are taken care of by the principal</i>	Phone: +913612570550 , 03612572521(R) Email: principal@aec.ac.in
Head of Departments	Chemical Engineering	Prof. Ashok Baruah ashok_baruah@yahoo.com
	Civil Engineering	Dr. Palash Jyoti Hazarika pjhaz@rediffmail.com
	Mechanical Engineering	Dr. Ranjit Kumar Dutta hellorkdutta@gmail.com
	Electrical Engineering	Dr. Damodar Agarwal agarwal_d.ele@aec.ac
	Computer Science and Engineering	Mr. Apurba kumar kalita a_kalita@rediffmail.com
	Electronics and Telecommunications	Mr. Apurba kumar kalita a_kalita@rediffmail.com
	Industrial and production Engineering	Dr. Ranjit Kumar Dutta hellorkdutta@gmail.com
	Instrumentation	Dr. Damodar Agarwal

Position	Name	Contact Details
	Engineering	agarwal_d.ele@aec.ac
I/C Alumni Association	Dr. Pradip Baishya	baishyapk@gmail.com
I/C Workshop	Mr. Binoy Sarma	bcsbinoy@gmail.com
Training and Placement Officer	Dr. Navajit Saikia Dr. Amrita Ganguly	placement@aec.ac.in, training@aec.ac.in
I/C Library	Dr. Jyotika Devi	d_jyotika@yahoo.co.in
I/C Student Professional Activities	Dr. Amrita Ganguly	aganguly.ele@aec.ac.in
I/C Gymnasium /Sports	Prof. Deba Kr. Mahanta	debamahanta@gmail.com
I/C Counseling Cell	Dr. Maushumi Barooah	maushu@gmail.com

RULES, PROCEDURES, RECRUITMENT AND PROMOTIONAL POLICIES

The rules and policies regarding recruitment and promotion are as per AICTE and Assam government. The recruitment procedure is conducted by APSC and DTE.

The following committees have been created for smooth functioning of the institution and also to provide quick and efficient solution to various problems that may arise.

HOSTEL SUPERINTENDENTS (2015-18)

Name	Designation	Position
Mr. B. Dekaraja	Asst. Professor	Superintendent of Hostel 1
Dr. Aroop Bardalai	Professor	Superintendent of Hostel 2
Mr. Bhaskar Jyoti Das	Associate Professor	Superintendent of Hostel 3
Mr. Sasanka Shekhar Sarma	Asst. Professor	Superintendent of Hostel 4
Dr. Sasanka Borah	Asst. Professor	Superintendent of Hostel 5
Mr. Prasanta Choudhury	Asst. Professor	Superintendent of Hostel 6

Name	Designation	Position
Mr. Madhurjya Baruah	Asst. Professor	Superintendent of Hostel 7
Ms. Barnali Gogoi	Asst. Professor	Superintendent of Hostel 8

LIBRARY COMMITTEE (2015-2018)

Sl. No.	Name of the Member	Position	Designation
1.	Dr. Atul Bora	Chairman	Principal
2.	Dr. Sudip Kumar Deb	Vice Chairman	Professor
3.	Ms. Jyotika Devi	Member Secretary	Librarian
4.	Dr. Jayanta Pathak	Member	Professor
5.	Dr. Kalyan Kalita	Member	Associate Professor
6.	Dr. Aroop Bardoloi	Member	Associate Professor
7.	Prof. Runjun Das	Member	Associate Professor
8.	Dr. Navajit Saikia	Member	Associate Professor
9.	Prof. Reeta Goswami	Member	Associate Professor
10.	Dr. Utpal Nath	Member	Associate Professor
11.	Dr. J. K. Nath	Member	Associate Professor
12.	Dr. Farhana Parveen	Member	Associate Professor
13.	Dr. Maushumi Barooah	Member	Associate Professor

MEMBERS OF THE STUDENTS UNION OF ASSAM ENGINEERING COLLEGE, GUWAHATI (2017-18)

S. No	Portfolio	Name	Phone No
1.	GENERAL SECRETARY	Abinash Medhi	9678115894
2.	ASSISTANT GENARAL SECRETARY	Udipta P. Goswami	7086692798
3.	SOCIAL WELFARE SECRETARY	Shahrukh Zaman Siddiki	9706350222
4.	TRAINING AND PLACEMENT SECRETARY	Subham Kumar Daftery	9401794056
5.	CULTURAL SECRETARY	Bedanta Bikram Borah	9435081073
6.	MAGAZINE SECRETARY	Debatosh Bhowmik	8473007137
7.	MINOR GAMES SECRETARY	Keshab Sharma	8761885099

S. No	Portfolio	Name	Phone No
8.	CRICKET SECRETARY	Bijit Roy	9706481701
9.	FOOTBALL SECRETARY	K. Newton Rongmei	7576897394
10	GENERAL SPORTS SECRETARY	Rahul Kumar	9401981073
11	BOY'S COMMON ROOM SECRETARY	Gourab Hazarika	8255022271
12	DEBATING AND PUBLICITY SECRETARY	Bishal Pratim Nath	7035913337
13	TENNIS SECRETARY	Udipta Bharali	8822418699
14	GYMNASIUM & KABADI SECRETARY	Prandeep Saikia	7663096092
15	GIRLS' COMMON ROOM SECRETARY(uncontested)	Resham Narzary	8486674629

**MEMBERS OF THE STUDENTS UNION OF ASSAM ENGINEERING COLLEGE, GUWAHATI
(2016-17)**

S. No	Portfolio	Name	Phone No
1.	GENERAL SECRETARY	DEEP JYOTI KALITA	8011265257
2.	CULTURAL SECRETARY	JEWELL DEV SARMAH	8723819530
3.	SOCIAL WELFARE SECTARY	PRANJAL KR,SAIKIA	8876371354
4.	MAGAZINE SECRETARY	PALLAV PRATIM GAYAN	8486581816
5.	MINOR GAMES SECRETARY	RIDIP DUTTA	8876640042
6.	CRICKET SECRETARY	BIKASH RANJAN DAS	7086238755
7.	FOOTBALL SECRETARY	AKASH JYOTI DUTTA	7896594881
8.	TRAINING AND PLACEMENT SECRETARY	SUDARSHAN SAIKIA	9707845119
9.	ASSISTANT GENARAL SECRETARY	NABADEEP KALITA	8403087575
10.	GENERAL SPORTS SECRETARY	AJOY DOLEY	8011999117
11.	BOY'S COMMON ROOM SECRETARY	SACHANKA SAIKIA	9678240379

S. No	Portfolio	Name	Phone No
12.	DEBATING AND PUBLICITY SECRETARY	BHARAT GOGOI	9706223634
13.	TENNIS SECRETARY	DAVID PRATIM GOGOI	9613005399
14.	GYMNASIUM & KABADI SECRETARY	JADOB KRO	8486760867
15.	GIRLS'COMMON ROOM SECRETARY	HIMASHREE DEKA	9859042648

PROFESSOR IN CHARGE OF AECSU (2017-18)

Sl. No.	Position	Name of the Member	Designation
1	President	Dr Atul Bora	Principal, AEC
2	Vice President	Dr. Aroop Kr. Bardalai	Professor EE
3	Treasurer	Dr. Utpal Nath	Asstt. Prof. Chemistry, AEC
4	Magazine Section AECIAN	Dr. Satyajit Bhuyan	Associate Prof. EE, AEC
5	Social Welfare Section	Prof. Sasanka Shekhar Sarma	Asstt. Professor EE, AEC
6	Music Cultural Section	1)Dr. Jayanta Pathak 2) Dr. Moushumi Barooah	Professor CE, AEC Professor MCA, AEC
7	Minor Games Section	Dr. B.K. Talukdar	Associate Prof. EE, AEC
8	Cricket Section	Prof. Bhaskar Jyoti das	Associate Prof. CE, AEC
9	Training & Placement	1)Dr. Navajit Saikia 2)Dr. Amrita Ganguli	Asstt. Professor E&TC, AEC Associate Prof. EE, AEC
10	Football Section	Prof. Madhurjya Boruah	Asstt. Professor ME, AEC
11	Boy's Common Room Section	Prof. Biswanath Dekaraja	Asstt. Professor EE, AEC
12	Debating & Publicity Section	Dr. S.K. Deb	Professor ME, AEC
13	Gymnasium Section	Prof. Deba Kr. Mahanta	Asstt. Professor EE, AEC

Sl. No.	Position	Name of the Member	Designation
14	Tennis Section	Dr. Jutika Goswami	Asstt. Professor Chemistry, AEC
15	General Sports Section	Prof. Sasanka Borah	Asstt. Professor CE, AEC
16	Girls Common Room	Prof. Barnali Gogoi	Asstt. Professor MCA, AEC

COMMITTEE OF COUNSELORS FOR STUDENTS (2015-18)

Sl. No.	Position	Name of the Member	Designation
1	Prof. Maushumi Barooah	Professor, MCA, AEC	Chair Person
2	Dr. Sangeeta Goswami	Clinical counseling Psychologist	Expert
3	Dr. S.K. Deb	Professor, AEC	Member
4	Dr. Runumi Sarma	Professor, EE, AEC	Member
5	Prof. Runjun Das	Associate Professor, Chem. Engg, AEC	Member

Decentralization in working and grievance redressal mechanism (10)

A well decentralized pattern of working is followed at AEC. Though the Principal is the academic head of the institution, many of his powers are delegated to Heads of Departments and other officers for efficient functioning. The Heads of Departments are in charge of their departments. The delegation of power among various officers is as given below.

- HOD, CE - In charge of Department of Civil Engineering
- HOD, ME - In charge of Department of Mechanical Engineering
- HOD, EE - In charge of Department of Electrical Engineering
- HOD, CSE - In charge of Department of Computer Science & Engineering
- HOD, CHE - In charge of Department of Chemical Engineering
- HOD, E&T - In charge of Department of Electronics and Telecommunication Engineering
- HOD, IE- In charge of Department of Instrumentation Engineering
- HOD, IPE - In charge of Department of Industrial & Production Engineering

- HOD, MCA - In charge of Department of Master of Computer Application
- HOD, Physics - In charge of Department of Physics
- HOD, Chemistry - In charge of Department of Chemistry
- HOD, Mathematics - In charge of Department of Mathematics
- HOD, Humanities - In charge of Department of Humanities
- Placement officer - Placement, Soft Skill Development, Public Relations

Departments are provided with 'Department Fund' and 'Petty Cash a/c' which can be utilized for student welfare, facility maintenance and minor purchases.

Grievances can be directed to the Staff Secretary who will bring it to the notice of the Academic council wherein it is discussed and suitable solutions arrived at. Complaints regarding infrastructure can be registered through an online complaint register. Suggestion box is kept outside the office of the Principal, in which staff and students can deposit their grievances / suggestions.

List of faculty members who are administrators/decision makers for various assigned jobs

Sl No	Name	Position
1	Dr. Atul Bora	PRINCIPAL
2	Dr. Ranjit Kumar Dutta	HOD ME & IPE
3	Dr. Damodar Agarwal	HOD EE & INS
4	Prof. Ashok Baruah	HOD CHE
5	Prof. Apurba Kumar Kalita	HOD E&T & CSE
6	Dr. Palash Jyoti Hazarika	HOD CE
7	Dr. Maushumi Barooah	HOD MCA
8	Prof Reeta Goswami	HOD Physics
9	Dr. Tapas Barman	HOD Chemistry
10	Prof Pranab Kumar Sarma	HOD Mathematics
11	Dr. Afazuddin Ahmed	HOD Humanities
12	Dr. Pradip Baishya	In-Charge, Alumni Association
13	Mr. Binoy Sarma	In-Charge, Workshop
14	Dr. Maushumi Barooah	In-Charge, Counseling Cell
15	Dr. Amrita Ganguly	In-Charge, Student

		Professional Activities Cell
16	Dr. Jyotika Devi	Librarian

GRIEVANCE REDRESSAL CELL (GRC)

For the wellbeing of the students the institution has a Grievance Redressal cell to rectify grievance faced by the student during the course of study. GRC Committee effectively addresses various issues such as general grievances, ragging issues, women issues etc. on the campus, as per guidelines of AICTE. GRC consist of Principal, HOD's, Senior faculty members, student representatives.

ANTI RAGGING MECHANISM

In pursuance of the directive of the Hon'ble Supreme Court of India, Govt. of Assam and AICTE etc. an Anti-ragging squad is formed for the college. The squad will be mobile alert at any time and would make periodic yet random/surprise visits or raids at the hostels and other places of potential ragging. An Anti-ragging Committee will give necessary support/shared vision /action/intervention as sought by the Anti-ragging squad of this college.

The anti-ragging bodies shall adopt the various strategies to eliminate/prevent ragging at AEC. Awareness among the students and other stakeholders about the implications/range of judiciary actions that may invite to anyone indulging in ragging may be generated. Anti-ragging banners are installed at different locations inside college premises. Steps to engage the students in cultural and intellectual activities such as seminars/lectures series of social relevance may also be undertaken. The squad will continuously monitor, review the situation and report to the Principal/Anti-ragging Committee for necessary support/shared vision/action/intervention.

