POORNIMA
COLLEGE OF ENGINEERING

DEPARTMENT OF CIVIL ENGINEERING

CURRICULUM DELIVERY PLAN

OUTLINE-ODD SEM-2023-24

ISI-6, RIICO Institutional Area, Sitapura, Jaipur-302022 (Rajasthan)

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1 The Institution ensures effective curriculum planning and delivery through a well-planned and documented process including Academic calendar and conduct of Continuous Internal Assessment (CIA)

PCE is affiliated to RTU, Kota and follows the planned and prescribed curriculum of University. The Internal Quality Assurance Cell (IQAC) of PCE takes the responsibility of monitoring the effective delivery of the curriculum through a well-planned and documented process. To ensure effective curriculum delivery, a Curriculum Delivery Plan (CDP) is prepared by all PAC's of the respective departments. A CDP includes detailed planning for preparation, verification, execution and adherence to all documents related to academic delivery of all courses. As per the directions received from IQAC, the Examination cell plans for the Continuous Internal Assessment. Examination cell then circulate CIA planning to the PAC. Examination cell sends all the CIE Data to Director's Office for the final approval before its submission to RTU. Detail outlines are as follows.

1. Director Office, PCE receives the curriculum from RTU, Kota through university website.
2. IQAC prepares institute academic calendar aligned with RTU academic calendar considering input received in last GC meeting and other stakeholders. IQAC forwards the Institute Academic Calendar to PAC (Program Assessment Committee) for identifying curriculum gaps and examination cell for CIE. PACs then prepares CDPs after consolidating the course specific planning received from the respective faculty members.
3. A CDP includes activities for gap abridgement which are proposed to be carried out by the faculty members.
4. IQAC also instructs PACs to prepare the department activity calendar. PACs receives approval of department activity calendars and CDPs from DABs before its final approval from IQAC.
5. IQAC also reviews the CDPs approved by DABs and gives suggestions/ approvals periodically. All the activities (SPL, Industrial visit, workshop etc.) planned are taken into consideration for the Department activity calendar after the approval from DABs.
6. Subject wise Course files are prepared by respective faculty, comprising of Syllabus, ABC analysis, Blown-Up, Deployment, Lecture notes, Zero Lecture, Tutorial and Assignment sheets, COs Statements, and Mapping with POs and PSOs.
7. Faculty frequently use ICT tools for more effective content delivery using PPTs, video lectures etc.
8. Student attendance is monitored by tutors and chief proctor office with help of SHARP ERP software. Attendance defaulters are regularly counseled through their tutors for improving their attendance.
9. Institute also conducts Annual Internal Academic Audit for the effectiveness of teaching-learning methodologies and the necessary actions are taken as suggested by the audit team.
10. Conferences, seminars, webinars, workshops, expert lectures, STTPs, and FDPs are organized throughout the year on the recent advances in the field of engineering.
11. Continuous Internal Assessment process includes Midterm exam, Tutorials, Assignments, Quizzes, presentation, Class Test, viva-voce etc.
12. As per the RTU examination scheme, mid semester examinations are conducted centrally by examination cell as per the planning & academic calendar and other assessments are conducted at departmental level.
13. All the evaluations are carried out by the faculty members which include COs-POs attainment, Gap identification & action taken for the fulfillment of gap.
14. Student feedback and attainment of COs-POs are reviewed by the PAC for any revision in planning & Delivery.
15. End term semester examinations are conducted by the RTU, Kota.

2 Vision & Mission Statements

2.1 Vision &Mission Statements of the Institute

Vision of Institution

To create knowledge based society with scientific temper, team spirit and dignity of labor to face the global competitive challenges

Mission of Institution

To evolve and develop skill based systems for effective delivery of knowledge so as to equip young professionals with dedication & commitment to excellence in all spheres of life

2.2 Vision &Mission Statements of the Programme B. Tech. (Civil Engineering)

2.2.1 Vision of Department

To become a globally recognized centre of civil engineering through excellence in technical education, interdisciplinary research and innovation.

2.2.2 Mission of Department

- To develop the **professional skills with outstanding knowledge.**
- To enhance **research & development** in emerging areas of civil engineering.
- Enhancing **linkages with alumni and industry**.
- To produce **ethically able, humane and creative global leaders**.

2.2.3 PEO of the Department

Program Educational Objectives (PEOs

- **PEO 1** Graduates will able to apply **fundamental principles** of science, mathematics and engineering using **modern tools** to solve the **societal and environmental** problems.
- **PEO 2**: Graduates will able to use their practical, field survey, computer and analytic skills to build **industry ready** engineers to solve **multi-disciplinary sustainable projects.**
- **PEO 3**: Graduate applies innovative ideas to improve the **technical competency** in engineering **decisions, lifelong learning, to equip leadership qualities in diverse teams, promote and practice appropriate ethical moral** to become professional engineers.

2.2.4 Program Specific Outcome (PSOs)

1. The graduates will have the ability to **plan, design** and **quality execution of construction projects.**
2. The graduates of the civil engineering program will have the ability to **solve** problems in the **structural, construction management, hydraulics, geotechnical, transportation** and **environmental** disciplines of civil engineering.
3. Graduates will be able to cognizance of **social awareness, interdisciplinary aspects** and **environmental** necessity along with ethical responsibility to have a successful **career** and to become an **entrepreneur**.

2.3 Program Outcomes (PO)

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.

3 Department Academic & Administrative Bodies - Structure & Functions

3.1 Department Advisory Board (DAB)

3.1.1 Primary Objective

Department Advisory Board (DAB) of Department of Civil Engineering, PCE, Jaipur is formed to provide necessary suggestions for developing a structured approach for continuous improvement in curriculum delivery, planning and incorporation of Curricular, Extra and Co-Curricular activities needed to abridge the pre-identified curriculum gaps.

3.1.2 Roles & Responsibilities

1. Suggest improvement in academic plans and recommend standard practices/system for attainment of Program Educational Objectives, Program Outcomes, Program Specific Outcomes and Course Outcomes.
2. Provide guidelines for industry-institute interactions to bridge up curriculum/industry gap and suggest quality improvement initiatives to enhance employability.
3. Develop a structured Curriculum Delivery Plan, Department Academic Calendar and seek approval for them from Internal Quality Assurance Cell.
4. Incorporate suggestions received from Program Assessment Committee (PAC) by including proposed activities for bridging curricular gaps identified.
5. To identify and suggest thrust areas to conduct various activities (final year projects, training courses and additional experiments to meet PEOs, and propose necessary action plan for skill development of students, required for entrepreneurship development and quality improvement.

3.1.3 Department-Wise Composition

S. No.	Category	Nominated by	Name of Members	Address
1	Chairman, DAB-CE	Chairman, IQAC	Dr. Mahesh M. Bundele (Principal & Director, PCE)	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur
2	Member Secretary	Chairman, DAB-CE	Dr. Pran N Dadhich Professor and Head, Department of Civil Engineering	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur
3	Faculty representative-1	Member	Dr. Manoj Gattani Professor, CE	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur
4	Faculty representative-2	Member	Dr. Santanu Malik Associate Professor , CE	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur
5	Final year student (Nominated by HoD)	Member	Chirakshi Agarwal	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur
6	Pre-Final year student (Nominated by HoD)	Member	Shreya Sharma	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur
7	Second year student (Nominated by HoD)	Member	Jahanvi Ninma	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur
8	Industry Person	Member	Mr. Ankita Vashisht,	Deputy Manager, TATA Projects Ltd
9	Industry Person	Member	Mr. Sumit Sharma,	CEO, Horizon Architect
10	Parents	Member	Mr. Subedar Prajapati	AEN, Road Division, Bihar
11	Parents	Member	Mr. Devendra Parashar,	Lecturer, Education Department, Rajasthan
12	Alumni	Member	Mr. Shubham Agrawal,	AEN, Pollution Control Board, Rajasthan
13	Alumni	Member	Mr. Nitish Kumar,	JE, Punjab Electrical Department, Punjab

3.1.4 Meeting Frequency & Objectives

Meeting No.	Meeting Code	Meeting Month-Week	Meeting Objective
1.	DAB-1	July First Week	● Consideration of gaps and proposed activities by PAC last meeting to be implemented in DAC and CDP. ● Prepares final draft of CDP and DAC to be proposed in upcoming IQAC meeting
2.	DAB-2	September Second Week	● Approval / Suggestions of proposals from last PAC Meeting. ● Revision of DAB Drafts for being proposed in upcoming GC
3	DAB-3	December First Week	● Draft preparation for DAC and CDP for upcoming semester after considering inputs from PAC. ● Review Semester closure draft from PAC.
4.	DAB-4	April Last Week / May First Week	● Draft of PCE Academic Calendar and CDP proposed ● Previous session closure with gaps and feedback. ● Completion of ATR-2 for current semester based on last GC sessions and compiling it with ATR-1

3.2 Program Assessment Committee

3.2.1 Primary Objective

The primary objective of Program Assessment Committee (PAC) is to identify, bridge and assess the gaps in Program's Curriculum received from University through attainment calculation.

3.2.2 Roles & Responsibilities

1. Identify gaps in curriculum laid down by University and propose activities for bridging identified gaps.

2. Implement academic plans and standard practices/system for attainment of Program Educational Objectives, Program Outcomes, Program Specific Outcomes and Course Outcomes.

3. Regular Monitoring of curriculum gap abridgement and course deployment practices through pre-defined methods.

4. Execute Industry-Institute Interactions to enhance the employability thereby meeting the industry standards and requirements.

5. Implement Curriculum Delivery Plan & Department Academic Calendar.

3.2.3 Department-Wise Composition

S. No.	Category	Nominated by	Name of Members	Address
1	Chairman, PAC-CE	Chairman, IQAC / Head of Institution	Dr. P. N. Dadhich Professor & HOD	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur

2	Member Secretary	Chairman, PAC-CE	Dr. Manoj Gattani Professor	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur
3	Member	Chairman, PAC-CE	Mr. Balwan Assistant Professor	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur
4	Member	Chairman, PAC-CE	Dr. Santanu Malik Associate Professor , CE	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur
5	Member	Chairman, PAC-CE	Mr. Prateek Sharma Assistant Professor	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur
6	Member	Chairman, PAC-CE	Mr. Sonu Kumar Assistant Professor	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur
7	Member	Chairman, PAC-CE	Mr. Rituraj Singh Assistant Professor	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur
8	Member	Chairman, PAC-CE	Mr. Niraj K Bharati Assistant Professor	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur

3.2.4 Meeting Frequency & Objectives

Meeting No.	Meeting Code	Meeting Month-Week	Meeting Objective
1.	PAC-1	July Last Week	● Execution of Academic, Extra and Co-Curricular activities ● Regular assessment of Academic, Extra and Co-Curricular activities ● Regular calculation of attainments ● Revision of Academics gaps ● Prepared regular report of program for all assessment, attainment & gaps
2.	PAC-2	August Last Week	● Execution of Academic, Extra and Co-Curricular activities ● Regular assessment of Academic, Extra and Co-Curricular activities ● Regular calculation of attainments ● Revision of Academics gaps ● Prepared regular report of program for all assessment, attainment & gaps
3	PAC-3	September Last Week	● Execution of Academic, Extra and Co-Curricular activities ● Regular assessment of Academic, Extra and Co-Curricular activities ● Regular calculation of attainments ● Revision of academics gaps as previous attainment ● Assessment of activities required for being proposed in upcoming GC ● Submit report to Governing Council about previous semester & planning of next semester.
4.	PAC-4	October Last Week	● Inclusion of suggestions for revising gaps ● Execution of Academic, Extra and Co-Curricular activities according to suggestions in GC ● Regular assessment of Academic, Extra and Co-Curricular activities

			● Regular calculation of attainments ● Revision of academics gaps as previous attainment
5.	PAC-5	November Third Week	● Revision of academics gaps as previous attainment ● Regular assessment of Academic, Extra and Co-Curricular activities ● Identification and proposal of gaps and activities to be considered by DAB to prepare Department Academic Calendar and CDP for upcoming semester. ● Semester closure report draft to be prepared ● Elective proposals/CBCS
6.	PAC-6	December Third Week	● Incorporation of suggestions from IQAC and DAB meetings in execution of Semester activities ● Execution and assessment of Academic, Extra and Co-Curricular activities ● Revision of academics gaps as previous attainment ● Calculation of attainments
7.	PAC-7	January Last Week	● Execution of Academic, Extra and Co-Curricular activities ● Regular assessment of Academic, Extra and Co-Curricular activities ● Regular calculation of attainments ● Revision of Academics gaps ● Prepared regular report of program for all assessment, attainment & gaps
8.	PAC-8	February Last Week	● Execution of Academic, Extra and Co-Curricular activities ● Regular assessment of Academic, Extra and Co-Curricular activities ● Regular calculation of attainments ● Revision of Academics gaps ● Prepared regular report of program for all assessment, attainment & gaps
9.	PAC-9	March Last Week	● Execution of Academic, Extra and Co-Curricular activities ● Regular assessment of Academic, Extra and Co-Curricular activities ● Regular calculation of attainments ● Revision of Academics gaps ● Prepared regular report of program for all assessment, attainment & gaps ● Draft preparation of Semester closure
10.	PAC-10	April Second Week	● Execution of Academic, Extra and Co-Curricular activities ● Regular assessment of Academic, Extra and Co-Curricular activities ● Regular calculation of attainments ● Revision of Academics gaps ● Prepared regular report of program for all assessment, attainment & gaps
11.	PAC-11	May Last Week	● Execution of Academic, Extra and Co-Curricular activities ● Regular assessment of Academic, Extra and Co-Curricular activities ● Regular calculation of attainments ● Revision of Academics gaps ● Prepared regular report of program for all assessment, attainment & gaps ● Report submission of Semester closure ● Identification and proposal of gaps and activities to be considered by DAB to prepare Department Academic Calendar and CDP for upcoming semester.
12.	PAC-12	June Last Week	● Feedback of last IQAC and suggestions for new semester to be implemented in CDP and DAC ● Elective proposals/CBCS

4 List of Faculty Members

S. No	College Emp. ID	Name of the Faculty Member	Mobile Phone	Email Address	Designation
1	1267	DR. PANKAJ DHEMLA	9460907039	pankajdhemla@poornima.org	PROFESSOR
2	5382	Mr. SONU KUMAR	8560058069	sonukumaryadav050@gmail.com	ASST PROFESSOR
3	5405	MR. BALWAN	8769040200	sheshna077@gmail.com	ASST PROFESSOR
4	6136	Ms. SUPRIYA BANSAL	8432947266	supriya.bansal@poornima.org	ASST PROFESSOR
5	6358	DR. MANOJ GATTANI	7058368351	manoj.gattani@poornima.org	PROFESSOR
6	6904	Mr. PRATEEK SHARMA	7014337097	sharmaprateek63@gmail.com	ASST PROFESSOR
7	4642	MR. RITURAJ SINGH RATHORE	9406871872	rituraj.rathore@poornima.org	ASST PROFESSOR
8	3405	DR. PRAN NATH DADHICH	9460907039	pran.dadhich@poornima.org	PROFESSOR & Head
9	7524	Mr. RAKESH KUMAR	8113038266	rakesh.kumar@poornima.org	ASST PROFESSOR
10	749	Mr. NIRAJ K BHARATI	9020530415	Niraj.bharati@poornima.org	ASST PROFESSOR
11	8048	Dr. SANTANU MALIK	7005538772	santanu.malik@poornima.org	ASSOCIATE PROFESSOR
12	6962	Mr. MAYANK GUPTA	7007329509	mayank40gupta@gmail.com	ASST PROFESSOR
13	5767	DR. SIDDHARTH	8709065124	siddharth.choudhary@poornima.org	ASSOCIATE PROFESSOR
14	7412	MR. AYUSH MEENA	9571554444	ayush.meena@poornima.org	ASST PROFESSOR

5 Institute Academic Calendar

JULY 2023

Sun	Mon	Tue	Wed	Thu	Fri	Sat
30	31					1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29

AUGUST 2023

Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

SEPTEMBER 2023

Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

OCTOBER 2023

Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

NOVEMBER 2023

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

DECEMBER 2023

Sun	Mon	Tue	Wed	Thu	Fri	Sat
31					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

3 Decades • 8 Institutions • 45000 Alumni Worldwide • 12000+ Students • 1200+ Faculty & Staff

POORNIMA GROUP

Achieving Excellence Together

ACADEMIC CALENDAR 2023-24*#

ODD SEMESTER

JULY 2023

RTU THEORY EXAMINATION OF FIRST YEAR [EVEN SEM 2022-23]

AUGUST 2023

Practical Training [After II, IV, VI Sem.]

Monday 15	Celebration of Independence Day.

SEPTEMBER 2023

Monday 11	Commencement of Classes-Odd Semesters B. Tech. III/V/VII Sem.
Wednesday 06 to Sataturday16	Induction Program B.Tech. I Sem
Monday 18	Commencement of Classes-Odd Semesters B. Tech. I Sem.
Tuesday 05	Celebration of Teachers' Day & Activities under WISE
Friday 15	Engineers' Day
Friday 29	Blood Donation Camp

OCTOBER 2023

Monday 02, 2023	Annual Day KALANIDHI' & Faculty Felicitation Program
Monday 16, 2023	Manthan- Inter-college Debate Competition
Wednesday 11, to Friday 13	First Mid Term Theory & Practical Exam for B.Tech VII Sem
Monday 16, to Saturday 21	First Mid Term Theory & Practical Exam for B.Tech V & III Sem

NOVEMBER 2023

Thursday 02, to Wednesday 08	First Mid Term Theory & Practical Exam for B. Tech I Sem
Tuesday 28 to Thursday 30	Second Mid-Term Theory & Practical Exam for B. Tech VII Sem
Thursday 30, 2023	Last Teaching Day for B.Tech VII Sem
Tuesday 28 to Tuesday, Dec. 05	Second Mid Term Theory & Practical Exam for B.Tech V & III Sem

DECEMBER 2023

As Per RTU Exmination Schedule	End-Term Practical Exams for B. Tech VII Sem
Tuesday 05	Last Teaching Day for B.Tech V & III Sem
As Per RTU Exmination Schedule	End-Term Practical Examination for B.Tech V & III Sem
Monday 18, to Saturday 23	Second Mid-Term Theory & Practical Exam for B. Tech I Sem
Saturday 23	Last Teaching Day for B.Tech I Sem

JANUARY 2023

As Per RTU Exmination Schedule	End-Term Practical Examination for B.Tech I Sem

HOLIDAYS IN ODD SEMESTER

Independence Day Celebration	14 August, Monday - 15 August, Tuesday
Raksha Bandhan	30 August, Wednesday
Krishna Janmashtami	7 September, Thursday - 9 September, Saturday
Vijayadashami	24 October, Tuesday
Diwali Break	10 November, Friday - 14 November, Tuesday
Gurunanak Jayanti	25 November, Saturday - 27 November, Monday
Christmas	23 December, Saturday - 25 December, Monday
New Year	01 January, Monday - 02 January, Tuesday

6 Department Activity Calendar

Poornima College of Engineering, Jaipur

Calendar for Civil Engineering : Odd Semester - Session 2022-23

(A) Academic Processes

S. No.	Activity/ Process	B.Tech. I Sem.	B.Tech. III Sem.	B.Tech. V Sem.	B.Tech. VII Sem.
1	Date of Registration & start of regular classes for students	Wednesday, September 6, 23	Monday, September 11, 23	Monday, September 11, 23	Monday, September 11, 23
2	Orientation programme	Wednesday, September 6, 23 to Saturday September 16, 23	Monday, September 11, 23 to Wednesday, September 13, 23	Monday, September 11, 23 to Wednesday, September 13, 23	Monday, September 11, 23 to Wednesday, September 13, 23
3	I Mid Term Theory & Practical Exam	Thursday, November 2, 23 to Wednesday, November 8, 23	Monday, October 16, 23 to Saturday, October 21, 23	Monday, October 16, 23 to Saturday, October 21, 23	Wednesday, October 11, 23 to Friday, October 13, 23
4	Revision classes	To be declared later according to RTU Exam Schedule			
5	2nd Mid-term theory & Practical Exams	Monday, December 18, 23 to Saturday 23, 2023	Tuesday, November 28, 23 to Tuesday, December 05, 23	Tuesday, November 28, 23 to Tuesday, December 05, 23	Tuesday, November 28, 23 to Thursday, November 30, 23
6	Last Teaching Day	Saturday 23, 2023	Tuesday, December 05, 23	Tuesday, December 05, 23	Monday, November 28, 2022
7	End-Term Practical Exams	As per RTU Examination schedule	As per RTU Examination schedule	As per RTU Examination schedule	As per RTU Examination schedule

(B) Events and Activities

8	Expert Lecture on "Heathy Coping strategies for Mental Well - being"	Thursday, September 14, 2023
9	Engineer's Day Celebration & Webinar on "Contribution of Indian Engineers & scientisit to the world"	Friday, September 15, 2023
10	Awareness session on "Govt exams & Need of aptitude and English"	Saturday, September 23, 2023
11	Session on "Career guidence & Attitude & Self Discipline" & Village Visit	Tuesday, September 26, 2023
12	Language and Communication Skills Workshop	Wednesday, September 27 to Friday, September 15, 2023

13	Training Session on Remote Sensing & G.I.S	Wednesday, October 4, 23 to Thursday, October 5, 23
14	Mock Drive & GD Session	Tuesday, October 10, 2023
15	Industrial visit of ULTRA-Tech Lab	Thursday, October 12, 2023
16	Training Session for Lab Technician on" How to Conduct experiments smoothly & safely"	Monday, October 16, 23 to Wednesday, October 18, 23
17	Site Visit (Road/Tunnel/Bridge/Building Project)	Thursday, October 26, 2023
18	Mock Drive & GD Session	Tuesday, October 31, 2023
19	Faculty development programme for Teachers by NITTTR Chandigarh on "OBE based NBA & NAAC Accreditation"	Monday, November 6, 23 to Saturday, November 11, 23
20	Mock Drive & GD Session	Tuesday, November 14, 2023
21	3 Days Survey Camp	Tuesday, November 14,23 to Thursday, November 16, 2023
22	Placement Drive	Wednesday, November 29, 2023

(C) Holidays

23	Independence Day	Monday, August 14-15, 2023
24	Raksha Bandhan	Wednesday, August 30, 2023
25	Shri Krishna Janmashtami	Thursday, September 7-9, 2023
26	Vijay Dashmi	Tuesday, October 24, 2023
27	Diwali Break	Friday, November 10-14, 2023
28	Guru Nanak Jayanti	Saturday, November 25-27, 2023
29	Christmas	Saturday, December 23-25, 2023
30	New Year	Monday, January 01-02, 2024

7 Teaching Scheme

7.1 RTU Teaching Scheme

RAJASTHAN TECHNICAL UNIVERSITY, KOTA

Teaching & Examination Scheme
B.Tech. : Civil Engineering
2nd Year - III Semester

SN	Category	Course Code	Course Title	Contact hrs/week L	T	P	Marks Exm Hrs	IA	ETE	Total	Cr
THEORY											
1	BSC	3CE2-01	Advance Engineering Mathematics -I	3	0	0	3	30	70	100	3
2	HSMC	3CE1-02/ 3CE1-03	Technical Communication /Managerial Economics & Financial Accounting	2	0	0	2	30	70	100	2
3	ESC	3CE3-04	Engineering Mechanics	2	0	0	2	30	70	100	2
4	PCC	3CE4-05	Surveying	3	0	0	3	30	70	100	3
5		3CE4-06	Fluid Mechanics	2	0	0	2	30	70	100	2
6		3CE4-07	Building Materials and Construction	3	0	0	3	30	70	100	3
7		3CE4-08	Engineering Geology	2	0	0	2	30	70	100	2
			Sub Total	17	0	0					17
PRACTICAL & SESSIONAL											
8	PCC	3CE4-21	Surveying Lab	0	0	3		60	40	100	1.5
9		3CE4-22	Fluid Mechanics Lab	0	0	2		60	40	100	1
10		3CE4-23	Computer Aided Civil Engineering Drawing	0	0	3		60	40	100	1.5
11		3CE4-24	Civil Engineering Maretials Lab	0	0	2		60	40	100	1
12		3CE4-25	Geolgy Lab	0	0	2		60	40	100	1
13	PSIT	3CE7-30	Industrial Training	0	0	1		60	40	100	1
14	SODECA	3CE8-00	Social Outreach, Discipline & Extra Curricular Activities							100	0.5
			Sub- Total	0	0	13					7.5
			TOTAL OF III SEMESTER	17	0	13					24.5

***L:** Lecture, **T:** Tutorial, **P:** Practical, **Cr:** Credits*

***ETE:** End Term Exam, **IA:** Internal Assessment*

Office of Dean Academic Affairs
Rajasthan Technical University, Kota

Scheme of 2nd Year B. Tech. (CE) for students admitted in Session 2021-22 onwards. Page 1