ANTI RAGGING SQUAD (2015-17)

S1 No.	Name	Designation	Position	Contact Number
1	Dr. Arup Bardalai	Professor	Chairman	9854206603
2	Bhaskar Jyoti Das	Assoc. Professor	Member	9864093762

Sl No.	Name	Designation	Position	Contact Number
3	Ms. Barnali Gogoi	Asst. Professor	Member	9864067264
4	Prasanta Choudhury	Asst. Professor	Member	9954279327
5	Dr. Sasanka Borah	Asst. Professor	Member	9435536598
6	Biswanath Dekaraja	Asst. Professor	Member	9401320341
7	Sasanka Shekhar Sarma	Asst. Professor	Member	9401363269
8	Mr. Madhurjya Baruah	Asst. Professor	Member	9435708424

ANTI-RAGGING COMMITTEE (2015-17)

Sl No.	Name	Designation	Position	Contact Number
1	Dr. Atul Bora	Principal	Chairman	
2	Dr. Sudip Kr. Deb	Professor	Vice Chairman	9435105142
3	Dr. Aroop Bardalai	Professor	Chief Coordinator	9854206603
4	Dr. Palash Jyoti Hazarika	Professor	Member	9864023851
5	Dr. Ranjit Kumar Dutta	Professor	Member	8011397494
6	Dr. Damodar Agarwalla	Professor	Member	9954048758
7	Prof. Ashok Baruah	Professor	Member	9864044510
8	Prof. Apurba Kr Kalita	Professor	Member	9706074262
9	Dr. M. Baruah	Professor	Member	9864036044
10	Prof. Bhaskarjyoti Das	Asst. Professor	Member	9864093762
11	Dr. Sasanka	Asst.	Member	9435536598

Sl No.	Name	Designation	Position	Contact Number
	Borah	Professor		
12	Prof. Prasanta Kumar Choudhury	Asst. Professor	Member	9954279327
13	Prof Biswanath Dekaraja	Asst. Professor	Member	9401320341
14	Prof. Sasanka Sekhar Sharma	Asst. Professor	Member	9401363269
15	Prof. Barnali Gogoi	Asst. Professor	Member	9864067264
16	Prof. Madhurjya Baruah	Asst. Professor	Member	9435708424
17	Dr. Utpal Nath	Asst. Professor	Member	9435408459

SEXUAL HARASSMENT PREVENTION MECHANISM

In pursuance of the Govt. instructions on the act "The Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013 (Sexual Harassment Act)", the internal complaint committee constituted to examine the probable matter relating to the sexual harassment on women at workplaces in Assam Engineering College, Jalukbari, Guwahati is hereby constituted with the following members.

SEXUAL HARASSMENT COMMITTEE FOR THE ACADEMIC YEAR 2017-18

Sl No.	Name	Designation
1	Dr. Atul Bora	Principal
2	Dr. Maushumi Barooah	Professor, MCA
3	Dr. Runumi Sarma Bordoloi	Professor, EE
4	Prof. Runjun Das	Associate Professor, CHE

5	Prof. Purabi Patowary	Associate Professor, EE
6	Prof. Rashi Borgohain	Assistant Professor, E&T
7	Mrs. Nilima Boro	Junior Assistant, AEC office
8	Dr. Sudip Kumar Deb	Professor, ME
9	Dr. Jayanta Pathak	Professor, CE

Delegation of financial powers (10)

Institution should explicitly mention financial powers delegated to the Principal, Heads of Departments and relevant in-charges. Demonstrate the utilization of financial powers for each year of the assessment years.

Transparency and availability of correct/unambiguous information in public domain

(5)

The college maintains transparency in all its operation and working. Information such as Internal marks scored by students, Shortage of attendance, if any, Availability of scholarships, Opportunities for students etc. are promptly displayed on Notice Boards as well as on LCD which are installed at Main building and Canteen.

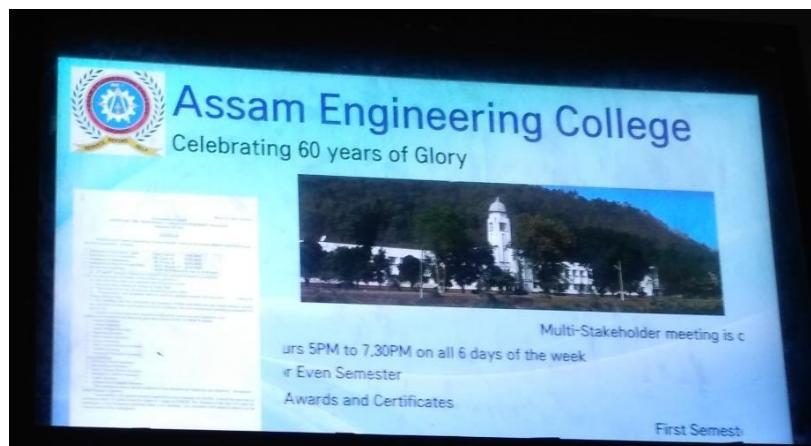


Fig. 10.1.5 LCD display screen at Main Building Entrance

Criteria for student scholarships, faculty awards etc. are informed well in advance so that equal opportunity is given to all individuals concerned.

At the beginning of every academic year the college brings out a calendar, which contains all the information, including contact numbers of all the faculty members and

Head of the Departments. Information about every activity in the college is sent to all staff and students through e-mail as well as departmental notice board.

All the required information about the college is made available, as per directions of AICTE, in the college website: www.aec.ac.in.

Information sought under RTI act is promptly furnished by the Principal.

Budget Allocation, Utilization, and Public Accounting at Institute level (30)
 (Summary of current financial year's budget and actual expenditure incurred (for the institution exclusively) in the three previous financial years.)

For 2017-18

Total Income (in Rs.)				Actual Expenditure (in Rs.)			Total No. of students 1901
Fee	Govt.	Grant(s)	Other Sources	Recurrin g includin g salaries	Non-recurrin g	Special Projects/ Any Other	Expenditur e per student
34,28,65-	26,41,55,21-	1,77,84,16-	1,63,75,80-	26,56,57,894.00	1,57,25,332.00		1,48,019.00

For 2016-17

Total Income (in Rs.)				Actual Expenditure (in Rs.)			Total No. of students 1919
Fee	Govt.	Grant(s)	Other Sources	Recurrin g includin g salaries	Non-recurrin g	Special Projects/ Any Other	Expenditur e per student
34,65,95-	27,21,67,87-	3,14,48,637.00	1,70,22,248.00	26,04,26,538.00	3,55,29,201.00		1,54,224.00

For 2015-16

Total Income (in Rs.)				Actual Expenditure (in Rs.)			Total No. of students 1963
Fee	Govt.	Grant(s)	Other Sources	Recurrin g includin g salaries	Non-recurrin g	Special Projects/ Any Other	Expenditur e per student
35,48,35-	24,90,68,00-	1,87,86,35-	1,66,30,391.00	24,11,12,01-	2,50,77,688.00		1,35,604.00

For 2014-15

Total Income (in Rs.)				Actual Expenditure (in Rs.)			Total No. of students 1999
Fee	Govt.	Grant(s)	Other Sources	Recurrin g includin g salaries	Non-recurrin g	Special Projects/ Any Other	Expenditur e per student
36,11,25-	22,67,25,00-	1,75,00,00-	1,74,21,578.00	21,77,39,602.00	18016941.00		1,17,937.00

Table B.10.2a

Items	Budgeted in 2017-18	Actual expense s in 2017-18	Budgeted in 2016-17	Actual expense s in 2016-17	Budgeted in 2015-16	Actual expense s in 2015-16	Budgeted in 2014-15	Actual expense s in 2014-15
Infrastructure Built-Up	86,50,000	46,00,000	3,14,48,687	3,32,28,378	1,87,86,350	2,15,29,333	1,75,00,000	1,27,94,310
Library	-	-	-	-	9,000	9,000	-	-
Laboratory Equipment	2,45,000	2,00,961	-	-	80,000	80,000	71,000	67,936
Laboratory Consumables	45,72,500	45,72,500	46,17,500	4617500	47,27,500	47,27,500	48,17,500	48,17,500
Teaching and Non-teaching Staff salary	25,14,87,106	24,19,46,954	26,32,20,000	23,62,75,376	24,01,76,000	21,63,94,318	21,91,24,000	19,66,84,877
Maintenance And spares	-	-	19,95,870	19,95,870	2,43,000	2,43,000	3,60,000	3,44,921
R & D	1,00,000	1,05,856	-	-	-	-	-	-
Training and Travel	1,39,82,554	82,07,131	84,08,500	83,70,336	85,89,500	85,89,500	87,41,500	87,37,725
Miscellaneous expenses	2,00,000	8,548	1,55,000	85,000	-	-	5,00,000	5,00,000
Others	2,25,06,660	2,17,41,276	1,43,29,198	1,13,82,393	1,54,06,741	1,24,34,224	1,41,43,828	1,18,09,274
Total	30,17,43,820	28,13,83,226	32,41,74,755	29,59,54,853	28,80,18,091	26,40,06,875	26,52,57,828	23,57,56,543

Table B.10.2b

Adequacy of budget allocation (10)

Budget requirements under 'recurring' and 'non-recurring' heads are collected from every departments and sections before the commencement of the financial year. Allocations are made as per the availability of funds. Spending is monitored by the accounts section. Supplementary allocations are made in special cases. The institution carefully monitors the expenses so that the necessities are met without affecting the smooth working of the institution. The management has been very efficiently doing this over the past several years that the institution never had any serious budget crunch that affected the functioning of the college.

Utilization of allocated funds (15)

Funds are allocated by the Principal of the College. Department Heads are intimated of the extent of funds allocated against their budget proposals.

Major works like construction, up-gradation of existing infrastructure, procurement and maintenance of common utilities, house-keeping, procurement of furniture etc. are controlled directly by the Principal.

Actions for procurement of lab equipment, up-gradation of existing lab facilities, purchase of consumables etc. are initiated from the respective departments and the funds are released on a case by case basis from the accounts office of the college on approval by the Principal.

During the last three years, the budget was utilized to meet expenses such as staff salary, infrastructure development, purchase of equipment, expenses towards consumables and contingencies, travel etc. Every year almost 75% of the budget is spent on staff salary, 10% on infrastructure development, about 8% on purchase of equipment, about 5 % on library development and the rest 2% on other expenses. This has been the general pattern of utilization of budget for the last 5 years.

Availability of the audited statements on the institute's website (5)

(The institution needs to make audited statements available on its website)

College website- www.aec.ac.in

Program Specific Budget Allocation, Utilization (30)

For 2017-18

Total Budget		Actual expenditure		Total no of students: 1901
Non-recurring	Recurring	Non-recurring	Recurring	Expenditure per student
17,95,000	1,87,54,554	17,46,417	1,27,87,679	7,646

For 2016-17

Total Budget		Actual expenditure		Total no of students: 1919

Non-recurring	Recurring	Non-recurring	Recurring	Expenditure per student
-	1,51,76,870	-	1,50,68,706	7,852

For 2015-16

Total Budget		Actual expenditure		Total no of students: 1,963
Non-recurring	Recurring	Non-recurring	Recurring	Expenditure per student
80,000	1,35,60,000	80,000	1,35,60,000	6,949

For 2014-15

Total Budget		Actual expenditure		Total no of students: 1,963
Non-recurring	Recurring	Non-recurring	Recurring	Expenditure per student
71,000	1,44,19,000	67,936	1,44,00,146	7,238

Table B.10.3a

Items	Budgeted in 2017-18	Actual expenses in 2017-18	Budgeted in 2016-17	Actual expenses in 2016-17	Budgeted in 2015-16	Actual expenses in 2015-16	Budgeted in 2014-15	Actual expenses in 2014-15
Laboratory Equipment	2,45,000	2,00,961	-	-	80,000	80,000	71,000	67,936
Software	14,50,000	14,39,600	-	-	-	-	-	-
Laboratory Consumables	45,72,500	45,72,500	4617500	4617500	47,27,500	47,27,500	48,17,500	48,17,500
Maintenance	-	-	19,95,870	19,95,870	2,43,000	2,43,000	3,60,000	3,44,921

Items	Budgeted in 2017-18	Actual expenses in 2017-18	Budgeted in 2016-17	Actual expenses in 2016-17	Budgeted in 2015-16	Actual expenses in 2015-16	Budgeted in 2014-15	Actual expenses in 2014-15
And spares								
R & D	1,00,000	1,05,856	-	-	-	-	-	-
Training and Travel	1,39,82,554	82,07,131	8408500	8370336	85,89,500	85,89,500	87,41,500	87,37,725
Miscellaneous expenses	2,00,000	8,548	1,55,000	85,000	-	-	5,00,000	5,00,000
Total	2,05,50,054	1,45,34,596	1,51,76,870	1,50,68,706	1,36,40,000	1,36,40,000	1,44,90,000	1,44,68,082

Table B.10.3b

* Items to be mentioned.

Adequacy of budget allocation (10)

Budget requirements under 'recurring' and 'non-recurring' heads are collected from every departments and sections before the commencement of the financial year. Allocations are made as per the availability of funds. Spending is monitored by the accounts section. Supplementary allocations are made in special cases. The institution carefully monitors the expenses so that the necessities are met without affecting the smooth working of the institution. The management has been very efficiently doing this over the past several years that the institution never had any serious budget crunch that affected the functioning of the college.

Utilization of allocated funds (20)

Funds are allocated by the Principal of the College. Department Heads are intimated of the extent of funds allocated against their budget proposals. Major works like construction, up-gradation of existing infrastructure, procurement and maintenance of common utilities, house-keeping, procurement of furniture etc. are controlled directly by the Principal.

Actions for procurement of lab equipment, up-gradation of existing lab facilities, purchase of consumables etc. are initiated from the respective departments and the funds are released on a case by case basis from the accounts office of the college on approval by the Principal.

During the last three years, the budget was utilized to meet expenses such as staff salary, infrastructure development, purchase of equipment, expenses towards consumables and contingencies, travel etc. Every year almost 75% of the budget is spent on staff salary, 10% on infrastructure development, about 8% on purchase of equipment, about 5 % on library development and the rest 2% on other expenses. This has been the general pattern of utilization of budget for the last 5 years.

Library and Internet (20)

(Indicate whether zero deficiency report was received by the Institution for all the assessment years. Effective availability/purchase records and utilization of facilities/equipment etc. to be documented and demonstrated)

Quality of learning resources (hard/soft) (10)

- Relevance of available learning resources including e-resources
- Accessibility to students
- Support to students for self-learning activities

ABOUT THE COLELGE LIBRARY	
Carpet area of library (in m ²)	616
Reading space (in m ²)	309
Number of seats in reading space	80
Number of users (issue book) per day	40
Number of users (reading space) per day	10
Timings: During working day, weekend, and Vacation	9.30am-5.00pm in every working days

Number of library staff	7
Number of library staff with a degree in Library	2
Library Management	Yes
Computerization for search, indexing	Available
Issue/return records bar coding used	On process
Library services on Internet/Intranet INDEST or other similar membership archives	Not Available

TITLES AND VOLUMES PER TITLE

Number of titles: **15485**

Number of volumes: **63000**

Year	Number of new titles added	Number of new editions added	Number of new volumes added
2017-18	75	97	2251
2016-17	135	250	1835
2015-16	3	10	115

SCHOLARLY JOURNAL

Details		2017-18	2016-17	2015-16
Engg. And Tech	Soft Copy	IEEE & ASCE Journal	IEEE & ASCE Journal	IEEE & ASCE Journal
	Hard Copy	Nil	Nil	Nil

DIGITAL LIBRARY

Availability of digital library content : Yes

If available, mention number of courses, number of e-books, etc. : e-books-165

Availability of an exclusive server : Yes

Availability over Intranet/Internet : Intranet

Availability of exclusive space/ room : Yes

Number of users per day 10

LIBRARY EXPENDITURE ON BOOKS, MAGAZINES/JOURNALS, AND MISCELLANEOUS CONTENT

Year	Expenditure				Comments if any
	Books	Magazines/journals (for hard copy subscriptions)	Magazines/journals (for soft copy subscriptions)	Misc. Content	
2017-18	9,93,184.00	Nil	Nil	Nil	
2016-17	7,69,103.00	Nil	Nil	Nil	IEEE & ASCE Journal subscription provided by MHRD.
2015-16	Nil	Nil	Nil	Nil	New volumes and books provided by Government

Internet (10)

INTERNET

Name of the Internet provider	National Informatics Centre
Available bandwidth	1 Gbps
Availability of Internet in an exclusive lab	Yes

Availability in most computing lab	Yes
Availability in Departments and other units	Yes
Availability in Faculty rooms	Yes
Institute own e-mail facility to faculty/students	Yes
Security/privacy of e-mail/internet users	Yes

Internet is provided to the institute by Government of India under the scheme of National Knowledge Network (NKN). The Central Computer Centre (CCC) then distributes the internet connection among various departments, offices, canteen, library and hostels. However, every department has its own computer center too.

Name of the Internet Provider: National Knowledge Network (NKN) under Government of India

Available bandwidth:

The Central Computer Centre receives a bandwidth of 1 Gbps at its doorstep. The Civil Engineering department maximizes the bandwidth at the receiving end by using a suitable converter. Hence, the department also gets **1 Gbps bandwidth speed.**

Access Speed:

It varies from 150-300 Mbps across all the departments.

Wi Fi availability:

Wi Fi is available 24×7 in the academic buildings as well in the hostels.

Internet access in labs, classrooms, library and offices of all Departments:

Wi Fi routers are there in classrooms, library and other strategic positions in such a way that Wi Fi signal comes anywhere in the institute. There are more than 40 access points in the entire academic complex of the institute. 22 nos. are there in the main building, 16 nos. are there in the academic building and 4 nos. in the Canteen building.

Civil Engineering Department has three Wi Fi access points viz. at Departmental office, at Hydraulics Laboratory and Strength of Materials Laboratory.

All the 8 hostels are connected with LAN network with 1 Gbps speed and are managed centrally.

Security arrangements: The Wi Fi facility is secured with user ID authentication and passwords. Separate passwords are set for faculties, staff and students. Firewall server is there at the doorstep of the Central Computer Centre and the internet connectivity is filtered before sending to the departments or hostels.

PART C

DECLARATION

I undertake that, the institution is well aware about the provisions in the NBA's accreditation manual concerned for this application, rules, regulations, notifications and NBA expert visit guidelines in force as on date and the institute shall fully abide by them.

It is submitted that information provided in this Self Assessment Report is factually correct. I understand and agree that an appropriate disciplinary action against the Institute will be initiated by the NBA, in case any false statement/information is observed during pre-visit, visit, post visit and subsequent to grant of accreditation.



Signature & Name

Head of the Institution with seal

Principal
Assam Engineering College
Guwahati-781013



ANNEXURE I:

(A) PROGRAM OUTCOMES(POs)

Engineering 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.

(B) PROGRAM SPECIFIC OUTCOMES (PSOs)

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.

ANNEXURE II

2016-17

Sl. No.	Name of the Faculty Member	Qualification				Association with the Institution	Designation	Date of Joining the Institution	Department	Specialization	Academic Research			Sponsored Research (Funded Research)	Consultancy and Product Development
		Degree (highest degree)	University	Year of Graduation							Research Paper Publications	Ph.D. Guidance	Faculty Receiving Ph.D. during the Assessment Years		
1	Dr. Palash Jyoti Hazarika	Ph.D.	University of Roorkee	2000	1988	Professor	15/11/1988	Civil Engg.	Structural Engineering	12	1 completed 4 ongoing	-	3 Sponsored projects worth 44.5 Lakhs	2 consultancy projects worth Rs. 10 Lakhs	
2	Dr. Binu Sharma	Ph.D.	Gauhati University	2000	1987	Professor	07/03/1987	Civil Engg.	Geotechnical Engineering	42	4 ongoing	-	Nil	4 consultancy projects	

3	Dr. Jayanta Pathak	Ph.D.	IIT Roorkee	2002	1992	Professor	06/11/1992	Civil Engg.	Structural Engineering	12	2 completed 5 ongoing	-	6 sponsored projects worth Rs. 250.5 Lakhs	1 consultancy projects worth more than Rs. 25 Lakhs
4	Mr. Sunit Kumar Bhagabati	M.U.R .P.	University of Roorkee	1993	1981	Associate Professor	11/12/1981	Civil Engg.	Planning	Nil	-	-	Nil	Nil
5	Dr. Mrinal Kumar Borah	Ph.D.	Gauhati University	2011	1992	Professor	15/10/1992	Civil Engg.	Water Resources Engineering	9	2 ongoing	Yes	Nil	Nil
6	Dr. Diganta Goswami	Ph.D.	IIT Roorkee	2004	1992	Associate Professor	23/10/1992	Civil Engg.	Geotechnical Engineering	28	3 completed 9 ongoing	-	1 sponsored research project worth Rs. 24,93,000/-	5 consultancy projects worth more than Rs. 19,16,200/-
7	Dr. Bipul Talukdar	Ph.D.	University of Roorkee	2000	2000	Associate Professor	28/01/2000	Civil Engg.	Water Resources Engineering	28	3 completed 4 ongoing	-	6 sponsored projects worth Rs. 77.68 Lakhs	5 consultancy projects worth Rs. 21.47 Lakhs
8	Dr. Bibhash Sarma	Ph.D.	IIT Roorkee	2004	1997	Associate Professor	06/05/1997	Civil Engg.	Water Resources Engineering	34	2 completed 4 ongoing	-	1 sponsored project worth Rs. 9,86,230/-	7 consultancy projects worth Rs.69 Lakhs
9	Dr. Utpal Kumar Misra	Ph.D.	IIT Roorkee	2006	1994	Associate Professor	04/10/1994	Civil Engg.	Water Resources Engineering	5	Nil	-	1 sponsored project worth Rs. 18 Lakhs	Nil
10	Mr. Bhaskar Jyoti Das	M.E.	Gauhati University	1995	1997	Associate Professor	18/08/1997	Civil Engg.	Geotechnical Engineering	9	Nil	-	1 sponsored project worth Rs. 14,96,000/-	20 consultancy projects

11	Dr. Utpal Kumar Nath	Ph.D.	Gauhati University	2012	2008	Associate Professor	12/05/2008	Civil Engg.	Structural Engineering	32	6 ongoing	Yes	2 sponsored projects worth Rs. 10 Lakhs	2 consultancy projects worth Rs. 10 Lakhs
12	Dr. Malaya Chetia	Ph.D.	IIT Guwahati	2012	1995	Asstt. Professor	31/07/1995	Civil Engg.	Geotechnical Engineering	81	1 ongoing	Yes	Nil	Nil
13	Dr. Triptimoni Borah	Ph.D.	IIT Guwahati	2015	2014	Associate Professor	07/11/2014	Civil Engg.	Water Resources and Environmental Engineering	29	Nil	Yes	Nil	Nil
14	Dr. Pankaj Goswami	Ph.D.	Gauhati University	2013	1996	Asstt. Professor	03/08/1996	Civil Engg.	Water Resources Engineering	5	Nil	Yes	Nil	Consultancy projects worth more than Rs. 20 Lakhs
15	Dr. Bharati Medhi Das	Ph.D.	Gauhati University	2018	1999	Asstt. Professor	25/01/1999	Civil Engg.	Water Resources Engineering	4	-	Yes	Nil	Nil
16	Mrs. Puspanjali Sonowal	M.Tech.	IIT Guwahati	2012	2007	Asstt. Professor	06/01/2007	Civil Engg.	Environmental Engineering	4	-	-	Nil	Nil
17	Mrs. Rupjyoti Bordoloi	M.Tech.	IIT Guwahati	2013	2007	Asstt. Professor	08/01/2007	Civil Engg.	Transportation Engineering	1	-	-	Nil	Nil
18	Mr. Abinash Mahanta	M.E.	Gauhati University	2009	2011	Asstt. Professor	09/03/2011	Civil Engg.	Geotechnical Engineering	-	-	-	Nil	Nil
19	Dr. Sasanka Borah	Ph.D.	Gauhati University	2018	2011	Asstt. Professor	26/09/2011	Civil Engg.	Geotechnical Earthquake Engineering	11	-	Yes		
20	Dr. Indira Baruah Gogoi	Ph.D.	Gauhati University	2017	1993	Retired (Guest) faculty	01/03/2016	Civil Engg.	Engg. Geoscience	5	-	Yes	Nil	Nil

21	Mr. Prasenjit Saha	B.E.	Gauhati University	2013	2013	Guest faculty	01/08/2013	Civil Engg.	Electronics and Telecommunication Engineering	2	-	-	Nil	Nil
22	Ms. Mitali Mandal	M.Tech	NIT Silchar	2015	2015	Guest faculty	01/08/2015	Civil Engg.	Structural Engineering	1	-	-	Nil	Nil
23	Mrs. Rhitwika Barman	M.E.	Gauhati University	2016	2016	Guest faculty	08/01/2016	Civil Engg.	Watershed Management and Flood Control	1	-	-	Nil	Nil
24	Mrs. Anindita Bhattacharjya	M.Sc (Geological sciences)	Gauhati University	2013	2017	Guest faculty	01/03/2017	Civil Engg.	Structural Geology	2	-	-	Nil	Nil

Table A-II-a

2015-16

Sl. No.	Name of the Faculty Member	Qualification	Association with the Institution	Designation	Date of Joining the Institution	Department	Specialization	Academic Research			Sponsored Research (Funded Research)	Consultancy and Product Development
								Research Paper	Ph.D.	Faculty Receiving		

			Degree (highest degree)	University	Year of Graduation									
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2	Dr. Binu Sharma	Ph.D.	Gauhati University	2000	1987	Professor	07/03/1987	Civil Engg.	Geotechnical Engineering	42	4 ongoing	-	Nil	4 consultancy projects
3	Dr. Jayanta Pathak	Ph.D.	IIT Roorkee	2002	1992	Professor	06/11/1992	Civil Engg.	Structural Engineering	12	2 completed 5 ongoing	-	6 sponsored projects worth Rs. 250.5 Lakhs	1 consultancy projects worth more than Rs. 25 Lakhs
4	Mr. Sunit Kumar Bhagabati	M.U.R.P.	University of Roorkee	1993	1981	Associate Professor	11/12/1981	Civil Engg.	Planning	Nil	-	-	Nil	Nil
5	Dr. Mrinal Kumar Borah	Ph.D.	Gauhati University	2011	1992	Professor	15/10/1992	Civil Engg.	Water Resources Engineering	9	2 ongoing	Yes	Nil	Nil
6	Dr. Diganta Goswami	Ph.D.	IIT Roorkee	2004	1992	Associate Professor	23/10/1992	Civil Engg.	Geotechnical Engineering	28	3 completed 9 ongoing	-	1 sponsored research project worth Rs. 24,93,000/-	5 consultancy projects worth more than Rs. 19,16,200/-
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9	Dr. Utpal Kumar Misra	Ph.D.	IIT Roorkee	2006	1994	Associate Professor	04/10/1994	Civil Engg.	Water Resources Engineering	5	Nil	-	1 sponsored project worth Rs. 18 Lakhs	Nil
10	Mr. Bhaskar Jyoti Das	M.E.	Gauhati University	1995	1997	Associate Professor	18/08/1997	Civil Engg.	Geotechnical Engineering	9	Nil	-	1 sponsored project worth Rs. 14,96,000/-	20 consultancy projects
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13	Dr. Triptimoni Borah	Ph.D.	IIT Guwahati	2015	2014	Associate Professor	07/11/2014	Civil Engg.	Water Resources and Environmental Engineering	29	Nil	Yes	Nil	Nil
14	Dr. Pankaj Goswami	Ph.D.	Gauhati University	2013	1996	Asstt. Professor	03/08/1996	Civil Engg.	Water Resources Engineering	5	Nil	Yes	Nil	Consultancy projects worth more than Rs. 20 Lakhs
15	Dr. Bharati Medhi Das	Ph.D.	Gauhati University	2018	1999	Asstt. Professor	25/01/1999	Civil Engg.	Water Resources Engineering	4	-	Yes	Nil	Nil
16	Mrs. Puspanjali Sonowal	M.Tech.	IIT Guwahati	2012	2007	Asstt. Professor	06/01/2007	Civil Engg.	Environmental Engineering	4	-	-	Nil	Nil