RAJASTHAN TECHNICAL UNIVERSITY, KOTA

Teaching & Examination Scheme
B.Tech. : Civil Engineering
3rd Year –V Semester

SN	Category	Course Code	Course Title	Contact hrs/week L	T	P	Marks Exm Hrs	IA	ETE	Total	Cr
THEORY											
1	ESC	5CE3-01	Construction Technology & Equipments	2	0	0	2	20	80	**100**	**2**
2	PCC/ PEC	5CE4-02	Structural Analysis-I	2	0	0	2	20	80	**100**	**2**
3		5CE4-03	Design of Concrete Structures	3	0	0	3	30	120	**150**	**3**
4		5CE4-04	Geotechnical Engineering	3	0	0	3	30	120	**150**	**3**
5		5CE4-05	Water Resource Engineering	2	0	0	2	20	80	**100**	**2**
6		Departmental Elective-I:		2	0	0	2	20	80	**100**	**2**
		5CE5-11	Air & Noise Pollution and Control								
		5CE5-12	Disaster Management								
		5CE5-13	Town Planning								
7		Departmental Elective-II:		2	0	0	2	20	80	**100**	**2**
		5CE5-14	Repair and Rehabilitation of Structures								
		5CE5-15	Ground Improvement Techniques								
		5CE5-16	Energy Science & Engineering								
		Sub Total		**16**	**0**	**0**		**160**	**640**	**800**	**16**
PRACTICAL & SESSIONAL											
8	PCC	5CE4-21	Concrete Structures Design	0	0	3	3	45	30	**75**	**1.5**
9		5CE4-22	Geotechnical Engineering Lab	0	0	3	3	45	30	**75**	**1.5**
10		5CE4-23	Water Resource Engineering Design	0	0	2	2	30	20	**50**	**1**
11	PSIT	5CE7-30	Industrial Training	0	0	1		75	50	**125**	**2.5**
12	SODECA	5CE8-00	Social Outreach, Discipline & Extra Curricular Activities	0	0	0		0	25	**25**	**0.5**
		Sub- Total		**0**	**0**	**9**		**195**	**155**	**350**	**7**
		TOTAL OF V SEMESTER		**16**	**0**	**9**		**355**	**795**	**1150**	**23**

L: Lecture, T: Tutorial, P: Practical, Cr: Credits
ETE: End Term Exam, IA: Internal Assessment

Office of Dean Academic Affairs
Rajasthan Technical University, Kota

RAJASTHAN TECHNICAL UNIVERSITY, KOTA

Scheme & Syllabus

IV Year- VII & VIII Semester: B. Tech. (Civil Engineering)

Teaching & Examination Scheme
B.Tech.: Civil Engineering
4th Year - VII Semester

SN	Category	Course Code	Course Title	Hours Per Week			Marks				Cr
				L	T	P	Exm Hrs	IA	ETE	Total	
			THEORY								
1	PCC	7CE4-01	Transportation Engineering	3	0	0	3	30	120	**150**	**3**
2	OE		Open Elective-I	3	0	0	3	30	120	**150**	**3**
			Sub Total	**6**	**0**	**0**		**60**	**240**	**300**	**6**
			PRACTICAL & SESSIONAL								
3	PCC	7CE4-21	Road Material Testing Lab	0	0	2		30	20	**50**	**1**
4		7CE4-22	Professional Practices & Field Engineering Lab	0	0	2		30	20	**50**	**1**
5		7CE4-23	Soft Skills Lab	0	0	2		30	20	**50**	**1**
6		7CE4-24	Environmental Monitoring and Design Lab	0	0	2		30	20	**50**	**1**
7	PSIT	7CE7-30	Practical Training	1	0	0		75	50	**125**	**2.5**
8		7CE7-40	Seminar	2	0	0		60	40	**100**	**2**
9	SODECA	7CE8-00	SODECA	0	0	0		0	25	**25**	**0.5**
			Sub- Total	**3**	**0**	**8**		**255**	**195**	**450**	**9**
			TOTAL OF VII SEMESTER	**9**	**0**	**8**		**315**	**435**	**750**	**15**

L: *Lecture,* ***T:*** *Tutorial,* ***P:*** *Practical,* ***Cr:*** *Credits*
ETE: *End Term Exam,* ***IA:*** *Internal Assessment*

Office of Dean Academic Affairs
Rajasthan Technical University, Kota

8 PCE Teaching Scheme

Year	Sem	Course Name	Subject Code	No. of Sec	No. of Batches	Batch Size (T/H/F)	Total Load (L)	Total Load (T)	Total Load (P)	Total Load (L+T+P)	Teaching Dept.	Cat.
2	3	Engineering Mechanics	3CE3-04	1	3		2	0	0	2	CIVIL	ESC
2	3	Engineering Mechanics	3CE3-04	1	3		0	3	0	3	CIVIL	ESC
2	3	Fluid Mechanics	3CE3-06	1	3		3	0	0	3	CIVIL	PCC
2	3	Surveying	3CE3-05	1	3		3	0	0	3	CIVIL	PCC
2	3	Advance Engineering Mathematics -I	3CE2-01	1	3		3	0	0	3	MATHS	BSC
2	3	Advance Engineering Mathematics -I	3CE2-01	1	3		0	3	0	3	MATHS	BSC
2	3	Building Materials and Construction	3CE3-07	1	3		3	0	0	3	CIVIL	PCC
2	3	Technical Communication	3CE1-02	1	3		2	0	0	2	ENGLISH	HSMC
2	3	Engineering Geology	3CE3-08	1	3		2	0	0	2	CIVIL	PCC
2	3	Civil Engineering Materials Lab	3CE4-24	1	3		0	0	6	6	CIVIL	PCC
2	3	Geology Lab	3CE4-25	1	3		0	0	3	3	CIVIL	PCC
2	3	Computer Aided Civil Engineering Drawing	3CE4-23	1	3		0	0	6	6	CIVIL	PCC
2	3	Fluid Mechanics Lab	3CE4-22	1	3		0	0	6	6	CIVIL	PCC
2	3	Surveying Lab	3CE4-21	1	3		0	0	6	6	CIVIL	PCC
2	3	Industrial training/Project & Seminar	3CE4-30	1	2		0	0	2	2	CIVIL	PCC
3	5	Design of Concrete Structures	5CE4-03	1	3		3	0	0	3	CIVIL	PCC
3	5	Geotechnical Engineering	5CE4-04	1	3		3	0	0	3	CIVIL	PCC
3	5	Geotechnical Engineering	5CE4-04	1	3		0	3	0	3	CIVIL	PCC
3	5	Construction Technology & Equipments	5CE3-01	1	3		2	0	0	2	CIVIL	ESC
3	5	Structural Analysis-I	5CE4-02	1	3		3	0	0	3	CIVIL	PCC
3	5	Structural Analysis-I	5CE4-02	1	3		0	3	0	3	CIVIL	PCC
3	5	Water Resourse Engineering	5CE4-05	1	3		3	0	0	3	CIVIL	PCC
3	5	Ground Improvement Techniques/Repair & Rehabilitation of srtucture	5CE5-14/ 5CE-15	2	3		6	0	0	6	CIVIL	PEC
3	5	Disaster Management/Town Planning	5CE5-12/5CE5-13	2	3		6	0	0	6	CIVIL	PEC
3	5	Concrete Structures Design	5CE4-21	1	3		0	0	6	6	CIVIL	PCC

3	5	Geotechnical Engineering Lab	5CE4-22	1	3		0	0	6	6	CIVIL	PCC
3	5	Water Resource Engineering Design	5CE4-23	1	3		0	0	6	6	CIVIL	PCC
3	5	Industrial training/Project & Seminar	5CE7-30	1	2		0	0	4	4	CIVIL	PCC
4	7	Transportation Engineering	7CE4-01	1	2		3	0	0	3	CIVIL	PCC
4	7	Environmental Impact Analysis/Disaster Management	7CE6-60.1/ 7CE6-60.2	1	2		3	0	0	6	CIVIL	PCC
4	7	Road Material Testing Lab	7CE4-21	1	3		0	0	6	6	CIVIL	PCC
4	7	Professional Practices & Field Engineering Lab	7CE4-22	1	3		0	0	6	6	CIVIL	PCC
4	7	Soft Skills Lab	7CE4-23	1	3		0	0	6	6	English	PCC
4	7	EnvironmentalMonitoring and Design Lab	7CE4-24	1	3		0	0	6	6	CIVIL	PCC
4	7	Practical Training	7CE7-30	1	3	H	0	0	3	3	CIVIL	PSIT
4	7	Seminar	7CE7-40	1	3	H	0	0	6	6	CIVIL	PSIT
4	7	Project	7CE7-Project	1	2	T	0	0	8	8	CIVIL	PSIT
4	7	Social Outreach, Discipline & Extra Curricular Activities	7CE8-00	1	2		0	0	0	0	SODECA	SODECA

8.1 Marking Scheme

MARKING SCHEME FOR PRACTICAL EXAM, ODD SEM., 2021-22,		EXAM & SECRECY CELL, PCE									
		I+II Mid Term Exam			Atten & Performance.			End Term Exam			Max.
Code	SUBJECT	Exp.	Viva	Total	Attn.	Perf.	Total	Exp.	Viva	Total	Marks
1FY2-20	Engineering Physics Lab	30	10	40	10	30	40	30	10	40	100
1FY2-21	Engineering Chemistry Lab	30	10	40	10	30	40	30	10	40	100
1FY1-22	Language Lab	30	10	40	10	30	40	30	10	40	100
1FY1-23	Human Values Activities & Sports	30	10	40	10	30	40	30	10	40	100
1FY3-24	Computer Programming Lab	30	10	40	10	30	40	30	10	40	100
1FY3-25	Manufacturing Practices Workshop	30	10	40	10	30	40	30	10	40	100
1FY3-26	Basic Electrical Engineering Lab	30	10	40	10	30	40	30	10	40	100
1FY3-27	Basic Civil Engineering Lab	30	10	40	10	30	40	30	10	40	100
1FY3-28	Computer Aided Engineering Graphics	30	10	40	10	30	40	30	10	40	100
1FY3-29	Computer Aided Machine Drawing	30	10	40	10	30	40	30	10	40	100
3CE4-21	Surveying Lab	30	10	40	10	30	40	30	10	40	100
3CE4-22	Fluid Mechanics Lab	30	10	40	10	30	40	30	10	40	100
3CE4-23	Computer Aided Civil Engineering Drawing	30	10	40	10	30	40	30	10	40	100
3CE4-24	Civil Engineering Maretials Lab	30	10	40	10	30	40	30	10	40	100
3CE4-25	Geology Lab	30	10	40	10	30	40	30	10	40	100
3CE7-30	Training Seminar			60					40		100
3CS4-21	Data Structures and Algorithms Lab	30	10	40	10	30	40	30	10	40	100
3CS4-22	Object Oriented Programming Lab	30	10	40	10	30	40	30	10	40	100
3CS4-23	Software Engineering Lab	30	10	40	10	30	40	30	10	40	100
3CS4-24	Digital Electronics Lab	30	10	40	10	30	40	30	10	40	100
3CS7-30	Training Seminar			60					40		100
3EC4-21	Electronics Devices Lab	30	10	40	10	30	40	30	10	40	100
3EC4-22	Digital System Design Lab	30	10	40	10	30	40	30	10	40	100
3EC4-23	Signal Processing Lab	30	10	40	10	30	40	30	10	40	100
3EC3-24	Computer Programming Lab-I	30	10	40	10	30	40	30	10	40	100
3EC7-30	Training Seminar			60					40		100
3EE4-21	Analog Electronics Lab	30	10	40	10	30	40	30	10	40	100
3EE4-22	Electrical Machine-I Lab	30	10	40	10	30	40	30	10	40	100
3EE4-23	Electrical circuit design Lab	30	10	40	10	30	40	30	10	40	100
3EE7-30	Training Seminar			30					20		100
3IT4-21	Data Structures and Algorithms Lab	30	10	40	10	30	40	30	10	40	100
3IT4-22	Object Oriented Programming Lab	30	10	40	10	30	40	30	10	40	100
3IT4-23	Software Engineering Lab	30	10	40	10	30	40	30	10	40	100
3IT4-24	Digital Electronics Lab	30	10	40	10	30	40	30	10	40	100
3IT7-30	Training Seminar			60					40		100
3ME4-21	Machine drawing practice	30	10	40	10	30	40	30	10	40	100
3ME4-22	Materials Testing Lab	30	10	40	10	30	40	30	10	40	100
3ME4-23	Basic Mechanical Engineering Lab	30	10	40	10	30	40	30	10	40	100
3ME4-24	Programming using MAT LAB	30	10	40	10	30	40	30	10	40	100
3ME7-30	Training Seminar			60					40		100
5CE4-21	Concrete Structures Design	22	8	30	8	22	30	22	8	30	75
5CE4-22	Geotechnical Engineering Lab	22	8	30	8	22	30	22	8	30	75
5CE4-23	Water Resource Engineering Design	15	5	20	5	15	20	15	5	20	50
5CE7-30	Industrial Training			75					50		125
5CS4-21	Computer Graphics & Multimedia Lab	15	5	20	5	15	20	15	5	20	50
5CS4-22	Compiler Design Lab	15	5	20	5	15	20	15	5	20	50
5CS4-23	Analysis of Algorithms Lab	15	5	20	5	15	20	15	5	20	50
5CS4-24	Advance Java Lab	15	5	20	5	15	20	15	5	20	50
5CS7-30	Industrial Training			75					50		125
5EC4-21	RF Simulation Lab	22	8	30	8	22	30	22	8	30	75
5EC4-22	Digital Signal Processing Lab	22	8	30	8	22	30	22	8	30	75
5EC4-23	Microwave Lab	15	5	20	5	15	20	15	5	20	50
5EC7-30	Industrial Training			75					50		125
5EE4-21	Power System - I Lab	15	5	20	5	15	20	15	5	20	50
5EE4-22	Control System Lab	15	5	20	5	15	20	15	5	20	50
5EE4-23	Microprocessor Lab	15	5	20	5	15	20	15	5	20	50
5EE4-24	System Programming Lab	15	5	20	5	15	20	15	5	20	50
5EE7-30	Industrial Training			75					50		125
5IT4-21	Computer Graphics & Multimedia Lab	15	5	20	5	15	20	15	5	20	50
5IT4-22	Compiler Design Lab	15	5	20	5	15	20	15	5	20	50
5IT4-23	Analysis of Algorithms Lab	15	5	20	5	15	20	15	5	20	50
5IT4-24	Advanced Java Lab	15	5	20	5	15	20	15	5	20	50
5IT7-30	Industrial Training			75					50		125
5ME3-21	Mechatronic Lab	15	5	20	5	15	20	15	5	20	50
5ME4-22	Heat Transfer lab	15	5	20	5	15	20	15	5	20	50
5ME4-23	Production Engineering Lab	15	5	20	5	15	20	15	5	20	50
5ME4-24	Machine Design Practice I	15	5	20	5	15	20	15	5	20	50
5ME7-30	Industrial Training			75					50		125
7CE4-21	Road Material Testing Lab	15	5	20	5	15	20	15	5	20	50
7CE4-22	Professional Practices & Field Engineering	15	5	20	5	15	20	15	5	20	50
7CE4-23	Soft Skills Lab	15	5	20	5	15	20	15	5	20	50
7CE4-24	Environmental Monitoring and Design Lab	15	5	20	5	15	20	15	5	20	50
7CE7-30	Practical Training			75					50		125
7CE7-40	Seminar			60					40		100
7CS4-21	Internet of Things Lab	30	10	40	10	30	40	30	10	40	100
7CS4-22	Cyber Security Lab	30	10	40	10	30	40	30	10	40	100
7CS7-30	Industrial Training			75					50		125
7CS7-40	Seminar			60					40		100
7EC4-21	VLSI Design Lab	30	10	40	10	30	40	30	10	40	100
7EC4-22	Advance communication lab (MATLAB	15	5	20	5	15	20	15	5	20	50
7EC4-23	Optical Communication Lab	15	5	20	5	15	20	15	5	20	50
7EC7-30	Industrial Training			75					50		125
7EC7-40	Seminar			60					40		100
7EE4-21	Embedded Systems Lab	30	10	40	10	30	40	30	10	40	100
7EE4-22	Advance control system lab	30	10	40	10	30	40	30	10	40	100
7EE7-30	Industrial Training			75					50		125
7EE7-40	Seminar			60					40		100
7IT4-21	Big Data Analytics Lab	30	10	40	10	30	40	30	10	40	100
7IT4-22	Cyber Security Lab	30	10	40	10	30	40	30	10	40	100
7IT7-30	Industrial Training			75					50		125
7IT7-40	Seminar			60					40		100
7ME4-21	FEA Lab	22	8	30	8	22	30	22	8	30	75
7ME4-22	Thermal Engineering Lab II	22	8	30	8	22	30	22	8	30	75
7ME4-23	Quality Control Lab	15	5	20	5	15	20	15	5	20	50
7ME7-30	Industrial Training *			75					50		125
7ME7-40	Seminar *			60					40		100