17	Mrs. Rupjyoti Bordoloi	M.Tech.	IIT Guwahati	2013	2007	Asstt. Professor	08/01/2007	Civil Engg.	Transportation Engineering	1	-	-	Nil	Nil
18	Mr. Abinash Mahanta	M.E.	Gauhati University	2009	2011	Asstt. Professor	09/03/2011	Civil Engg.	Geotechnical Engineering	-	-	-	Nil	Nil
19	Dr. Sasanka Borah	Ph.D.	Gauhati University	2018	2011	Asstt. Professor	26/09/2011	Civil Engg.	Geotechnical Earthquake Engineering	11	-	Yes		
20	Dr. Indira Baruah Gogoi	Ph.D.	Gauhati University	2017	1993	Retired (Guest) faculty	01/03/2016	Civil Engg.	Engg. Geoscience	5	-	Yes	Nil	Nil
21	Mr. Prasenjit Saha	B.E.	Gauhati University	2013	2013	Guest faculty	01/08/2013	Civil Engg.	Electronics and Telecommunication Engineering	2	-	-	Nil	Nil
22	Ms. Mitali Mandal	M.Tech.	NIT Silchar	2015	2015	Guest faculty	01/08/2015	Civil Engg.	Structural Engineering	1	-	-	Nil	Nil
23	Mrs. Rhitwika Barman	M.E.	Gauhati University	2016	2016	Guest faculty	08/01/2016	Civil Engg.	Watershed Management and Flood Control	1	-	-	Nil	Nil

Table A-II-b

ANNEXURE III:

PO attainment for the batch 2011-15

Short Code	Long Code	Subject Name	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
1.1 TS	PH101	Physics-I	1.94	1.55	-	-	-	-	-	-	-	-	-	-
1.1 P	PH101L	Physics-I Lab	1.98	1.98	-	1.98	-	-	-	-	-	-	-	-
1.2 TS	CY102	Chemistry-I	2.05	1.26	-	-	-	0.31	0.47	-	-	-	-	0.47
1.2 P	CY102L	Chemistry-I lab	2.50	1.75	-	1.00	-	-	-	-	-	1.00	-	-
1.3 TS	MA103	Mathematics-I	2.03	2.03	0.81	0.14	-	-	-	-	0.14	-	-	1.36
1.4 TS	CE104	Elements of Civil Engineering	2.54	2.15	0.20	0.78	0.59	-	-	-	-	-	-	-
1.5 TS	HU105	English Communication and Technical Report Writing	-	0.85	-	0.85	-	0.85	0.85	1.13	2.56	1.92	-	2.56
1.6 TS	CE106	Engineering Graphics-I	2.59	2.59	2.09	2.22	1.85	2.22	0.62	-	-	-	-	-
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	2.50	2.00	-	-	-	-	-	-	-	-	-	-
2.1 P	PH201L	Physics-II Lab	1.59	1.59	-	1.59	-	-	-	-	-	-	-	-
2.2 TS	CY202	Chemistry-II	2.14	1.68	0.61	-	-	0.46	0.46	-	0.76	0.76	-	0.76
2.2P	CY202L	Chemistry-II Lab	2.00	2.00	-	1.25	-	0.50	1.00	-	-	1.00	-	-
2.3 TS	MA203	Mathematics-II	2.46	2.46	1.64	-	-	-	-	-	-	-	-	1.64
2.4 TS	ME203/CE205	Engineering Mechanics and Strength of Materials	1.96	1.39	1.14	1.04	0.59	-	-	-	-	-	-	0.33
2.4 P	ME203L/CE205L	Engineering Mechanics 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	2.39	2.39	2.39	1.60	1.28	0.80	2.39	0.32	0.80	-	-	2.39
2.5 P	EE206L	Basic Electrical Engg.-I Lab	2.53	2.53	-	0.84	-	-	-	-	2.53	0.56	-	2.53

Short Code	Long Code	Subject Name	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
2.6 TS	ME207	Engineering Graphics-II	2.73	2.73	0.91	-	0.36	0.55	-	-	-	-	-	0.91
2.7 S	ME208	Workshop-II	1.60	2.00	-	-	-	-	-	1.00	1.60	-	-	-
3.1 TS	MA301	Mathematics-III	1.89	1.89	-	-	-	-	-	-	-	-	-	1.26
3.2 TS	CE314	Basic Fluid Mechanics	2.38	2.30	1.99	1.43	1.35	1.27	1.19	1.11	1.03	1.11	1.19	1.19
3.2 P	CE314L	Basic Fluid Mechanics Lab	2.91	0.97	0.97	1.94	-	-	-	-	-	-	-	-
3.3 TS	CE313	Engineering Survey	1.98	1.40	1.05	1.52	-	0.23	0.70	0.93	1.17	0.93	0.47	0.47
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	1.88	1.88	-	-	-	1.88	1.88	1.88	-	-	-	1.88
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	2.85	1.90	-	0.95	-	-	-	-	-	-	-	-
3.5 P	CE315L	Construction Practice and Building Drawing Lab	2.38	1.39	1.98	0.59	0.59	-	-	-	-	-	-	-
3.6 TS	CE312	Theory of Structures-I	2.28	1.47	1.96	2.28	1.47	1.47	1.47	2.28	0.65	0.65	0.65	0.65
3.8 T	CE318	General Proficiency	0.96	0.96	0.96	0.96	1.92	1.92	1.92	2.88	2.88	2.88	0.96	2.88
4.1 TS	MA411	Advanced Mathematics and Numerical Analysis	1.52	1.21	0.81	0.10	0.10	-	-	-	0.10	-	-	0.71
4.2 TS	HU402	Sociology and Accountancy	-	0.90	-	-	-	1.19	0.90	1.19	1.04	0.90	0.90	2.69
4.3 TS	HU403	Communication Skill	-	1.41	-	1.18	-	1.73	0.94	1.41	1.57	2.36	-	2.36
4.4 TS	CE412	Theory of Structures-II	2.51	2.51	2.51	2.51	2.51	2.51	1.67	2.51	0.84	0.84	0.84	0.84
4.5 TS	CE413	Advanced Surveying	2.08	2.08	1.12	1.60	2.40	-	-	0.64	1.28	0.96	0.64	0.96
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	2.50	2.50	1.90	1.67	0.83	-	-	-	-	-	-	-
4.6 P	CE414L	Hydraulic and Hydraulic Machines Lab	3.00	1.00	-	2.00	-	-	-	-	-	-	-	-
4.7 TS	CE415	Engineering Geoscience	2.28	1.52	1.52	0.95	0.76	-	0.38	-	-	-	-	0.95
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	0.99	0.99	0.99	0.99	1.98	1.98	1.98	2.97	2.97	2.97	0.99	2.97
5.1 TS	HU501	Economics and Principles of Management	-	0.95	-	-	-	1.90	0.95	0.95	1.90	0.95	0.95	2.52
5.2 TS	CE512	Design of Structures-I	1.96	2.66	2.94	1.96	1.82	0.98	1.96	1.12	1.96	1.96	0.98	2.94
5.3 TS	CE513	Environmental Engineering-I	1.21	1.66	1.06	0.75	1.21	1.06	1.36	0.45	-	-	-	-
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	2.33	2.04	2.04	1.90	1.90	1.90	2.04	1.31	1.75	1.75	1.60	1.60
5.4 P	CE514L	Transportation Engineering-I Lab	1.49	-	-	0.50	0.50	0.50	0.50	-	-	-	-	-
5.5 TS	CE515	Geotechnical Engineering	2.63	2.63	1.75	0.44	0.88	-	-	-	-	-	-	0.44
5.5 P	CE515L	Geotechnical Engineering Lab	2.97	1.16	-	1.98	0.99	-	-	-	1.98	2.97	-	-
5.6 TS	CE516	Concrete Technology	1.27	0.89	0.76	0.51	0.38	-	1.77	-	-	1.52	-	1.27
5.6 P	CE516L	Concrete Technology Lab	-	-	-	-	2.00	2.00	-	3.00	3.00	3.00	-	-
5.8 T	CE517	General Proficiency	0.95	0.95	0.95	0.95	1.90	1.90	1.90	2.84	2.84	2.84	0.95	2.84
6.1 TS	CE611	Design of Structures-II	1.96	2.66	2.94	1.96	1.82	0.98	1.96	1.96	1.96	1.96	0.98	2.94
6.1 P	CE611L	Design of Structures-II Lab	2.91	0.97	0.97	-	-	-	-	0.97	1.94	-	-	0.97
6.2 TS	CE612	Foundation Engineering	1.05	0.53	-	0.53	-	1.40	-	-	-	-	-	-
6.3 TS	CE613	Transportation Engineering-II	2.27	1.82	1.82	1.97	1.82	1.82	2.12	1.21	1.82	1.36	1.82	1.21
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	1.08	1.80	0.72	0.54	0.36	0.90	0.36	-	-	-	-	-
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	2.27	1.82	0.91	-	0.91	0.30	-	-	0.45	-	-	-
6.6 TS	CE616	Hydrology	1.84	2.20	2.02	1.65	1.65	1.47	1.84	1.29	1.65	1.84	0.92	1.84
6.7 T	CE617	General Proficiency	1.92	1.92	-	1.60	1.92	1.60	1.60	1.92	2.88	2.88	-	1.60

Short Code	Long Code	Subject Name	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
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	1.94	2.91	1.94	1.94	1.94	0.97	0.97	0.97	1.94	0.97	0.97	2.91
7.2 TS	CE712	Design of Structures-III	2.58	2.58	2.30	2.71	2.30	2.58	2.44	2.30	2.30	1.76	1.49	1.49
7.3 TS	CE713	Civil Engineering Planning	2.15	1.82	0.99	0.99	-	0.66	-	-	-	-	-	-
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	2.37	2.07	1.18	2.22	1.63	1.18	2.07	1.92	1.63	1.78	1.48	1.48
7.5_EI_2 TS	CE715B	Advanced Engg. 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	1.32	1.32	1.65	1.49	1.32	1.32	1.49	1.16	0.99	1.49	1.32	1.49
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	1.96	1.37	1.37	0.59	-	-	-	-	-	-	1.17	-
8.4_EIII_3 TS	CE814B	Design of Substructures	2.82	2.82	2.82	2.82	1.69	1.69	0.94	0.94	-	-	-	1.88
8.5_EIV_1 TS	CE815A	Water Power Engineering	2.02	1.10	1.47	2.39	1.29	-	0.55	-	-	-	-	-
8.6 P	CE817	Viva Voce	3.00	1.00	1.00	-	-	-	-	1.00	2.00	3.00	-	1.00
8.7 P	CE816	Project-II	2.97	2.97	2.97	2.97	1.98	1.98	1.98	1.98	2.97	2.97	1.98	2.97
		Direct Outcome	2.11	1.79	1.51	1.46	1.39	1.36	1.39	1.43	1.77	1.73	1.12	1.63
		Indirect Outcome	2.67	2.29	2.33	2.00	1.95	2.38	2.33	2.52	2.43	2.52	2.48	2.57
		Overall Outcome	2.22	1.89	1.67	1.57	1.51	1.57	1.58	1.65	1.90	1.89	1.39	1.82

Table A-III-a

PO attainment for the batch 2012-16

Short Code	Long Code	Subject Name	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
1.1 TS	PH101	Physics-I	2.13	1.70	-	-	-	-	-	-	-	-	-	-
1.1 P	PH101L	Physics-I Lab	1.61	1.61	-	1.61	-	-	-	-	-	-	-	-
1.2 TS	CY102	Chemistry-I	2.22	1.36	-	-	-	0.34	0.51	-	-	-	-	0.51
1.2 P	CY102L	Chemistry-I lab	2.50	1.75	-	1.00	-	-	-	-	-	1.00	-	-
1.3 TS	MA103	Mathematics-I	2.48	2.48	0.99	0.17	-	-	-	-	0.17	-	-	1.66
1.4 TS	CE104	Elements of Civil Engineering	2.36	2.00	0.18	0.73	0.54	-	-	-	-	-	-	-
1.5 TS	HU105	English Communication and Technical Report Writing	-	0.97	-	0.97	-	0.97	0.97	1.28	2.90	2.17	-	2.90
1.6 TS	CE106	Engineering Graphics-I	2.69	2.69	2.18	2.31	1.92	2.31	0.64	-	-	-	-	-
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	2.21	1.77	-	-	-	-	-	-	-	-	-	-
2.1 P	PH201L	Physics-II Lab	1.63	1.63	-	1.63	-	-	-	-	-	-	-	-
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	2.00	2.00	-	1.25	-	0.50	1.00	-	-	1.00	-	-
2.3 TS	MA203	Mathematics-II	2.72	2.72	1.81	-	-	-	-	-	-	-	-	1.81
2.4 TS	ME203/CE205	Engineering Mechanics and Strength of Materials	2.45	1.73	1.43	1.31	0.73	-	-	-	-	-	-	0.41
2.4 P	ME203L/CE205L	Engineering Mechanics 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	2.07	2.07	2.07	1.38	1.10	0.69	2.07	0.28	0.69	-	-	2.07
2.5 P	EE206L	Basic Electrical Engg.-I Lab	2.22	2.22	-	0.74	-	-	-	-	2.22	0.49	-	2.22
2.6 TS	ME207	Engineering Graphics-II	2.72	2.72	0.91	-	0.36	0.54	-	-	-	-	-	0.91