NOTE: - (1) In Attendance & Performance marks should be given on the basis of student overall performance in semester i. e. continuous evaluation.
(2) In Common Pool marks should be given by HOD on the basis of student Assignment,Non Syllabus Activity,Online Exam Exam,Application/Survey / Case Study based Learning, Pre-Placement Activity, Department Level Career Oriented Activities through out the semester.

9 Department Load Allocation

POORNIMA COLLEGE OF ENGINEERING,JAIPUR									
DEPARTMENT OF CIVIL ENGINEERING									
FACULTY SUBJECT WISE ALLOCATION SESSION 2023-24(ODD)									
S. No	**Faculty Name**	**Sec**	**SUB. CODE**	**SUBJECT NAME**	**L**	**T**	**P**	**Total Load**	**Grand Total**
1	Dr. Manoj Gattani	A	7CE6-60.1	Environmental Impact Analysis	3	0	0	3	**12**
		A	7CE4-24	Environmental Monitoring and Design Lab	0	0	6	6	
		A	3CE4-30	Practical Training	0	0	1	1	
		A	7CEPR	Project	0	0	2	2	
2	Dr. P. N. Dadhich	A	3CE3-08	Engineering Geology	3	0	0	3	**11**
		A	3CE4-25	Geology Lab	0	0	6	6	
		A	7CEPR	Project	0	0	2	2	
3	Mr. Balwan Seshma	A	3CE3-07	Building Materials and Construction	3	0	0	3	**16**
		A	3CE4-24	Civil Engineering Materials Lab	0	0	6	6	
		A	3CE-NSP	NSP	0	0	2	2	
		A	PMTPO	I3 Day	1	0	0	1	
		A	3CE4-31	Industrial training	2	0	0	2	
		A	7CEPR	Project	0	0	2	2	
4	Mr. NIRAJ KUMAR BHARATI	A	3CE3-04	Engineering Mechanics	2	3	0	5	**16**
		A	5CE4-03	Design of Concrete Structures	3	0	0	3	
		A	5CE4-21	Concrete Structures Design	0	0	6	6	
		A	PMTPO	Placement Coordinator	0	0	2	2	
5	Dr. SANTANU MALIK	A	3CE4-30	Practical Training	0	0	1	1	**14**
		A	5CE4-02	Structural Analysis-I	3	3	0	6	
		A	7CE6-60.2	Disaster Management	3	0	0	3	
		A	7CEPR	Project	0	0	2	2	
		A	7CE4-40	Seminar	0	0	2	2	
6	Mr. SONU KUMAR	A	5CE5-12	Disaster Management	2	0	0	2	**18**
		A	5CE4-04	Geotechnical Engineering	4	0	0	4	
		A	5CE4-22	Geotechnical Engineering Lab	0	0	6	6	

		A	3CE4-23	Computer Aided Civil Engineering Drawing	0	0	6	6	
7	Prateek Sharma	A	3CE3-05	Surveying	3	0	0	3	**15**
		A	3CE4-21	Surveying Lab	0	0	6	6	
		A	3CE-NSP	NSP	0	0	2	2	
		A	5CE5-13	Ground Improvement Techniques	2	0	0	2	
		A	7CE7-30	Industrial training	2	0	0	2	
8	Dr.PANKAJ DHEMLA	A	5CE5-14	Town Planning	2	0	0	2	**6**
		A	7CE4-30	Practical Training	0	0	2	2	
		A	5CE7-30	Industrial training	0	0	1	1	
		A	7CEPR	Project	0	0	1	1	
9	Ms. SUPRIYA BANSAL	A	7CEPR	Project	0	0	3	3	**15**
		A	5CE4-05	Water Resource Engineering	3	3	0	6	
		A	5CE4-23	Water Resource Engineering Design	0	0	6	6	
10	Mr. RAKESH KUMAR	A	5CE5-15	Repair and Rehabilitation of Structures	2	0	0	2	**19**
		A	5CE3-01	Construction Technology & Equipments	2	0	0	2	
		A	7CE4-01	Transportation Engineering	3	0	0	3	
		A	7CE4-21	Road Material Testing Lab	0	0	6	6	
		A	5CE7-30	Industrial training	0	0	2	2	
		A	5CE4-04	Geotechnical Engineering	0	3	0	3	
		A	7CE4-40	Seminar	0	0	1	1	
11	Mr. RITURAJ SINGH RATHORE	A	3CE3-06	Fluid Mechanics	3	0	0	3	**16**
		A	3CE4-22	Fluid Mechanics Lab	0	0	6	6	
		A	7CE4-22	Professional Practices & Field Engineering Lab	0	0	6	6	
		A	7CE4-40	Seminar	0	0	1	1	
12	Dr. SIDDHARTH	A	1FY3-12	Basic Civil Engineering	3	0	0	3	**15**
		A	1FY3-28	Basic Civil Engineering Lab	0	0	6	6	
		A	1FY3-30	Basic Civil Engineering Lab	0	0	6	6	
13	Mr. MAYANK GUPTA	A	1FY3-09	Basic Civil Engineering	3	0	0	3	**15**
		A	1FY3-29	Basic Civil Engineering Lab	0	0	6	6	
		A	1FY3-11	Basic Civil Engineering	3	0	0	3	
		A	1FY3-10	Basic Civil Engineering	3	0	0	3	

14	Mr. Ayush Meena	A	1FY3-13	Basic Civil Engineering	3	0	0	3	**15**
		A	1FY3-27	Basic Civil Engineering Lab	0	0	6	6	
		A	1FY3-31	Basic Civil Engineering Lab	0	0	6	6	
15	Dr. Shilpi Jain	A	3CE2-01	Advance Engineering Mathematics -I	3	3	0	6	**6**
16	Dr. Shalini Shah	A	3CE1-02	Technical Communication	2	0	0	2	**8**
		A	7CE4-23	Soft Skills Lab	0	0	6	6	

10 Time Table

10.1 Academic Time Table

Department of Civil Engineering (Odd Week)

III SEM (PCE)

Minha Escola

	1 8:00 - 9:00	2 9:00 - 10:00	3 10:00 - 11:00	LUNCH 11:00 - 11:50	4 11:50 - 12:50	5 12:50 - 13:50	6 13:50 - 14:50
Mo	(3CE2-01) AEM 1004 SJ	(3CE3-08) EG 1004 PN	(3CE3-04) EM 1004 NKB		(3CE4-30) PT 1004 MG	(3CE4-25) EG LAB 2008-A B1 PN (3CE4-23) CACED Lab 1001-A B2 SK (3CE4-24) CEM LAB 4011 B3 BS	
Tu	(3CE4-21) Sur Lab 1003 B1 PS (3CE4-25) EG LAB 2008-A B2 PN (3CE4-23) CACED Lab 1001-A B3 SK		(3CE3-08) EG 1004 PN		(3CE2-01) AEM 1004 SJ	(3CE4-24) CEM LAB 4011 B1 BS (3CE4-22) FM Lab 1B10 B2 RSR (3CE4-21) Sur Lab 1003 B3 PS	
We	(3CE1-02) TC 1004 ss	(3CE4-22) FM Lab 1B10 B1 RSR (3CE4-21) Sur Lab 1003 B2 PS (3CE4-25) EG LAB 2008-A B3 PN			(3CE3-06) FM 1004 RSR	(3CE3-05) Sur 1004 PS	(3CE3-04) EM 1004 NKB
Th	(3CE1-02) TC 1004 ss	(3CE3-07) BMC 1004 BS	(3CE3-05) Sur 1004 PS		(3CE3-06) FM 1004 RSR	(3CE3-07) BMC 1004 BS	(3CE3-08) EG 1004 PN
Fr	(3CE3-05) Sur 1004 PS	(3CE4-23) CACED Lab 1001-A B1 SK (3CE4-24) CEM LAB 4011 B2 BS (3CE4-22) FM Lab 1B10 B3 RSR			(3CE3-07) BMC 1004 BS	(3CE2-01) AEM 1004 SJ	(3CE3-06) FM 1004 RSR
Sa	NSP 1004 BS		(3CE4-30) PT 1004 SM		CRT		

Dr.P.N Dadhich (H.O.D) TIME TABLE COORDINATOR - PRATEEK SHARMA aSc Timetables

Department of Civil Engineering (Even Week)

III SEM (PCE)