Short Code	Long Code	Subject Name	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
2.7 S	ME208	Workshop-II	1.55	1.93	-	-	-	-	-	0.97	1.55	-	-	-
3.1 TS	MA301	Mathematics-III	1.47	1.47	-	-	-	-	-	-	-	-	-	0.98
3.2 TS	CE314	Basic Fluid Mechanics	2.46	2.38	2.05	1.48	1.40	1.31	1.23	1.15	1.07	1.15	1.23	1.23
3.2 P	CE314L	Basic Fluid Mechanics Lab	2.78	0.93	0.93	1.85	-	-	-	-	-	-	-	-
3.3 TS	CE313	Engineering Survey	2.22	1.57	1.18	1.70	-	0.26	0.79	1.05	1.31	1.05	0.52	0.52
3.3 P	CE313L	Engineering Survey Lab	2.38	2.38	1.39	1.19	-	0.40	0.40	0.20	2.97	1.39	-	-
3.4 TS	EE316 /ME317	Electrical and Mechanical Engineering	1.70	1.70	-	-	-	1.70	1.70	1.70	-	-	-	1.70
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	2.90	1.94	-	0.97	-	-	-	-	-	-	-	-
3.5 P	CE315L	Construction Practice and Building Drawing Lab	2.28	1.33	1.90	0.57	0.57	-	-	-	-	-	-	-
3.6 TS	CE312	Theory of Structures-I	2.25	1.44	1.92	2.25	1.44	1.44	1.44	2.25	0.64	0.64	0.64	0.64
3.8 T	CE318	General Proficiency	0.92	0.92	0.92	0.92	1.83	1.83	1.83	2.75	2.75	2.75	0.92	2.75
4.1 TS	MA411	Advanced Mathematics and Numerical Analysis	1.57	1.25	0.84	0.10	0.10	-	-	-	0.10	-	-	0.73
4.2 TS	HU402	Sociology and Accountancy	-	0.81	-	-	-	1.08	0.81	1.08	0.94	0.81	0.81	2.43
4.3 TS	HU403	Communication Skill	-	1.40	-	1.17	-	1.71	0.93	1.40	1.55	2.33	-	2.33
4.4 TS	CE412	Theory of Structures-II	2.71	2.71	2.71	2.71	2.71	2.71	1.81	2.71	0.90	0.90	0.90	0.90
4.5 TS	CE413	Advanced Surveying	1.69	1.69	0.91	1.30	1.95	-	-	0.52	1.04	0.78	0.52	0.78
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	2.53	2.53	1.93	1.69	0.84	-	-	-	-	-	-	-
4.6 P	CE414L	Hydraulic and Hydraulic Machines Lab	2.44	0.81	-	1.63	-	-	-	-	-	-	-	-
4.7 TS	CE415	Engineering Geoscience	1.83	1.22	1.22	0.76	0.61	-	0.30	-	-	-	-	0.76
4.7 P	CE415L	Engineering Geoscience Lab	2.55	1.85	1.85	1.62	0.93	-	-	-	-	-	-	0.93

Short Code	Long Code	Subject Name	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
4.9 T	CE416	General Proficiency	0.89	0.89	0.89	0.89	1.78	1.78	1.78	2.68	2.68	2.68	0.89	2.68
5.1 TS	HU501	Economics and Principles of Management	-	0.93	-	-	-	1.85	0.93	0.93	1.85	0.93	0.93	2.46
5.2 TS	CE512	Design of Structures-I	1.94	2.63	2.90	1.94	1.80	0.97	1.94	1.11	1.94	1.94	0.97	2.90
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	0.80	1.60	0.80	1.00	0.60	1.80	1.40	0.40	-	-	-	-
5.4 TS	CE514	Transportation Engineering-I	2.55	2.24	2.24	2.08	2.08	2.08	2.24	1.44	1.92	1.92	1.76	1.76
5.4 P	CE514L	Transportation Engineering-I Lab	1.44	-	-	0.48	0.48	0.48	0.48	-	-	-	-	-
5.5 TS	CE515	Geotechnical Engineering	2.69	2.69	1.80	0.45	0.90	-	-	-	-	-	-	0.45
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	1.42	0.99	0.85	0.57	0.42	-	1.98	-	-	1.70	-	1.42
5.6 P	CE516L	Concrete Technology Lab	-	-	-	-	1.96	1.96	-	2.94	2.94	2.94	-	-
5.8 T	CE517	General Proficiency	0.85	0.85	0.85	0.85	1.71	1.71	1.71	2.56	2.56	2.56	0.85	2.56
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	2.94	0.98	0.98	-	-	-	-	0.98	1.96	-	-	0.98
6.2 TS	CE612	Foundation Engineering	1.00	0.50	-	0.50	-	1.34	-	-	-	-	-	-
6.3 TS	CE613	Transportation Engineering-II	2.45	1.96	1.96	2.12	1.96	1.96	2.28	1.30	1.96	1.47	1.96	1.30
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	1.11	1.85	0.74	0.56	0.37	0.93	0.37	-	-	-	-	-
6.4 P	CE614L	Environmental Engineering-II Lab	1.32	1.65	-	0.99	-	0.99	1.32	-	-	-	-	-
6.5 TS	CE615	Estimation and Valuation	2.36	1.89	0.94	-	0.94	0.31	-	-	0.47	-	-	-
6.6 TS	CE616	Hydrology	1.89	2.27	2.08	1.70	1.70	1.51	1.89	1.32	1.70	1.89	0.95	1.89
6.7 T	CE617	General Proficiency	1.77	1.77	-	1.48	1.77	1.48	1.48	1.77	2.66	2.66	-	1.48
6.8 P	CE618	Survey Camp	1.12	1.12	0.37	0.93	1.12	0.93	0.93	1.12	1.67	1.67	0.37	0.93

Short Code	Long Code	Subject Name	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
7.1 TS	CE711	Theory of Structures-III	1.83	2.75	1.83	1.83	1.83	0.92	0.92	0.92	1.83	0.92	0.92	2.75
7.2 TS	CE712	Design of Structures-III	2.51	2.51	2.25	2.65	2.25	2.51	2.38	2.25	2.25	1.72	1.46	1.46
7.3 TS	CE713	Civil Engineering Planning	2.14	1.81	0.99	0.99	-	0.66	-	-	-	-	-	-
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	2.63	2.30	1.31	2.46	1.81	1.31	2.30	2.13	1.81	1.97	1.64	1.64
7.5_EI_2 TS	CE715B	Advanced Engg. Geoscience	2.00	2.00	1.33	2.00	1.50	1.17	1.83	0.83	-	1.33	0.67	0.67
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	1.32	1.32	1.65	1.48	1.32	1.32	1.48	1.15	0.99	1.48	1.32	1.48
8.2 TS	CE812	Flood Management and River Engineering	1.55	1.55	1.74	1.55	-	1.36	1.16	0.58	0.58	0.39	0.39	0.58
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	2.81	2.81	2.81	2.81	1.68	1.68	0.94	0.94	-	-	-	1.87
8.5_EIV_1 TS	CE815A	Water Power Engineering	1.83	1.00	1.33	2.17	1.17	-	0.50	-	-	-	-	-
8.6 P	CE817	Viva Voce	2.66	0.89	0.89	-	-	-	-	0.89	1.77	2.66	-	0.89
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	2.08	1.77	1.50	1.43	1.36	1.34	1.37	1.39	1.72	1.67	1.11	1.59
		Indirect Outcome	2.80	2.80	2.60	2.13	2.27	2.47	2.53	2.73	2.53	2.73	2.67	2.53
		Overall Outcome	2.22	1.97	1.72	1.57	1.54	1.56	1.60	1.66	1.88	1.88	1.42	1.78

Table A-III-b

PSO attainment for the batch 2011-15

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	0.59	0.59
1.5 TS	HU105	English Communication and Technical Report Writing	-	-	-
1.6 TS	CE106	Engineering Graphics-I	-	0.86	0.25
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 Mechanics and Strength of Materials	0.72	0.59	-
2.4 P	ME203L/CE205L	Engineering Mechanics 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	-	-	-

Short Code	Long Code	Subject Name	PSO1	PSO2	PSO3
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	0.97	0.97	-
3.3 TS	CE313	Engineering Survey	0.82	1.05	0.58
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	0.95	1.33	0.57
3.5 P	CE315L	Construction Practice and Building Drawing Lab	1.39	1.98	0.40
3.6 TS	CE312	Theory of Structures-I	0.82	1.31	0.33
3.8 T	CE318	General Proficiency	-	2.88	-
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	1.17	1.17	0.50
4.5 TS	CE413	Advanced Surveying	1.44	2.24	1.60
4.5 P	CE413L	Advanced Surveying Lab	1.33	2.00	0.83
4.6 TS	CE414	Hydraulic and Hydraulic Machines	0.95	1.07	-
4.6 P	CE414L	Hydraulic and Hydraulic Machines Lab	1.00	1.00	-
4.7 TS	CE415	Engineering Geoscience	1.52	1.52	0.57
4.7 P	CE415L	Engineering Geoscience Lab	1.25	1.50	0.50
4.9 T	CE416	General Proficiency	-	2.97	-
5.1 TS	HU501	Economics and Principles of Management	-	-	-
5.2 TS	CE512	Design of Structures-I	2.66	1.82	1.68
5.3 TS	CE513	Environmental Engineering-I	1.21	1.21	0.75
5.3 P	CE513L	Environmental Engineering-I Lab	1.20	0.60	1.40

Short Code	Long Code	Subject Name	PSO1	PSO2	PSO3
5.4 TS	CE514	Transportation Engineering-I	1.31	1.17	1.02
5.4 P	CE514L	Transportation Engineering-I Lab	0.99	2.48	1.49
5.5 TS	CE515	Geotechnical Engineering	1.31	1.75	1.02
5.5 P	CE515L	Geotechnical Engineering Lab	1.32	1.98	0.50
5.6 TS	CE516	Concrete Technology	0.89	1.14	0.63
5.6 P	CE516L	Concrete Technology Lab	1.25	1.75	0.75
5.8 T	CE517	General Proficiency	-	2.84	-
6.1 TS	CE611	Design of Structures-II	2.52	1.82	1.54
6.1 P	CE611L	Design of Structures-II Lab	-	0.97	-
6.2 TS	CE612	Foundation Engineering	1.75	1.75	0.88
6.3 TS	CE613	Transportation Engineering-II	1.36	1.82	0.76
6.3 P	CE613L	Transportation Engineering-II Lab	0.17	0.33	2.67
6.4 TS	CE614	Environmental Engineering-II	2.16	1.80	1.08
6.4 P	CE614L	Environmental Engineering-II Lab	1.67	1.33	0.67
6.5 TS	CE615	Estimation and Valuation	2.12	2.27	1.51
6.6 TS	CE616	Hydrology	2.20	2.20	1.47
6.7 T	CE617	General Proficiency	0.64	1.92	0.32
6.8 P	CE618	Survey Camp	0.67	2.00	0.33
7.1 TS	CE711	Theory of Structures-III	1.55	1.94	0.97
7.2 TS	CE712	Design of Structures-III	2.71	1.90	1.08
7.3 TS	CE713	Civil Engineering Planning	1.65	2.48	1.82
7.4 TS	CE714	Irrigation Engineering	2.20	2.00	1.60
7.5_EI_1 TS	CE715A	Open Channel Flow	1.92	1.92	0.89
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	2.15	2.48	1.82
8.2 TS	CE812	Flood Management and River Engineering	2.80	2.80	2.00

Short Code	Long Code	Subject Name	PSO1	PSO2	PSO3
8.3 TS	CE813	Construction Management	1.37	1.57	1.17
8.4_EIII_3 TS	CE814B	Design of Substructures	2.82	2.82	2.44
8.5_EIV_1 TS	CE815A	Water Power Engineering	1.65	1.84	0.92
8.6 P	CE817	Viva Voce	1.00	3.00	1.00
8.7 P	CE816	Project-II	2.97	2.97	2.97
		Direct Outcome	1.52	1.80	1.13
		Indirect Outcome	2.38	2.38	2.14
		Overall Outcome	1.69	1.92	1.33

Table A-III-c

PSO attainment for the batch 2012-16

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	0.18	0.54	0.54
1.5 TS	HU105	English Communication and Technical Report Writing	-	-	-
1.6 TS	CE106	Engineering Graphics-I	-	0.90	0.26
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	-	-	-

Short Code	Long Code	Subject Name	PSO1	PSO2	PSO3
2.3 TS	MA203	Mathematics-II	-	-	-
2.4 TS	ME203/CE205	Engineering Mechanics and Strength of Materials	0.90	0.73	-
2.4 P	ME203L/CE205L	Engineering Mechanics 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	0.49	0.66	0.16
3.2 P	CE314L	Basic Fluid Mechanics Lab	0.93	0.93	-
3.3 TS	CE313	Engineering Survey	0.92	1.18	0.65
3.3 P	CE313L	Engineering Survey Lab	1.19	1.98	0.59
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	0.97	1.36	0.58
3.5 P	CE315L	Construction Practice and Building Drawing Lab	1.33	1.90	0.38
3.6 TS	CE312	Theory of Structures-I	0.80	1.28	0.32
3.8 T	CE318	General Proficiency	-	2.75	-
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	1.26	1.26	0.54
4.5 TS	CE413	Advanced Surveying	1.17	1.82	1.30
4.5 P	CE413L	Advanced Surveying Lab	1.33	2.00	0.83

Short Code	Long Code	Subject Name	PSO1	PSO2	PSO3
4.6 TS	CE414	Hydraulic and Hydraulic Machines	0.96	1.09	-
4.6 P	CE414L	Hydraulic and Hydraulic Machines Lab	0.81	0.81	-
4.7 TS	CE415	Engineering Geoscience	1.22	1.22	0.46
4.7 P	CE415L	Engineering Geoscience Lab	1.16	1.39	0.46
4.9 T	CE416	General Proficiency	-	2.68	-
5.1 TS	HU501	Economics and Principles of Management	-	-	-
5.2 TS	CE512	Design of Structures-I	2.63	1.80	1.66
5.3 TS	CE513	Environmental Engineering-I	1.28	1.28	0.80
5.3 P	CE513L	Environmental Engineering-I Lab	1.20	0.60	1.40
5.4 TS	CE514	Transportation Engineering-I	1.44	1.28	1.12
5.4 P	CE514L	Transportation Engineering-I Lab	0.96	2.40	1.44
5.5 TS	CE515	Geotechnical Engineering	1.35	1.80	1.05
5.5 P	CE515L	Geotechnical Engineering Lab	1.33	2.00	0.50
5.6 TS	CE516	Concrete Technology	0.99	1.27	0.71
5.6 P	CE516L	Concrete Technology Lab	1.22	1.71	0.73
5.8 T	CE517	General Proficiency	-	2.56	-
6.1 TS	CE611	Design of Structures-II	2.57	1.86	1.57
6.1 P	CE611L	Design of Structures-II Lab	-	0.98	-
6.2 TS	CE612	Foundation Engineering	1.67	1.67	0.84
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	2.67
6.4 TS	CE614	Environmental Engineering-II	2.22	1.85	1.11
6.4 P	CE614L	Environmental Engineering-II Lab	1.65	1.32	0.66
6.5 TS	CE615	Estimation and Valuation	2.20	2.36	1.57
6.6 TS	CE616	Hydrology	2.27	2.27	1.51
6.7 T	CE617	General Proficiency	0.59	1.77	0.30
6.8 P	CE618	Survey Camp	0.37	1.12	0.19
7.1 TS	CE711	Theory of Structures-III	1.47	1.83	0.92
7.2 TS	CE712	Design of Structures-III	2.65	1.85	1.06

Short Code	Long Code	Subject Name	PSO1	PSO2	PSO3
7.3 TS	CE713	Civil Engineering Planning	1.65	2.47	1.81
7.4 TS	CE714	Irrigation Engineering	2.15	1.96	1.57
7.5_EI_1 TS	CE715A	Open Channel Flow	2.13	2.13	0.99
7.5_EI_2 TS	CE715B	Advanced Engineering Geoscience	1.67	2.00	1.33
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	2.14	2.47	1.81
8.2 TS	CE812	Flood Management and River Engineering	2.71	2.71	1.94
8.3 TS	CE813	Construction Management	1.40	1.60	1.20
8.4_EIII_3 TS	CE814B	Design of Substructures	2.81	2.81	2.43
8.5_EIV_1 TS	CE815A	Water Power Engineering	1.50	1.67	0.83
8.6 P	CE817	Viva Voce	0.89	2.66	0.89
8.7 P	CE816	Project-II	3.00	3.00	3.00
		Direct Outcome	1.50	1.75	1.11
		Indirect Outcome	2.73	2.73	2.60
		Overall Outcome	1.74	1.95	1.41

Table A-III-d

ANNEXURE IV:

1st year academic performance for all the batches who graduated from the program B.E. in Civil Engineering

Academic Performance	Batches					
	2016-17	2015-16	2014-15	2013-14	2012-13	2011-15
Mean of CGPA or Mean Percentage of all successful students (X)	58.21	57.97	61.56	60.96	62.67	61.55
Total no. of successful students (Y)	85	89	89	88	88	89
Total no. of students appeared in the examination (Z)	85	89	89	88	88	89
API = x* (Y/Z)	58.21	57.97	61.56	60.96	62.67	61.55
Average API = (AP1 + AP2 + AP3)/3	$(58.21+57.97+61.56+60.96+62.67+61.55)/6=60.49$					

Table A-IV

ANNEXURE V:
PO attainment of 1st year course by 2011-12 batch

Short Code	Long Code	Subject Name	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
1.1 TS	PH101	Physics-I	1.94	1.55	-	-	-	-	-	-	-	-	-	-
1.1 P	PH101L	Physics-I Lab	1.98	1.98	-	1.98	-	-	-	-	-	-	-	-
1.2 TS	CY102	Chemistry-I	2.05	1.26	-	-	-	0.31	0.47	-	-	-	-	0.47
1.2 P	CY102L	Chemistry-I lab	2.50	1.75	-	1.00	-	-	-	-	-	1.00	-	-
1.3 TS	MA103	Mathematics-I	2.03	2.03	0.81	0.14	-	-	-	-	0.14	-	-	1.36
1.4 TS	CE104	Elements of Civil Engineering	2.54	2.15	0.20	0.78	0.59	-	-	-	-	-	-	-
1.5 TS	HU105	English Communication and Technical Report Writing	-	0.85	-	0.85	-	0.85	0.85	1.13	2.56	1.92	-	2.56
1.6 TS	CE106	Engineering Graphics-I	2.59	2.59	2.09	2.22	1.85	2.22	0.62	-	-	-	-	-
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	2.50	2.00	-	-	-	-	-	-	-	-	-	-
2.1 P	PH201L	Physics-II Lab	1.59	1.59	-	1.59	-	-	-	-	-	-	-	-
2.2 TS	CY202	Chemistry-II	2.14	1.68	0.61	-	-	0.46	0.46	-	0.76	0.76	-	0.76
2.2 P	CY202L	Chemistry-II Lab	2.00	2.00	-	1.25	-	0.50	1.00	-	-	1.00	-	-
2.3 TS	MA203	Mathematics-II	2.46	2.46	1.64	-	-	-	-	-	-	-	-	1.64
2.4 TS	ME203/CE205	Engineering Mechanics and Strength of Materials	1.96	1.39	1.14	1.04	0.59	-	-	-	-	-	-	0.33
2.4 P	ME203L/CE205L	Engineering Mechanics 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	2.39	2.39	2.39	1.60	1.28	0.80	2.39	0.32	0.80	-	-	2.39
2.5 P	EE206L	Basic Electrical Engg.-I Lab	2.53	2.53	-	0.84	-	-	-	-	2.53	0.56	-	2.53
2.6 TS	ME207	Engineering Graphics-II	2.73	2.73	0.91	-	0.36	0.55	-	-	-	-	-	0.91
2.7 S	ME208	Workshop-II	1.60	2.00	-	-	-	-	-	1.00	1.60	-	-	-
		Direct Outcome	2.09	1.89	1.08	1.02	0.98	0.80	0.84	0.75	1.02	0.91	-	1.35

Table A-V-a

PO attainment of 1st year course by 2012-13 batch

Short Code	Long Code	Subject Name	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
1.1 TS	PH101	Physics-I	2.13	1.70	-	-	-	-	-	-	-	-	-	-
1.1 P	PH101L	Physics-I Lab	1.61	1.61	-	1.61	-	-	-	-	-	-	-	-
1.2 TS	CY102	Chemistry-I	2.22	1.36	-	-	-	0.34	0.51	-	-	-	-	0.51
1.2 P	CY102L	Chemistry-I lab	2.50	1.75	-	1.00	-	-	-	-	-	1.00	-	-
1.3 TS	MA103	Mathematics-I	2.48	2.48	0.99	0.17	-	-	-	-	0.17	-	-	1.66
1.4 TS	CE104	Elements of Civil Engineering	2.36	2.00	0.18	0.73	0.54	-	-	-	-	-	-	-
1.5 TS	HU105	English Communication and Technical Report Writing	-	0.97	-	0.97	-	0.97	0.97	1.28	2.90	2.17	-	2.90
1.6 TS	CE106	Engineering Graphics-I	2.69	2.69	2.18	2.31	1.92	2.31	0.64	-	-	-	-	-
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	2.21	1.77	-	-	-	-	-	-	-	-	-	-
2.1 P	PH201L	Physics-II Lab	1.63	1.63	-	1.63	-	-	-	-	-	-	-	-
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	2.00	2.00	-	1.25	-	0.50	1.00	-	-	1.00	-	-
2.3 TS	MA203	Mathematics-II	2.72	2.72	1.81	-	-	-	-	-	-	-	-	1.81
2.4 TS	ME203/ CE205	Engineering Mechanics and Strength of Materials	2.45	1.73	1.43	1.31	0.73	-	-	-	-	-	-	0.41
2.4 P	ME203L/ CE205L	Engineering Mechanics 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	2.07	2.07	2.07	1.38	1.10	0.69	2.07	0.28	0.69	-	-	2.07
2.5 P	EE206L	Basic Electrical Engg.-I Lab	2.22	2.22	-	0.74	-	-	-	-	2.22	0.49	-	2.22
2.6 TS	ME207	Engineering Graphics-II	2.72	2.72	0.91	-	0.36	0.54	-	-	-	-	-	0.91
2.7 S	ME208	Workshop-II	1.55	1.93	-	-	-	-	-	0.97	1.55	-	-	-
Direct Outcome			2.21	1.92	1.28	1.24	1.12	0.84	0.95	0.88	1.42	1.10	-	1.39

Table A-V-b

PO attainment of 1st year course by 2013-14 batch

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
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 Mechanics and Strength of Materials	2.62	1.85	1.53	1.40	0.78	-	-	-	-	-	-	0.44
2.4 P	ME203L/ CE205L	Engineering Mechanics 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	-	-	-
Direct Outcome			2.17	1.87	1.21	1.19	1.06	0.74	0.95	0.87	1.44	1.09	-	1.39

Table A-V-c

PO attainment of 1st year course by 2014-15 batch

Short Code	Long Code	Subject Name	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
1.1 TS	PH101	Physics-I	2.00	1.60	-	-	-	-	-	-	-	-	-	-
1.1 P	PH101L	Physics-I Lab	1.53	1.53	-	1.53	-	-	-	-	-	-	-	-
1.2 TS	CY102	Chemistry-I	2.57	1.58	-	-	-	0.40	0.59	-	-	-	-	0.59
1.2 P	CY102L	Chemistry-I lab	2.45	1.71	-	0.98	-	-	-	-	-	0.98	-	-
1.3 TS	MA103	Mathematics-I	2.66	2.66	1.07	0.18	-	-	-	-	0.18	-	-	1.78
1.4 TS	CE104	Elements of Civil Engineering	2.45	2.08	0.19	0.76	0.57	-	-	-	-	-	-	-
1.5 TS	HU105	English Communication and Technical Report Writing	-	0.87	-	0.87	-	0.87	0.87	1.15	2.60	1.95	-	2.60
1.6 TS	CE106	Engineering Graphics-I	2.56	2.56	2.07	2.20	1.83	2.20	0.61	-	-	-	-	-
1.7 PS	CS107	Introduction to Computing	1.47	1.29	1.66	0.74	1.11	-	-	-	-	-	-	-
1.8 S	ME108	Workshop-I	1.56	1.96	-	-	-	-	-	0.98	1.56	-	-	-
2.1 TS	PH201	Physics-II	1.91	1.53	-	-	-	-	-	-	-	-	-	-
2.1 P	PH201L	Physics-II Lab	1.60	1.60	-	1.60	-	-	-	-	-	-	-	-
2.2 TS	CY202	Chemistry-II	2.74	2.15	0.78	-	-	0.59	0.59	-	0.98	0.98	-	0.98
2.2P	CY202L	Chemistry-II Lab	1.98	1.98	-	1.24	-	0.49	0.99	-	-	0.99	-	-
2.3 TS	MA203	Mathematics-II	2.46	2.46	1.64	-	-	-	-	-	-	-	-	1.64
2.4 TS	ME203/CE205	Engineering Mechanics and Strength of Materials	2.63	1.86	1.53	1.40	0.79	-	-	-	-	-	-	0.44
2.4 P	ME203L/CE205L	Engineering Mechanics and Strength of Materials Lab	2.93	1.68	0.70	2.24	1.96	-	-	-	-	-	-	0.56
2.5 TS	EE206	Basic Electrical Engg.-I	1.92	1.92	1.92	1.28	1.02	0.64	1.92	0.26	0.64	-	-	1.92
2.5 P	EE206L	Basic Electrical Engg.-I Lab	1.92	1.92	-	0.64	-	-	-	-	1.92	0.43	-	1.92
2.6 TS	ME207	Engineering Graphics-II	2.60	2.60	0.87	-	0.35	0.52	-	-	-	-	-	0.87
2.7 S	ME208	Workshop-II	1.58	1.98	-	-	-	-	-	0.99	1.58	-	-	-
		Direct Outcome	2.18	1.88	1.24	1.20	1.09	0.81	0.93	0.84	1.35	1.06	-	1.33

Table A-V-d

PO attainment of 1st year course by 2015-16 batch

Short Code	Long Code	Course Name	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
1.1 TS	PH101	Engg. Physics	1.83	1.46	-	-	-	-	-	-	-	-	-	-
1.1 P	PH101L	Engg. Physics Lab	1.46	-	-	-	-	-	-	-	-	-	-	-
1.2 TS	CY102	Engg. Chemistry	2.19	1.52	1.52	-	-	0.67	1.18	-	-	-	-	1.35
1.2 P	CY102L	Engg. Chemistry Lab	1.96	1.76	-	0.98	-	-	-	-	1.17	1.76	-	-
1.3 TS	MA103	Mathematics-I	2.66	2.66	1.07	0.18	-	-	-	-	0.18	-	-	1.78
1.4 TS	CE114	Mechanics of Solids	1.55	1.09	0.62	0.62	0.16	-	0.16	-	-	-	-	0.47
1.5 TS	HU105	Technical Report Writing	-	0.53	0.53	0.71	-	1.24	0.89	1.24	1.42	2.49	0.89	2.66
1.6 PS	CE117	Engineering Graphics-I	2.83	2.83	2.28	2.43	2.02	2.43	0.67	-	-	-	-	-
1.7 TS	CS106	Computer Programming	0.94	0.85	1.13	0.57	0.57	-	-	-	-	-	-	-
1.7 P	CS106L	Computer Programming Lab	1.44	1.29	1.73	0.86	0.86	-	-	-	-	-	-	-
1.8 P	ME108	Workshop Practice	1.26	1.57	-	-	-	-	-	0.79	1.26	-	-	-
2.1 TS	PH201	Engg. Physics-II	1.86	1.48	-	-	-	-	-	-	-	-	-	-
2.1 P	PH201L	Engg. Physics-II Lab	1.55	-	-	-	-	-	-	-	-	-	-	-
2.2 TS	CY202	Engg. Chemistry-II	2.77	1.78	1.58	0.99	-	1.78	0.99	-	1.58	1.78	-	0.99
2.2 P	CY202L	Engg. Chemistry-II Lab	2.00	2.00	-	-	-	1.25	1.25	-	1.00	1.00	-	-
2.3 TS	MA203	Mathematics-II	2.00	2.00	1.33	-	-	-	-	-	-	-	-	1.33
2.4 TS	ME224	Engineering Mechnaics I	2.54	1.70	1.70	2.12	1.53	-	-	-	-	-	-	0.85
2.4 P	ME224L	Engineering Mechnaics I Lab	2.90	1.45	1.26	1.74	1.26	-	-	-	-	-	-	0.97
2.5 TS	EE245	Basic Electrical Engg. & Electronics	1.42	1.42	1.42	0.94	0.76	0.47	1.42	0.19	0.47	-	-	1.42
2.5 P	EE245L	Basic Electrical Engg. & Electronics Lab	2.02	2.02	-	0.67	-	-	-	-	2.02	0.47	-	2.02
2.6 TS	HU206	Sociology	-	0.58	-	-	-	1.17	-	1.17	0.58	0.58	0.58	1.75
2.7 PS	ME227	Engineering Graphics-II	2.73	2.73	0.91	-	0.36	0.55	-	-	-	-	-	0.91
		Direct attainment	2.00	1.64	1.31	1.07	0.94	1.19	0.94	0.85	1.08	1.35	0.74	1.37