Minha Escola

	1 8:00 - 9:00	2 9:00 - 10:00	3 10:00 - 11:00	LUNCH 11:00 - 11:50	4 11:50 - 12:50	5 12:50 - 13:50	6 13:50 - 14:50
Mo	(3CE2-01) AEM 1004 SJ	(3CE3-08) EG 1004 PN	(3CE3-04) EM 1004 NKB		(3CE4-30) PT 1004 MG	2008-A (3CE4-25) EG LAB B1 PN 1001-A (3CE4-23) CACED Lab B2 SK 4011 (3CE4-24) CEM LAB B3 BS	
Tu	1003 (3CE4-21) Sur Lab B1 PS 2008-A (3CE4-25) EG LAB B2 PN 1001-A (3CE4-23) CACED Lab B3 SK	(3CE3-08) EG 1004 PN			(3CE2-01) AEM 1004 SJ	4011 (3CE4-24) CEM LAB B1 BS 1B10 (3CE4-22) FM Lab B2 RSR 1003 (3CE4-21) Sur Lab B3 PS	
We	(3CE1-02) TC 1004 ss	1B10 (3CE4-22) FM Lab B1 RSR 1003 (3CE4-21) Sur Lab B2 PS 2008-A (3CE4-25) EG LAB B3 PN			(3CE3-06) FM 1004 RSR	(3CE3-05) Sur 1004 PS	(3CE3-04) EM 1004 NKB
Th	(3CE1-02) TC 1004 ss	(3CE3-07) BMC 1004 BS	(3CE3-05) Sur 1004 PS		(3CE3-06) FM 1004 RSR	(3CE3-07) BMC 1004 BS	(3CE3-08) EG 1004 PN
Fr	(3CE3-05) Sur 1004 PS	1001-A (3CE4-23) CACED Lab B1 SK 4011 (3CE4-24) CEM LAB B2 BS 1B10 (3CE4-22) FM Lab B3 RSR			(3CE3-07) BMC 1004 BS	(3CE2-01) AEM 1004 SJ	(3CE3-06) FM 1004 RSR

Dr.P.N Dadhich (H.O.D) TIME TABLE COORDINATOR - PRATEEK SHARMA aSc Timetables

Department of Civil Engineering (Odd Week)

V SEM (PCE))

Minha Escola

	1 8:00 - 9:00	2 9:00 - 10:00	3 10:00 - 11:00	LUNCH 11:00 - 11:50	4 11:50 - 12:50	5 12:50 - 13:50	6 13:50 - 14:50
Mo	(5CE3-01) CT&E 2004 RK	(5CE4-04) GE Tute B1 2007 RK (5CE4-02) SA-I Tute B2 2004 SM (5CE4-05)-WRE Tut) B3 2003 SB	(5CE4-05)-WRE Tut) B1 2003 SB (5CE4-04) GE Tute B2 2004 RK (5CE4-02) SA-I Tute B3 2007 SM		(5CE4-05) WRE 2004 SB	(5CE7-30) ITS 2004 RK	
Tu	(5CE3-01) CT&E 2004 RK	(5CE4-02) SA-I 2004 SM	TP/DM 2004,1001 PD / SK		(5CE4-05) WRE 2004 SB	(5CE4-04) GE 2004 SK	(5CE4-03) DCS 2004 NKB
We	TP/DM 2003,2004 PD / SK	(5CE4-02) SA-I 2004 SM	(5CE4-03) DCS 2004 NKB		(5CE4-04) GE 2004 SK	(5CE4-03) DCS 2004 NKB	(5CE4-04) GE 2004 SK
Th	RRS/GIT 2004,2003 RK / PS	(5CE4-23) WRED Lab B1 2003 SB (5CE4-21) CSD Lab B2 2004 NKB (5CE4-22) GE Lab B3 2008-A SK			(5CE4-05) WRE 2003 SB	(5CE4-22) GE Lab B1 2008-A SK (5CE4-23) WRED Lab B2 2003 SB (5CE4-21) CSD Lab B3 2004 NKB	
Fr	(5CE4-02) SA-I Tute B1 2003 SM (5CE4-05)-WRE Tut) B2 2004 SB (5CE4-04) GE Tute B3 2007 RK	RRS/GIT 2004,2003 RK / PS	(5CE4-02) SA-I 2004 SM		(5CE4-04) GE 2004 SK	(5CE4-21) CSD Lab B1 2003 NKB (5CE4-22) GE Lab B2 2008-A SK (5CE4-23) WRED Lab B3 2004 SB	
Sa	CRT				NSP 1004 PS		(5CE7-30) ITS 2003 PD

Dr.P.N Dadhich (H.O.D) TIME TABLE COORDINATOR - PRATEEK SHARMA aSc Timetables

Department of Civil Engineering (Even Week)

V SEM (PCE))

Minha Escola

	1 8:00 - 9:00	2 9:00 - 10:00	3 10:00 - 11:00	LUNCH 11:00 - 11:50	4 11:50 - 12:50	5 12:50 - 13:50	6 13:50 - 14:50
Mo	(5CE3-01) CT&E 2004 RK	(5CE4-04) GE B1 2007 Tute RK (5CE4-02) SA-I B2 2004 Tute SM (5CE4-05)-WR B3 2003 E.(Tut) SB	(5CE4-05)-WR B1 2003 E.(Tut) SB (5CE4-04) GE B2 2004 Tute RK (5CE4-02) SA-I B3 2007 Tute SM		(5CE4-05) WRE 2004 SB	(5CE7-30) ITS 2004 RK	
Tu	(5CE3-01) CT&E 2004 RK	(5CE4-02) SA-I 2004 SM	TP/DM 2004,1001 PD / SK		(5CE4-05) WRE 2004 SB	(5CE4-04) GE 2004 SK	(5CE4-03) DCS 2004 NKB
We	TP/DM 2003,2004 PD / SK	(5CE4-02) SA-I 2004 SM	(5CE4-03) DCS 2004 NKB		(5CE4-04) GE 2004 SK	(5CE4-03) DCS 2004 NKB	(5CE4-04) GE 2004 SK
Th	RRS/GIT 2004,2003 RK / PS	(5CE4-23) WRED Lab B1 2003 SB (5CE4-21) CSD Lab B2 2004 NKB (5CE4-22) GE Lab B3 2008-A SK			(5CE4-05) WRE 2003 SB	(5CE4-22) GE Lab B1 2008-A SK (5CE4-23) WRED Lab B2 2003 SB (5CE4-21) CSD Lab B3 2004 NKB	
Fr	(5CE4-02) SA-I B1 2003 Tute SM (5CE4-05)-WR B2 2004 E.(Tut) SB (5CE4-04) GE B3 2007 Tute RK	RRS/GIT 2004,2003 RK / PS	(5CE4-02) SA-I 2004 SM		(5CE4-04) GE 2004 SK	(5CE4-21) CSD Lab B1 2003 NKB (5CE4-22) GE Lab B2 2008-A SK (5CE4-23) WRED Lab B3 2004 SB	

Dr.P.N Dadhich (H.O.D) TIME TABLE COORDINATOR - PRATEEK SHARMA aSc Timetables

Department of Civil Engineering (Odd Week)

VII SEM (PCE)

Minha Escola

	1 8:00 - 9:00	2 9:00 - 10:00	3 10:00 - 11:00	LUNCH 11:00 - 11:50	4 11:50 - 12:50	5 12:50 - 13:50	6 13:50 - 14:50
Mo	OE 2007,1001 SM / MG	(7CEPR) PR 1001-A MG			(7CE4-01) TE 2007 RK	B1 (7CE4-24) EM&DL 2008 MG B2 (7CE4-22) PPFV Lab 2003 RSR B3 (7CE4-23) SS Lab 1001 ss	
Tu	OE 2007,2003 SM / MG	B1 (7CE4-23) SS Lab 2007 ss B2 (7CE4-21) RMT Lab 4011 RK B3 (7CE4-22) PPFV Lab 2003 RSR			(7CE4-01) TE 2007 RK	(7CE7-PR) PR 2003 SM	
We	OE 2007,1001 SM / MG	B1 (7CE4-22) PPFV Lab 2003 RSR B2 (7CE4-24) EM&DL 2008 MG B3 (7CE4-21) RMT Lab 4011 RK			(7CE4-01) TE 2007 RK	B1 (7CE4-21) RMT Lab 4011 RK B2 (7CE4-23) SS Lab 1001 ss B3 (7CE4-24) EM&DL 2008 MG	

11 Course Outcome Attainment Process:

11.1 Course Outcome Attainment Process

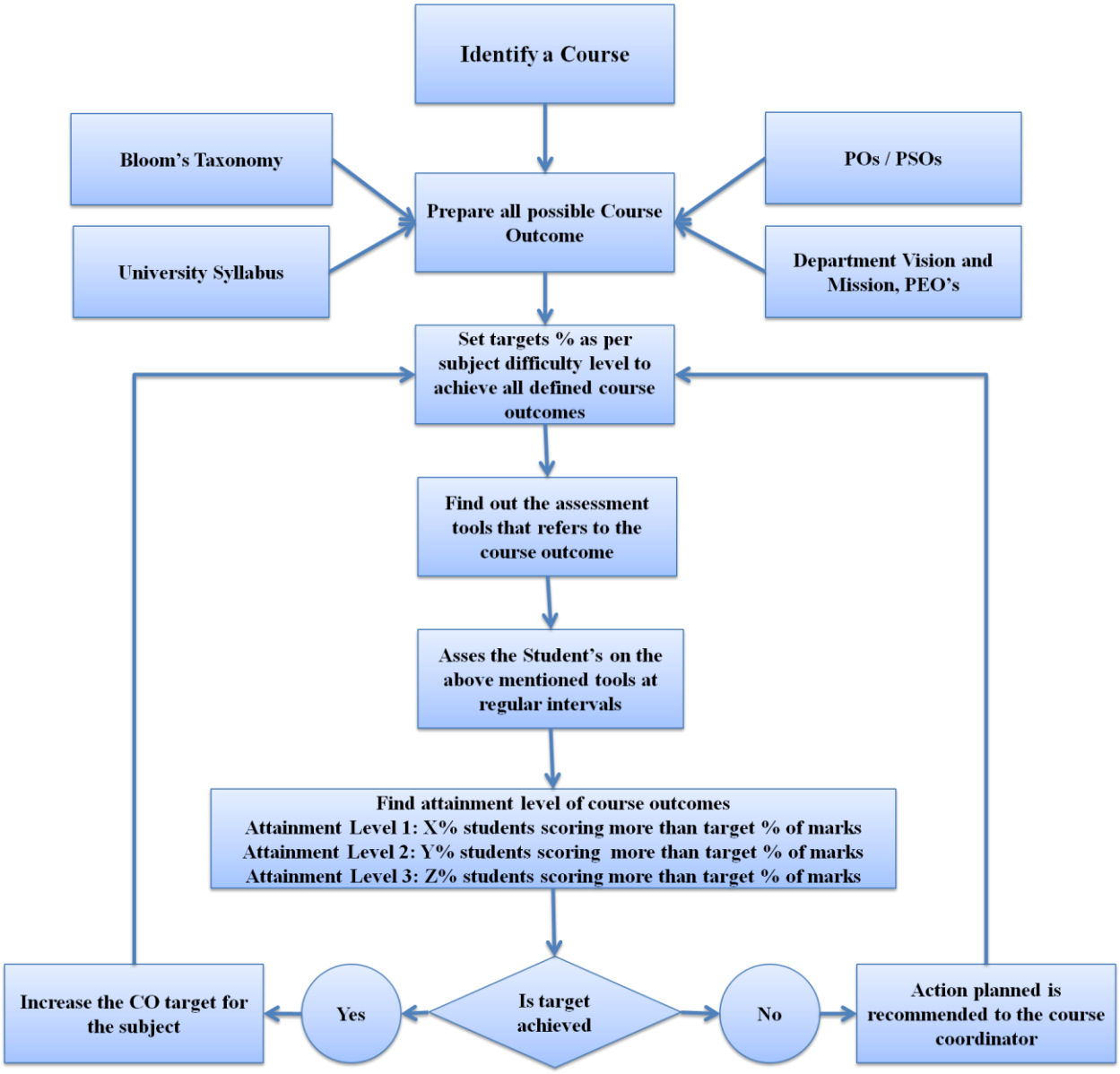


Figure. Course Outcome Attainment Process

11.2 List of CO & CO mapping with PO

S. No.	Course Code	Course Name	CO No.	Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
1	1FY2-01	Engineering Mathematics-I	CO1	Students will be able to apply basic concepts and properties of definite integrals, beta and gamma function to solve practical problems in science and engineering field.	3	2	1	-	-	-	-	-	-	-	-	-	-	-	-
			CO2	Students will be able to explain and identify convergence of sequence and series and lay down foundation for further investigations in signal processing.	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO3	The students will be able to analyze the spectral characteristics of periodic functions by using Fourier series representation.	2	3	1	-	-	-	-	-	-	-	-	-	-	-	-
			CO4	Students will be able to evaluate partial derivatives and apply to estimate maxima and minima of multivariable function.	3	2	1	-	-	-	-	-	-	-	-	-	-	-	-
			CO5	Students will be able to apply multiple integrals for regions in the plane to evaluate surface area, volume, area of the region bounded by curves, mass, centre of gravity of solid geometric figure.	3	2	1	-	-	-	-	-	-	-	-	-	-	-	-
					2.60	**2.40**	**1.00**	-	-	-	-	-	-	-	-	-	-	-	-
2	1FY2-02	Engineering Physics	CO1	Describe the concepts of Wave and Quantum mechanics, Laser and Fiber optics, electromagnetic theory and material science	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO2	Explain the different applications of Laser and optical fibers in communication, engineering, medicine and Science.	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO3	Find energy states in 1-D and 3-D box with the application of quantum mechanics.	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO4	Analyze the crystal structure through X-ray Diffraction & wavelength of light through Newton's ring experiment and Michelson- interferometer	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-
					2.00	**2.00**		-	-	-	-	-	-	-	-	-	-	-	-
3	1FY1-	Human	CO	Relate sustained happiness through identifying the essentials of human values and skills	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-

	05	Values	1																		
			CO2	Find the happiness and human values in terms of personal and social life to create harmony in them	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-
			CO3	Use and understand practically the importance of trust, mutually satisfaction and human relationship	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-
			CO4	Identify the orders of nature for the holistic perception of harmony for human existence	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
			CO5	Implement professional ethics and natural acceptance of human values in his/her life	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-
					-	**-**	**-**	**-**	**-**	**2.00**	**-**	**2.33**	**-**	**-**	**-**	**2.00**	**-**	**-**	**-**
4	1FY3-06	Programming for Problem Solving	CO1	Describe an algorithm using flowchart/pseudo code for a given problem and fundamental of computer system	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO2	Write a c program to compare various Conditional, Iterative statements using arrays, string, pointers, file structure and classify different Representation of numbers	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO3	Examine the concept of Operators, Pointer, Array, String, structure, union using modularization to solve complex problems using C Programming	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO4	Assess the User Defined functions, Memory management and File concepts to solve real time problems using C Programming	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-
					2.00	**2.00**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
5	1FY3-09	Basic Civil Engineering	CO1	Describe basics of surveying, types of building, mode of transportation and different causes of air and noise pollution	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1
			CO2	Explain solid waste management, building by law, chemical cycle, biodiversity, causes of road accident, sanitary landfill and on-site sanitation	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO3	Illustrate method of levelling, road safety measures, building component, hydrological cycle and environ different types of foundation, treatment and disposal of waste water, chemical cycle, traffic sign and symbol and rain water harvestingmental act	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-

			CO4	Compute bearings and elevations of respective points on the ground, various road traffic sign, food chain and contour maps.	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
					2.00	**2.00**	-	-	-	-	-	-	-	-	-	-	-	-	-	**1.00**
6	1FY2-20	Engineering Physics Lab	CO1	Find out the characteristics of optical fiber and laser	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO2	Determine wavelength of different spectral lines and height of an object by sextant	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO3	Analyze the band gap of semiconductor and type of semiconductor through hall effect	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO4	Students will show an ability to communicate effectively and work as a team member ethically	-	-	-	-	-	-	-	2	3	2	-	-	-	-	-	-
					1.50	**1.00**	-	-	-	-	-	**2.00**	**3.00**	**2.00**	-	-	-	-	-	-
7	1FY1-23	Human Values Activities and Sports	CO1	Recall the natural and social issues and their remedies.	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
			CO2	Describe the nature of human values and the impact of external factors over it.	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-
			CO3	Validate through actions the significance of trust, respect and harmony with self and surroundings.	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
			CO4	Outline the relation of human with nature and other factors in terms of human existence	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-
			CO5	Associate the knowledge of self and society with clear understanding of social issues and the human beings.	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-
					-	-	-	-	-	**2.00**	**2.00**	**1.00**	**2.00**	-	-	-	-	-	-	-
8	1FY3-24	Computer Progra	CO1	Relate the fundamental of C Programming as variable, operators and taxonomy to write a basic C Program	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

		mming Lab	CO2	Write programs that perform operations using condition control statements and loop control statements, single and multi-dimensional arrays along with specific program of matrix multiplication.(Examine)	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO3	Use C programs to implement operations related to Array, Macros and inline functions, Dynamic memory allocations, concept of Structure, Unions and Pointers	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO4	Students will show an ability to communicate effectively and work ethically	-	-	-	-	-	-	-	2	-	2	-	-	-	-	-
					2	**-**	**-**	**-**	**-**	**-**	**-**	**2**	**-**	**2**	**-**	**-**	**-**	**-**	**-**
9	1FY3-27	Basic Civil Engineering Lab	CO1	Describe various sanitary fittings and water supply fittings	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO2	Examine pH, Turbidity, Hardness and Total solids of given water sample	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO3	Use of EDM and Total Station in the field	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO4	Investigate the linear and angular measurements of the points on the ground and levelling	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO5	Students will show an ability to communicate effectively and work as a team member ethically	-	-	-	-	-	-	-	2	3	2	-	-	-	-	-
					2.00	**1.00**	**-**	**-**	**-**	**-**	**-**	**2.00**	**3.00**	**2.00**	**-**	**-**	**-**	**-**	**-**
10	1FY3-28	Computer Aided Engineering Graphics	CO1	Describe engineering drawing terminology, concept of scales and conic sections.	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-
			CO2	Draw Projection of Points, lines, planes, solids and section of solids	-	1	-	-	-	-	-	-	-	-	-	-	2	-	-
			CO3	Draft 2D engineering problems on CAD software.	-	-	-	-	3	-	-	-	-	-	-	-	-	1	1
			CO4	Students will show an ability to work as a team member ethically	-	-	-	-	-	-	-	2	3	-	-	-	-	-	-
					1.00	**1.00**	**-**	**-**	**3.00**	**-**	**-**	**2.00**	**3.00**	**-**	**-**	**-**	**1.50**	**1.000**	**1.000**

11	2FY2-01	Engineering Mathematics-II	CO1	Students will be able to apply basic concepts matrix to find rank of matrix by reducing into normal and echelon form, to solve linear system of equations, to determine linear dependency or independency, to find eigen values and eigen vectors for a linear transformation which is very useful in various field of technology.	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO2	Students will be able to apply the knowledge of ordinary differential equation and various methods of solution of ODE to solve complex engineering problems.	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO3	The students will be able to identify a given differential equation and apply an appropriate analytical technique to find solution of first order and higher order differential equations.	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO4	Students will be able to effectively analyze and apply appropriate mathematical technique to solve linear and non-linear partial differential equations.	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO5	Students will be able to classify higher order partial differential equations and analyze a wide variety of time dependent phenomena of real world including heat conduction, wave equation particle diffusion.	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-
					2.25	**2.00**	-	-	-	-	-	-	-	-	-	-	-	-	-
12	2FY2-03	Engineering Chemistry	CO1	Describe characteristics of water, fuel and Engineering materials	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO2	Determine of hardness of water and calorific value of fuels for Industrial as well as domestic purposes	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO3	Compare different techniques of water treatment, fuel analysis, Manufacturing of engineering materials and corrosion protection methods	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO4	Prepare the generic drugs or medicines by understanding the applications of organic reaction mechanism and manufacturing of engineering materials	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-
					2.00	**2.00**	-	-	-	-	-	-	-	-	-	-	-	-	-
13	2FY1-04	Communication Skills	CO1	Describe the process of communication, basics of Grammar and Writing and Literary Aspects	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
			CO2	Explain the types of communication, barriers and channels of communication and the concept of Literature through Short Stories and poetry	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-
			CO	Write and prepare professional reports, paragraph and business letters with the correct use of grammar	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-

			3																			
			CO4	Discuss and illustrate the impact of social and moral values by implying the basics of English Writing Skills through literary aspects	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
			CO5	Restate and outline the basic areas of English Language Skills with the applications of literature	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-
					-	**-**	**-**	**-**	**-**	**-**	**-**	**2.00**	**-**	**2.00**	**-**	**2.00**	**-**	**-**	**-**
14	1FY3-07	Basic Mechanical Engineering	CO1	Describe concepts of thermal, functional design of machine elements, materials and primary manufacturing process.	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-
			CO2	Classify different types of turbines and power plants, pumps and IC engines, refrigeration system, transmission of power, engineering materials and primary manufacturing processes	2	-	-	-	-	-	-	-	-	-	-	-	2	-	-
			CO3	Apply the fundamental knowledge of thermal engineering, in addition to understanding of materials and primary manufacturing process to solve the industrial and societal issues.	3	-	-	-	-	-	-	-	-	-	-	-	2	-	-
			CO4	Examine about the turbine & pumps, IC engines, refrigeration system, modes of transmission of power, materials and primary manufacturing process	-	1	-	-	-	-	-	-	-	-	-	-	-	2	1
					2.00	**1.00**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**1.67**	**2.00**	**1.00**
15	2FY3-08	Basic Electrical Engineering	CO1	Define various ac and dc circuit related problems	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO2	Explain electromechanical energy conversion process	2	-	-	-	-	-	-	-	-	-	-	-	1	-	-
			CO3	Classify characteristics of various power electronic devices.	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO4	Identify knowledge of protective devices and energy consumption calculations.	-	2	-	-	-	-	-	-	-	-	-	-	2	-	-
					2.00	**2.00**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**1.50**	**-**	**-**

16	2FY2-21	Engineering Chemistry Lab	CO1	Determine the strength of unknown solution by volumetric analysis.	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO2	Examine the characteristics of lubricating oil in groups	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-
			CO3	Analyze different characteristics of water and fuel to solve societal and enviornmental problems	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-
			CO4	Students will show an ability to work as a team member ethically	-	-	-	-	-	-	-	2	3	-	-	-	-	-	-
					1.00	-	-	-	-	-	**2.00**	**2.00**	**2.50**	-	-	-	-	-	-
17	2FY1-22	Language Lab	CO1	Use and pronounce the words correctly.	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
			CO2	Acquire knowledge of the correct expressions,vocabulary etc. in personal and professional lives.	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-
			CO3	Plan successfully for leadership and teamwork,crack GD's, interviews and other professional activities.	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-
			CO4	Synthesize the process of communication using LSRW.	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-
					-	-	-	-	-	-	-	-	**2.00**	**2.00**	-	-	-	-	-
19	2FY3-26	Basic Electrical Engineering Lab	CO1	Discuss measurement of electrical quantites	1	-	-	-	-	-	-	-	-	-	-	-	1	2	-
			CO2	Compare different connections of transformer	2	-	-	-	-	-	-	-	-	-	-	-	1	2	-
			CO3	Demonstrate constructional features of electrical machines and converters	3	-	-	-	-	-	-	-	-	-	-	-	2	2	-
			CO4	Students will show an ability to communicate effectively and work as a team member ethically	-	-	-	-	-	-	-	2	3	2	-	-	-	-	-
					2	-	-	-	-	-	-	**2**	**3**	**2**	-	-	**1.**	**2**	-

																			3 3		
2 0	1F Y3-25	Manufacturing Practices Workshop	CO 1	Describe the working of Lathe machine.	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-
			CO 2	Apply the basic concepts of Foundry Shop	2	-	-	-	-	-	-	-	-	-	-	-	1	-	-
			CO 3	Develop various carpentry joints, welding joints and sheet metal objects.	-	2	-	-	-	-	-	-	-	-	-	-	1	-	-
			CO 4	Students will show an ability to work as a team member ethically	-	-	-	-	-	-	-	2	3	-	-	-	-	-	-
					1.50	**2.00**	-	-	-	-	-	**2.00**	**3.00**	-	-	-	**1.000**	-	-
2 1	2F Y3-29	Computer Aided Machine Drawing	CO 1	Describe orthographic projections and basic Geometrical Concept	2	-	-	-	-	-	-	-	-	-	-	-	1	-	-
			CO 2	Analyze Sectional Views of different mechanical Components and assembly drawing	-	1	-	-	-	-	-	-	-	-	-	-	2	-	-
			CO 3	Draft a engineering product using CAD software	-	-	-	-	2	-	-	-	-	-	-	-	2	-	1
			CO 4	Students will show an ability to work as a team member ethically	-	-	-	-	-	-	-	2	3	-	-	-	-	-	-
					2	**1**	-	-	**2**	-	-	**2**	**3**	-	-	-	**1.67**	-	**1**
1	3CE2-01	Advance Engineering Mathematics-I	CO 1	Find the concept of numerical methods, Laplace transform, Fourier transform and Z-transform.	1				-	-	-	-	-		-		-	-	1
			CO 2	Explain numerical methods to find unknown values with help of known values , Roots finding techniques and Solution of ordinary differential equations.	2				-	-	-	-	-		-		1	1	-
			CO 3	Apply the appropriate technology and compare the viability of different approaches to the numerical solution of problems.	3				-	-	-	-	-		-		1	1	-