Table A-V-e

PSO attainment of 1st year course by 2011-12 batch

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	0.59	0.59
1.5 TS	HU105	English Communication and Technical Report Writing	-	-	-
1.6 TS	CE106	Engineering Graphics-I	-	0.86	0.25
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 Mechanics and Strength of Materials	0.72	0.59	-
2.4 P	ME203L/CE205L	Engineering Mechanics 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	-	-	-
Direct Outcome			0.54	0.79	0.42

Table A-V-f

PSO attainment of 1st year course by 2012-13 batch

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	0.18	0.54	0.54
1.5 TS	HU105	English Communication and Technical Report Writing	-	-	-
1.6 TS	CE106	Engineering Graphics-I	-	0.90	0.26
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 Mechanics and Strength of Materials	0.90	0.73	-
2.4 P	ME203L/CE205L	Engineering Mechanics 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	-	-	-
Direct Outcome			0.60	0.83	0.40

Table A-V-g

PSO attainment of 1st year course by 2013-14 batch

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 Mechanics and Strength of Materials	0.96	0.78	-
2.4 P	ME203L/CE205L	Engineering Mechanics 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	-	-	-
Direct Outcome			0.62	0.78	0.38

Table A-V-h

PSO attainment of 1st year course by 2014-15 batch

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	0.57	0.57
1.5 TS	HU105	English Communication and Technical Report Writing	-	-	-
1.6 TS	CE106	Engineering Graphics-I	-	0.85	0.24
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 Mechanics and Strength of Materials	0.96	0.79	-
2.4 P	ME203L/CE205L	Engineering Mechanics and Strength of Materials Lab	0.70	1.12	-
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	-	-	-
Direct Outcome			0.62	0.83	0.41

Table A-V-j

PSO attainment of 1st year course by 2015-16 batch

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	-	0.62	0.31
1.5 TS	HU105	Technical Report Writing	-	-	-
1.6 PS	CE117	Engineering Graphics-I	-	0.94	0.27
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	-	-	-
2.2 P	CY202L	Engg. Chemistry-II Lab	-	-	-
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	-	-	-
Direct attainment			-	0.78	0.29

Table A-V-k

ANNEXURE VI

Categorization of courses

Allied Engineering	Basic Science	Core Civil Engineering		Employment Enhancement Courses	Engineering Science	Humanities	Laboratories	Electives
Computer Programming	Engg. Physics	Theory of Structures	Environmental Engineering-II	General Proficiency/Extra-Academic Activity-I	Mechanics of Solids	Technical Report Writing	Engg. Physics Lab	Open Channel Flow
Workshop Practice	Engg. Chemistry	Engineering Surveying-I	Transportation Engineering-II	General Proficiency/Extra Academic Activity-II	Engineering Graphics-I	Sociology	Engg. Chemistry Lab	Advanced Engineering Geoscience
Basic Electrical Engg. & Electronics	Mathematics-I	Basic Fluid Mechanics	Geotechnical Engineering-II	Industrial Training	Engineering Mechanics I	Accountancy for Engineers	Computer Programming Lab	Disaster Management
	Engg. Physics-II	Building Technology-I	Quantity Surveying	Project-I	Engineering Graphics-II	Communication and Presentation Skill	Engg. Physics-II Lab	Environmental Impact Assessment
	Engg. Chemistry-II	Theory of Structures-II	Hydrology & Flood Management	Project-II	Engineering Geoscience	Communication Language Lab	Engg. Chemistry-II Lab	Industrial Wastewater Pollution
	Mathematics-II	Engineering Surveying-II	Theory of Structures-III	Viva-Voce		Engineering Economics	Engineering Mechanics I Lab	Remote Sensing
	Mathematics-III	Hydraulic Engineering	Earthquake Engineering				Basic Electrical Engg. & Electronics Lab	Optimization Methods
	Mathematics-IV	Building Technology-II	Irrigation & River Engineering				Engineering Surveying-I Lab	Watershed Management
		Design of Structures-I	Design of Structure-III				Basic Fluid Mechanics Lab	Ground Improvement Technique
		Environmental Engineering-I	Construction Engineering &				Building Technology-I Lab	Bridge Engineering

Allied Engineering	Basic Science	Core Civil Engineering		Employment Enhancement Courses	Engineering Science	Humanities	Laboratories	Electives
		Management						
		Transportation Engineering-I	Infrastructure Planning				Engineering Geoscience Lab	Entrepreneurship and Economic Development
		Geotechnical Engineering-I					Engineering Surveying-II Lab	Advanced Reinforce Concrete Design
		Concrete Technology					Hydraulic Engineering Lab	Water Resources Engineering
		Design of Structures-II					Building Technology-II Lab	Design of Substructure
							Environmental Engineering-I Lab.	Prestressed Concrete Design
							Transportation Engineering-I Lab.	Water Power Engineering
							Geotechnical Engineering-I Lab.	Advanced Highway Engineering
							Concrete Technology Lab.	Hydraulic Machines
							Survey Camp	Environmental Geotechnics
							Environmental Engineering-II	
							Transportation Engineering-II	

Table A-VI

ANNEXURE VII

Revised B.E. Syllabus (Applicable for the batch enrolled in the year 2015-16 onwards)

Branch: Civil Engineering			Year: First			Semester: First				
Sl. No.	Course No.	Subject	Periods			Evaluation Scheme			Subject Total	Credit
			L	T	P	Internal Assessment	ESE			
1.	PH 101	Engg. Physics-I	3	1		30	20	50	100	150
						TA	CT	Total		
2.	CY 102	Engg. Chemistry-I	3	1		30	20	50	100	150
3.	MA 103	Mathematics-I	3	1		30	20	50	100	150
4.	CE 114	Mechanics of Solids	3	1		30	20	50	100	150
5.	HU 105	Technical Report Writing	2			15	10	25	50	75
6.	CS 106	Computer Programming	2			15	10	25	50	75
Practicals/Drawing/Design										
7.	CE 117	Engineering Graphics-I	1		3	30	20	50	100	150
8.	CS 106L	Computer Programming Lab.			2	15	10	25	25	50
9.	ME 108	Workshop Practice-I			3	50	50	100		100
10.	PH 101L	Engg. Physics-I Lab.			3	10		10	40	50
11.	CY 102L	Engg. Chemistry-I Lab.			3	10		10	40	50

Total Marks: 1150

Total Credits: 34

TA: Teachers assessment

CT: Class Test

ESE: End Semester Examination

Notation followed while assigning course numbers:

First two letters: The department offering the course:

PH: Physics; CY: Chemistry, MA: Maths; HU: Humanities; CE: Civil Engg; ME:Mech Engg;

IP: Industrial Production Engg. ; EE: Electrical Engg; IN: Instrumentation Engg.;

ET: Electronics Engg; CS: Computer Science; CH: Chemical Engg.

1st Digit: Semester in which the course is offered.

2nd Digit: Department for which the course is offered

0: the course is common to some branches; 1: CE; 2: ME; 3: IP; 4:EE; 5: INS; 6: ET; 7: CS; 8: ChE

3rd Digit: Serial number for the specific semester of the branch concerned

L: Denotes laboratory.

Branch: Civil Engineering

Year: First

Semester: Second

Sl. No.	Course No.	Subject	Periods			Evaluation Scheme					
			L	T	P	Internal Assessment			ESE	Subject Total	Credit
Theory						TA	CT	Total			
1.	PH 201	Engineering Physics-II	3	1		30	20	50	100	150	4
2.	CY 202	Engineering Chemistry-II	3	1		30	20	50	100	150	4
3.	MA 203	Mathematics-II	3	1		30	20	50	100	150	4
4.	ME 224	Engineering Mechanics-I	3	1		30	20	50	100	150	4
5.	EE 245	Basic Electrical Engineering & Electronics	3	1		30	20	50	100	150	4
6.	HU206	Sociology	2			15	10	25	50	75	2
Practicals/Drawing/Design											
7.	ME 227	Engineering Graphics-II			3	30	20	50	100	150	4
8.	PH 201L	Engineering Physics-II Lab.			3	10		10	40	50	2
9.	CY 202L	Engineering Chemistry-II Lab.			3	10		10	40	50	2
10.	ME 224L	Engineering Mechanics-I Lab.			3	15	10	25	50	75	2
12.	EE 245L	Basic Electrical Engineering & Electronics Lab.			3	10		10	40	50	2

Total Marks: 1150

Total Credits: 34

TA: Teachers assessment

CT: Class Test

ESE: End Semester Examination

Branch: Civil Engineering

Year: Second

Semester: Third

Sl. No.	Course No.	Subject	Periods			Evaluation Scheme					
			L	T	P	Sessional Examination			ESE	Subject Total	Credit
TA	CT	Total									
1.	MA 301	Mathematics -III	3	1		30	20	50	100	150	4
2.	CE 312	Theory of Structures-I	3	1		30	20	50	100	150	4
3.	CE 313	Engineering Surveying-I	3	1		30	20	50	100	150	4
4.	CE 314	Basic Fluid Mechanics	3	1		30	20	50	100	150	4
5.	CE 315	Building Technology-I	3	1		30	20	50	100	150	4
6.	CE 316	Engineering Geoscience	3	1		30	20	50	100	150	4
Practicals/Drawing/Design											
7.	CE 313L	Engineering Surveying-I			3	30	20	50		50	2
8.	CE 314L	Basic Fluid Mechanics			3	30	20	50		50	2
9.	CE 315L	Building Technology-I			3	30	20	50		50	2
10.	CE 316L	Engineering Geoscience			3	30	20	50		50	2

Total Marks: 1100

Total Credits: 32

TA: Teachers assessment

CT: Class Test

ESE: End Semester Examination

**Branch: Civil
Engineering**

**Year: Second
Semester:
Fourth**

Sl No.	Course No.	Subject	Period			Evaluation Scheme					
			L	T	P	Sessional Examination			ESE	Subject Total	Credit
						TA	CT	Total			
1.	MA 401	Mathematics -IV	3	1		30	20	50	100	150	4
2.	HU 402	Accountancy for Engineers	2			15	10	25	50	75	2
3.	HU 403	Communication & Presentation Skill	2			15	10	25	50	75	2
4.	CE 414	Theory of Structures-II	3	1		30	20	50	100	150	4
5.	CE 415	Engineering Surveying-II	3	1		30	20	50	100	150	4
6.	CE 416	Hydraulic Engineering	3	1		30	20	50	100	150	4
7.	CE 417	Building Technology-II	3	1		30	20	50	100	150	4
Practical/Drawing/Design											
8.	CE 415L	Engineering Surveying-II			3	25	25	50		50	2
9.	CE 416L	Hydraulic Engineering			3	25	25	50		50	2
10.	CE 417L	Building Technology-II			3	25	25	50		50	2
11.	HU 408L	Communication/Language Lab.			3	25	25	50		50	2

Total Marks: 1100

Total Credits: 32

TA: Teachers assessment

CT: Class Test

ESE: End Semester Examination

Branch: Civil Engineering

Year: Third

Semester: Fifth

Sl No.	Course No.	Subject	Period			Evaluation Scheme					
			L	T	P	Sessional Examination			ESE	Subject Total	Credit
TA	CT	Total									
1.	HU 501	Engineering Economics	3	1		30	20	50	100	150	4
2.	CE 512	Design of Structures-I	3	1		30	20	50	100	150	4
3.	CE 513	Environmental Engineering-I	3	1		30	20	50	100	150	4
4.	CE 514	Transportation Engineering-I	3	1		30	20	50	100	150	4
5.	CE 515	Geotechnical Engineering-I	3	1		30	20	50	100	150	4
6.	CE 516	Concrete Technology	3	1		30	20	50	100	150	4
7.	CE 517	General Proficiency/Extra-Academic Activity-I							50	50	2
Practical/Drawing/Design											
8.	CE 513 L	Environmental Engineering-I Lab.			3	25	25	50		50	2
9.	CE 514 L	Transportation Engineering-I Lab.			3	25	25	50		50	2
10.	CE 515 L	Geotechnical Engineering-I Lab.			3	25	25	50		50	2
11.	CE 516 L	Concrete Technology Lab.			3	25	25	50		50	2

Total Marks: 1150

Total Credits: 34

TA: Teachers assessment

CT: Class Test

ESE: End Semester Examination

Branch: Civil Engineering

Year: Third

Semester: Sixth

Sl No.	Course No.	Subject	Period			Evaluation Scheme					
			L	T	P	Sessional Examination			ESE	Subject Total	Credit
TA	CT	Total									
1.	CE 611	Design of Structures-II	3	1		30	20	50	100	150	4
2.	CE 612	Environmental Engineering-II	3	1		30	20	50	100	150	4
3.	CE 613	Transportation Engineering-II	3	1		30	20	50	100	150	4
4.	CE 614	Geotechnical Engineering-II	3	1		30	20	50	100	150	4
5.	CE 615	Quantity Surveying	3	1		30	20	50	100	150	4
6.	CE 616	Hydrology & Flood Management	3	1		30	20	50	100	150	4
7.	CE 617	General Proficiency/Extra Academic Activity-II							50	50	2
Practical/Drawing/Design											
8.	CE 618 L	Survey Camp							100	4	
9.	CE 612 L	Environmental Engineering-II			3	25	25	50		50	2
10.	CE 613 L	Transportation Engineering-II			3	25	25	50		50	2