			CO4	Analyze the Fundamentals of the Fourier transform, Laplace transform, and Z-Transforms .These systems can be carried out in terms of either a time domain or a transform domain formulation.	-	2			-	-	-	-	-		-		1	2	-
			CO5	Solve differential equations involved in Vibration theory, Heat transfer and related engineering applications by Laplace transform and Fourier transform techniques and use Z-transform in the characterization of Linear Time Invariant system (LTI), in development of scientific simulation algorithms.	-	2			-	-	-	-	-		-		-	2	-
					2.00	**2.00**	-	-	-	-	-	-	-	-	-	-	**1.00**	**1.50**	-
2	3CE1-02	Technical Communication	CO1	Understanding the characteristics of technical writing and the importance of purpose, audience, and genre for written communication in technical fields.	-	-	-	-	-	-	-	-	1	2	-	1	1	-	2
			CO2	Planning, drafting, revising, editing, and critiquing technical and professional documents through individual and collaborative writing.	-	-	-	-	-	-	-	-	1	2	-	2	2	-	2
			CO3	Create clear, concise technical documents that effectively use style and grammar and information structure in ways that create meaning with the reader	-	-	-	-	-	-	-	-	1	1	-	2	2	-	2
			CO4	Researching, analyzing, synthesizing, and applying information to create technical reports.	-	-	-	-	-	-	-	-	1	2	-	2	2	-	3
					-	-	-	-	-	-	-	-	**1.00**	**1.75**	-	**1.75**	**1.75**	-	**2.25**
3	3CE3-04	Engineering Mechanics	CO1	Describe the basic fundamental laws of Engineering mechanics for civil engineering	2				-	-	-	-	-	-	-	-	1	2	-
			CO2	Implement the process of concept on various typical structure like spring, plane trusses in field	2				-	-	-	-	-	-	-	-	1	2	1
			CO3	Apply the concept of technical parameters like principle of virtual work, moment of inertia in civil engineering	3		-		-	-	-	-	-	-	-	-	2	-	1
			CO4	Analyze the various structural parameters such as force, work, truss, stresses and strains & their significance in civil engineering		3			-	-	-	-	-	-	-	-	-	-	-
					2	**3**	-	-	-	-	-	-	-	-	-	-	**1.**	**2.**	**1.**

					.33	**.00**											**33**	**00**	**00**
4	3CE4-05	Surveying	CO1	Know about basic principles of surveying and distance measurement with Tapes, Chains, compass and theodolite	2	1	-	-	-	-	-	-	-	-	-	-	2	-	-
			CO2	Understand the working Principles of Survey instrument.	1	2	2	-	-	-	-	-	-	-	-	-	2	3	3
			CO3	Analyze measurement errors and apply corrections.	2	-	2	2	-	-	-	-	-	-	-	-	2	2	3
			CO4	Evaluate RL using leveling instruments of a given area. Apply the concept of tacheometry and photogrammetric in the field.	1	-	1	2	-	-	-	-	-	-	-	-	2	-	2
			CO5	Create the setting out of work using different instruments (Total station and EDM).	1	2	1	1	-	-	-	-	-	-	-	-	2	2	3
					1.40	**1.67**	**1.50**	**1.67**	-	-	-	-	-	-	-	-	**2.00**	**2.33**	**2.75**
5	3CE4-06	Fluid Mechanics	CO1	To understand the various types of fluid and its attributes	3	3	-	-	-	-	-	-	-	-	-	-	2	-	-
			CO2	To understand various pressure measuring devices and equilibrium conditions of floating and submerged bodies.	2	2	2	-	-	-	-	-	-	-	-	-	3	2	-
			CO3	To evaluate several attributes of fluid flow and phenomenon to estimate discharge	2	-	2	3	-	-	-	-	-	-	-	-	-	2	-
			CO4	To apply the concept of Euler, Bernoulli's and momentum equations	2	-	2	2	-	-	-	-	-	-	-	-	2	3	-
			CO5	To evaluate the concept of laminar flow through pipes and equation to calculate its characteristics and losses	2	2	2	1	-	-	-	-	-	-	-	-	-	2	-
					2.20	**2.33**	**2.00**	**2.00**	-	-	-	-	-	-	-	-	**2.33**	**2.25**	-
6	3CE4-07	Building Materi	CO1	Know about the different building materials and uses such as stone, brick, fly ash, Lime, masonry and many other building construction materials.	1	-	-	-	2	2	1	-	-	-	-	1	1	1	1

		als and Construction	CO2	Understand about the types, properties, tests and uses of construction material.	2	-	-	-	-	2	-	-	-	-	-	1	2	-	1
			CO3	Apply and differentiate about the foundation types with layout plan, temporary structure details with joints, and safety concerns.	2	-	-	-	-	-	2	-	-	-	-	1	1	2	2
			CO4	Implement and analyze the flooring besides various attributes of masonry types with its merits and demerits.	-	-	2	-	1	-	-	-	-	-	-	1	1	2	-
			CO5	Compare and evaluate the various building components with details.	-	-		-	1	-	-	-	-	-	-	1	-	2	-
					1.67	-	**2.00**	-	**1.33**	**2.00**	**1.50**	-	-	-	-	**1.00**	**1.25**	**1.75**	**1.33**
7	3CE4-08	Engineering Geology	CO1	Understand the basic concept of geology for civil engineering.	3	2	2	1	-	-	-	-	-	-	-	-	2		2
			CO2	Implementation process geological investigation process and their significance in civil engineering	3	2	2	2	-	-	-	-	-	-	-	-	1		2
			CO3	Analyze the properties, behavior and engineering significance of rocks, mineral and geological features.	3	2	2	2	-	-	-	-	-	-	-	-	1	2	1
			CO4	Evaluate and demonstrate the latest technology for different types of rocks and mineral properties and geological features for civil engineering applications such as DAM, Tunnel.	2	2	1	1	-	1	-	-	-	-	-	-		2	1
					2.75	**2.00**	**1.75**	**1.50**	-	**1.00**	-	-	-	-	-	-	**1.33**	**2.00**	**1.50**
	3CE4-21	Surveying Lab	LO1	Understand working of different type of surveying equipment's.	3	3											1	2	
			LO2	An ability to determine the areas by using linear measurement methods.	2	3	2										1	2	1
			LO3	An ability to plot the traverse and to determine the bearings by using compass.	2	2	3	1									2		1
			LO	Calculate distance, direction and elevation via measurement, angle measurement, differential leveling and contouring.	2	2	3										1	2	2

			4																		
			LO 5	Study the various electronic surveying instruments like EDM, Total Station etc.	3	2	2	2									2	1	1
					2.40	**2.40**	**2.50**	**1.50**	-	-	-	-	-	-	-	-	**1.40**	**1.75**	**1.25**
	3CE4-22	Fluid Mechanics Lab	LO 1	To understand the equioments used for fluid measurement and behavour of fluid	2								1	2					
			LO 2	To analyze the flow parameters of fluid		2							2	2					
			LO 3	To evaluate dynamic characteristic of fluid			2	2					2	2					
					2.00	**2.00**	**2.00**	**2.00**	-	-	-	-	**1.67**	**2.00**	-	-	-	-	-
	3CE4-23	Computer Aided Building Design Lab	LO 1	To understand sketch of various building components on software and Use commands for 2D & 3D building drawings required for different civil engineering applications.	1				3							2	2		1
			LO 2	Draw Orthographic projections of Lines, Planes, and Solids Construct Isometric Scale, Isometric Projections and Views	2				2	1						3		1	2
			LO 3	Draw Sections of various Solids including Cylinders, cones, prisms and pyramids	1					2						3	1	2	
			LO 4	Plan & draw Civil engineering buildings as per aspect and orientation.	1	2	2										2	1	2
					1.25	**2.00**	**2.00**	-	**2.50**	**1.50**	-	-	**1.67**	**2.00**	-	**2.67**	**1.67**	**1.33**	**1.67**
	3CE4-24	Civil Engineering Maretials Lab	LO 1	Able to describe basic of civil engineering building materials.						1	1		2	2		2	1	1	1
			LO 2	Able to understand the types and properties of civil engineering building materials.						1	1		2	2		2	2	2	3
			LO	Able to apply the test procedure to find the properties of civil engineering building materials.						2	2		3	2		2	2	2	3

			3																			
					-	**-**	**-**	**-**	**-**	**1.33**	**1.33**	**-**	**2.33**	**2.00**	**-**	**2.00**	**1.67**	**1.67**	**2.33**
	3CE4-25	Geolgy Lab	LO1	Evaluate the significance of minerals & Rocks by considering their properties	2	1					1							1	
			LO2	Analyze the physical properties of rocks & Minerals of specimens	2	2					1							2	2
			LO3	Understand the dip and strike and solve the structural deformation problems in given maps	2	2					2							2	
			LO4	Analyze and interpret given Geological Maps and prepare geological profiles	2	2					2							2	2
			LO5	Understand the significance of geological studies for the civil engineering applications	2	2					3							3	2
					2.00	**1.80**	**-**	**-**	**-**	**-**	**1.80**	**-**	**-**	**-**	**-**	**-**	**-**	**2.00**	**2.00**
8	4CE2-01	Advance Engineering Mathematics-II	CO1	Define probability models using probability mass (density) functions and concept of variance and sampling distribution	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-
			CO2	Classify the probability distributions of discrete and continuous random variables, Mathematical expectation and moments	2	-	-	-	-	-	-	-	-	-	-	-	1	1	-
			CO3	Apply discrete and continuous distribution such as binomial, Poisson, uniform, exponential, normal distribution and their statistical measures to various problems and the curve fitting methods of linear and non-linear forms to analyze the data	3	-	-	-	-	-	-	-	-	-	-	-	1	2	-
			CO4	Examine the concept of the Test of significance on sampling and the behavior of the sample mean	-	2	-	-	-	-	-	-	-	-	-	-	1	2	-
			CO5	Evaluate the correlation between two variables and use regression analysis applications for purposes of description and prediction	-	3	-	-	-	-	-	-	-	-	-	-	1	2	1
					2.00	**2.50**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**1.00**	**1.75**	**1.00**
9	4CE1-	Managerial	CO	Describe the fundamental concepts of Economics and Financial Management and define the meaning of national income, demand, supply, cost, market structure, and	-	-	-	-	-	1	-	-	-	2	3	-	-	-	1

	03	Economics & Financial	1	balance sheet																		
			CO2	Calculate the domestic product, national product and elasticity of price on demand and supply	-	2	-	-	-	-	-	-	-	-	3	-	-	-	1
			CO3	Draw the cost graphs, revenue graphs and forecast the impact of change in price in various perfect as well as imperfect market structures	3	-	2	-	-	-	-	-	-	-	-	-	-	-	1
			CO4	Compare the financial statements to interpret the financial position of the firm and evaluate the project investment decisions	-	3	-	2	-	-	-	-	-	-	3	-	-	1	-
					3.00	**2.50**	**2.00**	**2.00**	-	**1.00**	-	-	-	**2.00**	**3.00**	-	-	**1.00**	**1.00**
10	4CE3-04	Basic Electronics for Civil Engineering Applications	CO1	Discuss the concepts of electronics component like Diode,BJT, Op-Amp and Digital Electronics components.	2	-	-	-	-	-	-	-	-	-	-	-	1	-	-
			CO2	Apply the basic concept of electronics components in Robotics, IoT etc.	2	-	-	-	-	-	-	-	-	-	-	-	1	-	-
			CO3	Evaluate the various techniques for image enhancement and image restoration	3	-	-	-	-	-	-	-	-	-	-	-	2	-	-
			CO4	Design bias circuitry of BJT and flip-flop etc.	-	2	-	-	-	-	-	-	-	-	-	-	1	-	-
					2.33	**2.00**	-	-	-	-	-	-	-	-	-	-	**1.25**	-	-
11	4CE4-05	Strength of Materials	CO1	To understanding the basic concept of stress-strain, bending and torsion, column & deflection	3	2	1	-	-	-	-	-	-	-	-	-	3	3	-
			CO2	To Differentiate the stress, strain, shear, bending torsion and deflection	2	3	1	-	-	-	-	-	-	-	-	-	3	3	-
			CO3	To analyze effect of stresses, bending, torsion, deflection on determinate structures	2	3	1	-	-	-	-	-	-	-	-	-	2	2	-
			CO4	To apply the Concept of stress-strain, bending and torsion, determinate and indeterminate Prismatic sections	2	3	1	-	-	-	-	-	-	-	-	-	3	2	1
			CO	To analyze the beam and Column by different analytical methods and differentiate them	2	3	1	-	-	-	-	-	-	-	-	-	3	3	1