Total Marks: 1150

Total Credits: 34

TA: Teachers assessment

CT: Class Test

ESE: End Semester Examination

Branch: Civil Engineering

Year: Fourth

Semester: Seventh

Sl No.	Course No.	Subject	Period			Evaluation Scheme					
			L	T	P	Sessional Examination			ESE	Subject Total	Credit
TA						TA	CT	Total			
1.	CE 711	Theory of Structures-III	3	1		50	25	75	100	175	4
2.	CE 712	Earthquake Engineering	3	1		50	25	75	100	175	4
3.	CE 713	Irrigation & River Engineering	3	1		50	25	75	100	175	4
5.	CE 714	Elective-I	3	1		50	25	75	100	175	4
6.	CE 715/ HU 705	Elective-II	3	1		50	25	75	100	175	4
8.	CE 716	Industrial Training								75	2
9.	CE 717	Project-I								150	8

Total Marks: 1100

Total Credits: 30

TA: Teachers assessment

CT: Class Test

ESE: End Semester Examination

Electives:

Elective-I			Elective-II		
Sl. No	Course No	Subject	Sl. No	Course No.	Subject

1.	CE 714(A)	Open Channel Flow	1.	CE 715(A)	Remote Sensing			
2.	CE 714(B)	Advanced Engineering Geoscience	2.	CE 715(B)	Optimization Methods			
3.	CE 714(C)	Disaster Management	3.	CE 715(C)	Watershed Management			
4.	CE 714(D)	Environmental Impact Assessment	4.	CE 715(D)	Ground Improvement Technique			
5.	CE 714(E)	Industrial Wastewater Pollution	5.	CE 715(E)	Bridge Engineering			
			6.	HU 705	Entrepreneurship and Economic Development			

Branch: Civil Engineering

Year: Fourth

Semester: Eighth

Sl No.	Course No.	Subject	Period			Evaluation Scheme				ESE	Subject Total	Credit
			L	T	P	Sessional Examination			TA	CT	Total	
1.	CE 811	Design of Structure-III	3	1		50	25	75	100	175	4	
2.	CE 812	Construction Engineering & Management	3	1		50	25	75	100	175	4	
3	CE 813	Infrastructure Planning				50	25	75	100	175	4	
4.	CE 814	Elective-III	3	1		50	25	75	100	175	4	
5.	CE 815	Elective-IV	3	1		50	25	75	100	175	4	
6.	CE 816	Project-II		6						150	8	
7.	CE 817	Viva-Voce							75	75	2	

Total Marks: 1100

Total Credits: 30

TA: Teachers assessment

CT: Class Test

ESE: End Semester Examination

Electives:

Elective-III

Elective-IV

Sl. No.	Course No.	Subject	Sl. No.	Course No.	Subject
1.	CE 814(A)	Advanced Reinforce Concrete Design	1.	CE 815(A)	Water Power Engineering
2.	CE 814(B)	Water Resources Engineering	2.	CE 815(B)	Advanced Highway Engineering
3.	CE 814(C)	Design of Substructure	3.	CE 815(C)	Hydraulic Machines
4.	CE 814(D)	Prestressed Concrete Design	4.	CE 815(D)	Environmental Geotechnics

Old B.E. Syllabus (Applicable for the batch enrolled before the year 2015-16)

Branch: Common to all branches

Year: First year

Semester: First

Sl. No.	Course No.	Subject	Periods			Evaluation Scheme				Credit	
			L	T	P	Sessional Exam		ESE	Subject Total		
Theory			TA	CT	Tot						
1	PH101	Physics-I	3	1		30	20	50	100	150	4
2	CY102	Chemistry-I	3	1		30	20	50	100	150	4
3	MA103	Mathematics-I	3	1		30	20	50	100	150	4
4	CE104	Elements of Civil Engineering	3	1	3	30	20	50	100	150	4
5	HU105	Eng Communication and Tech report Writing	2			15	10	25	50	75	2
Practicals/Drawing/Design											
6	CE106	Engineering Graphics-I	1		3	30	20	50	100	150	4
7	CS107	Introduction to Computing		2	2	15	10	25	50	75	2
8	ME108	Workshop-I			3	50	50	100		100	2
9	PH101L	Physics-I Lab			3	10		10	40	50	2

10	CY102L	Chemistry-I Lab			3	10		10	40	50	2
Total			15	6	17						

Total Marks: 1100

Total Periods: 38

Total Credits: 30

TA: teachers assessment

CT: Class Test

ESE: End Semester Exam

Notation followed while assigning course numbers:

First two letters: The department offering the course:

PH: Physics; CY: Chemistry, MA: Maths; HU: Humanities; CE: Civil Engg; ME:Mech Engg;

IP: Industrial Production Engg. ; EE: Electrical Engg; IN: Instrumentation Engg.;

ET: Electronics Engg; CS: Computer Science; CH: Chemical Engg.

1st Digit: Semester in which the course is offered.

2nd Digit: Department for which the course is offered

0: the course is common to some branches; 1: CE; 2: ME; 3: IP; 4:EE; 5: INS; 6: ET; 7: CS; 8: ChE

3rd Digit: Serial number for the specific semester of the branch concerned

L: Denotes laboratory.

Branch: Common to all branches

Year: First year

Semester: Second

Sl. No.	Course No.	Subject	Periods			Evaluation Scheme					
			L	T	P	Sessional Exam			ESE	Subject Total	Credit
Theory						TA	CT	Tot			
1	PH201	Physics-II	3	1		30	20	50	100	150	4
2	CY202	Chemistry-II	3	1		30	20	50	100	150	4
3	MA203	Mathematics-II	3	1		30	20	50	100	150	4
4	ME204	Engg. Mechanics-I	2			15	10	25	50	75	2
5	CE205	Strength of Materials	2			15	10	25	50	75	2
6	EE206	Basic Electrical Engg -I	3	1		30	20	50	100	150	4
Practicals/Drawing/Design											
7	ME207	Engineering Graphics-II			4	30	20	50	100	150	4
8	ME208	Workshop-II			3	50	50	100		100	2
9	PH201L	Physics-II Lab			3	10		10	40	50	2
10	CY202L	Chemistry-II Lab			3	10		10	40	50	2
11	ME204L	Engg Mech-I Lab			2	15	10	25		25	1
12	CE205L	Strength of Materials Lab			2	15	10	25		25	1
13	EE206L	Basic Electrical Engg-I Lab			3	10		10	40	50	2
Total			16	4	20						

Total Marks: 1200

Total Periods: 40

Total Credits: 34

TA: teachers assessment

CT: Class Test

ESE: End Semester Exam

3RD Semester BE (CE)

Sl. No.	Course No.	Subject	Periods			Evaluation Scheme					
			L	T	P	Sessional Exam			ESE	Subject Total	Credit
							TA	CT	Total 1		
1	MA 301	Mathematics-III.	3	1		30	20	50	100	150	4
2	CE 312	Theory of Structures-I.	3	1		30	20	50	100	150	4
3	CE 313	Engineering Surveying.	3	1		30	20	50	100	150	4
4	CE 314	Basic Fluid Mechanics.	3	1		30	20	50	100	150	4
5	CE 315	Construction Practices and Building Drawing.	3	1		30	20	50	100	150	4
6	EE 316 & ME 317	Electrical and Mechanical Engineering.	4	0	3	30	20	50	100	150	4
Practicals/Drawing/Design											
7	CE 313 L	Engineering Surveying.			3	30	20	50		50	2
8	CE 314 L	Basic Fluid Mechanics.			3	30	20	50		50	2
9	CE 315 L	Construction Practices and Building Drawing.			3	30	20	50		50	2
10	EE 316 L & ME 317 L	Electrical and Mechanical Engineering.			3	30	20	50		50	2

11	CE 318	General Proficiency						50	50	2
	Total		19	5	15					

Total	SL. NO.	COURSE NO.	SUBJECT	PERIOD	EVALUATION SCHEME	Marks: 1150

Total Periods: 36

Total Credits: 34

Branch: Civil Engineering.

Year: Second.

Semester: Fourth

Theory			L	T	P	Sessional Examination			ESE	Subject Total	Credit
SL. NO.	COURSE NO.	SUBJECT NO.				TA	CT	Total			
1.	MA 411	Advanced Mathematics & Numerical Analysis.	3	1	PERIOD	30	20	50	100	150	4
2.	HU 402	Sociology and Accountancy.	3	1		30	20	50	100	150	4
3.	HU 403	Communication Skill.	2			15	10	25	50	75	2
4.	CE 412	Theory of Structures-II.	3	1		30	20	50	100	150	4
5.	CE 413	Advanced Surveying.	3	1		30	20	50	100	150	4
6.	CE 414	Hydraulics and Hydraulic Machines.	3	1		30	20	50	100	150	4
7.	CE 415	Engineering Geoscience.	3	1		30	20	50	100	150	4
8.	CE 416	General Proficiency.							25	25	1
Practical/Drawing/Design											
9.	CE 413 L	Advanced Surveying.				3	30	20	50	50	2
10.	CE 414 L	Hydraulics and Hydraulic Machines.				3	30	20	50	50	2
11.	CE 415 L	Engineering Geoscience.				3	30	20	50	50	2
Total			20	6	9						

TA: Teachers assessment.

CT: Class Test.

ESE: End Semester Examination.

Total marks: 1150

Total Periods: 35

Total Credits: 33

Branch: Civil Engineering.

Year: Third.

Semester: Fifth

Theory				L	T	P	Sessional Examination			ESE	Subject Total	Credit
							TA	CT	Total			
SL.	COU	SSE	SUBJECT	PERIOD			EVALUATION	SCHEME				
1.	110. HU 501	110.	Economics & Principles of Management.	3	1		30	20	50	100	150	4
2.	CE 512		Design of Structures-I.	3	1		30	20	50	100	150	4
3.	CE 513		Environmental Engineering-I.	3	1		30	20	50	100	150	4
4.	CE 514		Transportation Engineering-I.	3	1		30	20	50	100	150	4
5.	CE 515		Geotechnical Engineering.	3	1		30	20	50	100	150	4
6.	CE 516		Concrete Technology.	3	1		30	20	50	100	150	4
7.	CE 517		General Proficiency.							50	50	2
Practical/Drawing/Design/Mini Project												
8.	CE 513 L		Environmental Engineering-I.			3	30	20	50		50	2
9.	CE 514 L		Transportation Engineering-I.			3	30	20	50		50	2
10.	CE 515 L		Geotechnical Engineering.			3	30	20	50		50	2
11.	CE 516 L		Concrete Technology.			3	30	20	50		50	2
Total				18	6	12						

Total marks: 1150

Total Periods: 36

Total Credits: 34

TA: Teachers assessment.

CT: Class Test.

ESE: End Semester Examination.

Branch: Civil Engineering. Year: Third.

Semester: Sixth

Theory			L	T	P	Sessional Examination			ESE	Subject Total	Credit
						TA	CT	Total			
1.	CE 611	Design of Structures-II.	3	1		30	20	50	100	150	4
2.	CE 612	Foundation Engineering.	3	1		30	20	50	100	150	4
3.	CE 613	Transportation Engineering-II.	3	1		30	20	50	100	150	4
4.	CE 614	Environmental Engineering-II.	3	1		30	20	50	100	150	4
5.	CE 615	Estimation and Valuation.	3	1		30	20	50	100	150	4
6.	CE 616	Hydrology.	3	1		30	20	50	100	150	4
7.	CE 617	General Proficiency.							50	50	2
Practical/Drawing/Design											
8.	CE 617	Survey Camp.			4				50	50	2
9.	CE 611 L	Design of Structures-II.			3	30	20	50		50	2
10.	CE 613 L	Transportation Engineering-II.			3	30	20	50		50	2
11.	CE 614	Environmental Engineering-II.			3	30	20	50		50	2
Total			18	6	13						

Total marks: 1150 Total Periods: 37

Total Credits: 34

TA: Teachers assessment.

CT: Class Test.

ESE: End Semester Examination.

Branch: Civil Engineering.

Year: Fourth.

Semester: Seventh

SL. NO.	COURSE NO.	SUBJECT	PERIOD			EVALUATION SCHEME					
			L	T	P	Sessional Examination			ESE	Subject Total	Credit
Theory						TA	CT	Total			
1.	CE 711	Theory of Structures-III.	3	1		50	25	75	100	175	4
2.	CE 712	Design of Structures-III.	3	1		50	25	75	100	175	4
3.	CE 713	Civil Engineering Planning.	3	1		50	25	75	100	175	4
4.	CE 714	Irrigation Engineering.	3	1		50	25	75	100	175	4
5.	CE 715	Elective-I.	3	1		50	25	75	100	175	4
6.	CE 716	Elective-II.	3	1		50	25	75	100	175	4
7.	CE 717	Training			2					50	2
8.	CE 718	Project-I			8					100	4
Total					18	6	10				

Total marks: 1200

Total Periods: 34

Total Credits: 30

TA: Teachers assessment.

CT: Class Test.

ESE: End Semester Examination.

Electives: -

Elective-I: Open channel Flow/ Advanced Engineering Geosciences/ Environmental Geotechnics / Advance Concrete Technology.

Elective-II: Elements of Remote Sensing/ Earthquake Engineering/ Optimization Technique/ Watershed Management/ Ground Improvement Technique.

Branch: Civil Engineering.

Year: Fourth.

Semester: Eighth

SL. NO.	COURSE NO.	SUBJECT	PERIOD			EVALUATION SCHEME					
			L	T	P	Sessional Examination			ESE	Subject Total	
						TA	CT	Total 1			
1.	CE 811	Design of Structures-IV.	3	1		50	25	75	100	175	4
2.	CE 812	Flood Management & River Engineering.	3	1		50	25	75	100	175	4
3.	CE 813	Construction Management.	3	1		50	25	75	100	175	4
4.	CE 814	Elective-III.	3	1		50	25	75	100	175	4
5.	CE 815	Elective-IV.	3	1		50	25	75	100	175	4
6.	CE 817	General Viva-Voce.							75	75	2
7.	CE 816	Project-II.								150	8
Total			15	9							

Total marks: 1100

Total Periods: 24

Total Credits: 30

TA: *Teachers assessment.*

CT: *Class Test.*

ESE: *End Semester Examination.*

Electives: -

Civil Engineering: Elective-III: Prestressed Concrete Design/ Water Resources Engineering/ Design of Substructures.

Elective-IV: Water Power Engineering/Hydraulic Machines/ Disaster Management/ Environmental Impact assessment.