			5																		
					2.20	**2.80**	**1.00**	-	-	-	-	-	-	-	-	-	**2.80**	**2.60**	**1.00**
12	4CE4-06	Hydraulics Engineering	CO1	To study dimensional and model analysis.	3	3	-	-	-	1	-	-	-	-	-	1	2	-	2
			CO2	To know various parameters in laminar and turbulent flow like shear stress, velocity distribution, etc	2	3	1	-	-	-	-	-	-	-	-	-	2	-	2
			CO3	To study hydraulic jump and gradually varied flow	2	2	-	1	-	-	-	-	-	-	-	-	2	3	3
			CO4	To study open channel flow and conditions of surface profile	1	2	2	1	-	1	-	-	-	-	-	-	3	2	2
			CO5	To draw various characteristic curve for pelton turbine and hydraulic pump	1	2	-	-	-	-	1	-	-	-	-	2	3	2	1
					1.80	**2.40**	**1.50**	**1.00**	-	**1.00**	**1.00**	-	-	-	-	**1.50**	**2.40**	**2.33**	**2.00**
13	4CE4-07	Building Planning	CO1	To understand the fundamental principles and concepts of building planning and architecture for buildings	2	1	-	-	-	-	-	-	-	-	-	-	1	1	-
			CO2	Comprehend various aspects of local building bye-laws, Vaastu shastra and provisions of National Building Code in respect of building and town planning	2	2	1	-	-	-	-	-	-	-	-	-	1	1	-
			CO3	Plan the buildings according the modern requirements such as sustainability, environment friendly etc	1	3	1	-	-	-	-	-	-	-	-	-	2	2	1
			CO4	Prepare working drawings, foundation plans and other executable drawings with proper details for residential buildings	1	2	3	1	-	-	-	-	-	-	-	-	3	2	1
					1.50	**2.00**	**1.67**	**1.00**	-	-	-	-	-	-	-	-	**1.75**	**1.50**	**1.00**
14	4CE4-08	Concrete Techn	CO1	Identifythe functional role of ingredients of concrete and use this knowledge to mix design philosophy	2		-	-	-	-	-	-	-	-	-	1			-

		ology	CO2	Apply fundamental knowledge in the fresh and hardened properties of concrete	1	2	-	-		-	-	-	-	-	-	1		1	-
			CO3	Evaluate the effect of the environment on service life performance, properties and failure modes of structural concrete and Non Destructive Testing of concrete structure	1	3	-	-	-	-	-	-	-	-	3	2	2	1	-
			CO4	Design a concrete mix which fulfills the required properties for fresh and hardened concrete	1	2	3	-	-	-	-	-	-	-	-	1	2	1	-
					1.25	**2.33**	**3.00**	-	-	-	-	-	-	-	**3.000**	**1.25**	**2.00**	**1.00**	-
	4CE4-21	Material Testing Lab	LO1	To understand the basic properties of materials.	3	2	1										1	2	
			LO2	Identify the test to be conducted for different properties of building materials.	2	3	2										1	2	1
			LO3	To Conduct Test for different properties of building materials.	1	2	3										2		1
			LO4	Analyze the test results for different properties.	1	3	2										2	1	1
					1.75	**2.50**	**2.00**	-	-	-	-	-	-	-	-	-	**1.50**	**1.67**	**1.00**
	4CE4-22	Hydraulics Engineering Lab		To Understand characteristics curve of Pelton Wheel ,hydraulic jump and Centrifugal Pump.	2								1	2					
				To analyze the discharge by using various instruments. i.e venturimeter Broad crested weir.		2							2	2					
				To Evaluate momentum equation ,Manning' & Chezy's coefficient of roughness for the bed of a given flume.			2	2					2	2					
					2.00	**2.00**	**2.00**	**2.00**	-	-	-	-	**1.67**	**2.00**	-	-	-	-	-
	4CE4-23	Building Drawi	LO1	Create drawing of basic components of buildings.	2	1	-	-	1	2	-	-	2	2	3	2	3	2	2
			L	Identify the components of different buildings required as per their functional	1	1	-	-		1	-	-	2	2	2	3	3	1	1

		ng	O 2	need.																	
			L O 3	Create drawing of building masonry.	1	1	-	-		1	-	-	2	2	2	3	3	2	1
			L O 4	Draw the plan, section and elevation of a building	1	1	-	-	3	1	2	-	2	2	2	3	3	2	2
					1.25	**1.00**	-	-	**2.00**	**1.25**	**2.00**	-	**2.00**	**2.00**	**2.25**	**2.75**	**3.00**	**1.75**	**1.50**
	4CE4-24	ADVANCED SURVEYING LAB	L O 1	Identify the instruments required for a particular survey problem	3	3	2										1	2	
			L O 2	Determine the height of an object by theodolite.	3	3	2										1	2	1
			L O 3	Prepare the map of area by Plane Table Surveying.	3	2	2	1									2		1
			L O 4	Measurement of area of horizontal and vertical angle by Total Station.	1	2	3										1	2	2
					2.50	**2.50**	**2.25**	**1.00**	-	-	-	-	-	-	-	-	**1.25**	**2.00**	**1.33**
	4CE4-25	Concrete Lab		Explain the Quality control test on ingredients of concrete.	2	1	-	-	-	-	1	-	-	2	-	2	1	1	2
				Conduct Quality Control test on ingredients of fresh and hardened concrete.	2	2	-	-	-	-	1	-	2	2	-	2	3	2	2
				Analyze the test on fresh and hardened concrete and Non-destructive test on concrete.	3	2	-	-	2	-	1	-	2	2	-	2	1	2	1
				Design the concrete mix.	2	3	2	2	-	1	1	-	2	2	-	2	2	1	1
					2.25	**2.00**	**2.00**	**2.00**	**2.00**	**1.00**	**1.00**	-	**2.00**	**2.00**	-	**2.00**	**1.75**	**1.50**	**1.50**
15	5CE3-01	Construction Technology and equipment	C O 1	Evaluate and analyze the Engineering Economy in Construction Field	2	3	2	-	-	-	-	-	-	-	-	-	1	2	-
			C O 2	Evaluate and analyze the various safety programmes in construction	2	3	2	-	-	2	-	-	-	-	-	-	1	2	1
			C	Apply the various safety measure in construction field and fire safety as Per NBC	2	2	3	1	-	-	1	-	-	-	-	-	2		1

			CO3																	
			CO4	Apply and analyze the inspection, quality control in construction planning and Materials Management	2	2	3	-	-	-	-	-	-	-	-	-	-	1	1	1
			CO5	Understanding the various Construction Equipment model and working procedure	2	2	3	-	1	-	-	-	-	-	-	-	-	2	1	2
					2.00	**2.40**	**2.60**	**1.00**	**1.00**	**2.00**	**1.00**	-	-	-	-	-	**1.40**	**1.50**	**1.25**
16	5CE4-02	Structure Analysis- I	CO1	Able to describe basic concepts of civil engineering structure analysis.	2		-		-	-	-	-	-	-	-	-	-	1	1	1
			CO2	Able to understand various methods and theorems used for analysis of civil structures.	1	2	-	-	-	-	-	-	-	-	-	-	-	2	2	3
			CO3	Able to apply concepts of Area moment method, Conjugate beam method, three moments theorem, vibration, Mathematical models to analyze building components.	1	3	-		-	-	-	-	-	-	-	-	-	2	2	3
			CO4	Able to analyze Statically Indeterminate Structures using Slope-deflection method, Moment-distribution method and simple harmonic motion concepts	1	2	3		-	-	-	-	-	-	-	-		2	2	3
					1.25	**2.33**	**3.00**	-	-	-	-	-	-	-	-	-	-	**1.75**	**1.75**	**2.50**
17	5CE4-03	Design of Concrete Structures	CO1	Explain the design parameters of RCC beams, slabs, Column and Footings.	2	-	-	-	-	-	-	-	-	-	-	-	-	1	2	-
			CO2	Apply the fundamental concept of design philosophies of Reinforced concrete member according to the IS code 456:2000	3	-	-	-	-	-	-	-	-	-	-	-	-	1	2	1
			CO3	Investigate and design singly, doubly, flanged beams to test serviceability for control deflection as per codal provisions	1	2	-	-	-	-	-	-	-	-	-	-	-	2	-	1
			CO4	Utilize codal provision to design for collapse in shear, bond curtailment of reinforcement, deflection and torsion.	1	2		-	-	-	-	-	-	-	-	-	-	1	1	1
			CO5	Design of slab, column and column footings economically and suitably recommend the appropriate type according to site conditions	2	2	3	-	-	-	-	-	-	-	-	-	-	2	1	2
					1.	**2.**	**3.**	-	-	-	-	-	-	-	-	-	-	**1.4**	**1.5**	**1.2**

					80	**00**	**00**											**0**	**0**	**5**
18	5CE4-04	Geotechnical Engineering	CO1	Identify the properties of soil which govern the behavior of soil and classify various types of soils according to their properties.	3	2	1	-	-	-	-	-	-	-	-	-	3	2	-
			CO2	Apply the fundamental concepts of mathematics, solid mechanics and fluid mechanics for the solution of geotechnical engineering problems.	3	2	-	-	-	-	-	-	-	-	-	-	3	2	-
			CO3	Analyze various engineering properties of different types of soils, strength parameters and the effect of surroundings on properties of soil	2	1	1	-	-	-	-	-	-	-	-	-	1	3	-
			CO4	Evaluate interrelationship of different soil properties, the settlements of foundations, stability of natural slopes, and bearing capacity of soils.	1	2	-	-	-	-	-	-	-	-	-	-	3	1	-
					2.25	**1.75**	**1.00**	-	-	-	-	-	-	-	-	-	**2.500**	**2.000**	-
19	5CE4-05	Water Resources Engineering	CO1	Understand different methods of irrigation technique and evaluate water requirements for crop production.	3	2	-	-	-	-	1	-	-	-	-	-	3	-	1
			CO2	Evaluate channels for appropriate water application in respective areas.	3	1	2	-	-	-	-	-	-	-	-	-	3	-	1
			CO3	Design of various dams in respective areas.	3	2	-	2	-	-	-	-	-	-	-	-	3	2	1
			CO4	Apply various cross-drainage structures in respective areas.	3	2	-	1	-	-	-	-	-	-	-	-	3	-	1
			CO5	Analyze appropriate hydrological phenomena and estimate watershed yield.	3	1	-	1	-	-	-	-	-	-	-	-	3	-	-
					3.000	**1.600**	**2.000**	**1.333**	-	-	**1.000**	-	-	-	-	-	**3.000**	**2.000**	**1.000**
20	5CE5-12	Disaster Management	CO1	Understand concept of disasters, risks, hazards, capacity building, coping with disaster and disaster management act and policy in India	3					1						2	2	-	2
			CO2	Explain concept of disasters, risks, hazards, capacity building, coping with disaster and disaster management act and policy in India	2	2	-	-	-	1						2	3	-	2
			CO	Classify disasters, risks, hazards, management techniques.	1	2	-	-	-	1		1				2	2	-	2

			3																		
			CO4	Apply the concept of capacity building, coping with disaster and disaster management act and policy in India	1	2	2			1		1	2			2	3	-	3
			CO5	Investigate of natural and manmade disasters	2	2	2	2		1						2			
					1.800	**2.000**	**2.000**	**2.000**	**-**	**1.000**	**-**	**1.000**	**2.000**	**-**	**-**	**2.000**	**2.500**	**-**	**2.225**
21	5CE5-13	Town Planning	CO1	Describe the concept of Town Planning and different terminologies, town planning National Protocols	3	2	1	-	-	-	-	-	-	-	-	-	2	-	2
			CO2	Discuss and Discovertown planning methodologies and significant impact on a project	3	-	-	-	2	1	-	-	-	-	-	-	3	-	2
			CO3	Apply the concept of town planning on real scenarios	-	-	-	-	3	-	-	-	-	-	-	-	2	-	2
			CO4	Analyze effect of town planning on growth of a city	-	3	-	-	-	-	-	-	-	-	-	-	3	-	3
			CO5	Conduct case studies of various towns of India	-	-	-	3	-	-	-	-	-	-	-	-	2	-	2
					3.000	**2.500**	**1.000**	**3.000**	**2.500**	**1.000**	**-**	**-**	**-**	**-**	**-**	**-**	**2.400**	**-**	**2.220**
22	5CE5-14	Repair and Rehabilitation of Structures	CO1	Remember the fundamental concepts of geotechnical engineering in civil engineering construction activities.	3	2	1	-	-	-	-	-	-	-	-	-	3	2	-
			CO2	Identify the Deterioration, Cracks, NDT test, material for repairing and Repair and waterproof Techniques.	3	-	-	-	2	1	-	-	-	-	-	-	3	-	-
			CO3	Implement the preventive methods of reinforcement corrosion, cracking, Non-destructive test and Repair Techniques on concrete structures.	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-
			CO4	Differentiate the Deterioration, crack patterns, material for repairing of concrete structures.	-	3	-	-	-	-	-	-	-	-	-	-	-	3	-
			CO	Conduct the investigation on the case studies of bridges, piers and different concrete structures.	-	-	-	3	-	-	-	-	-	-	-	-	-	-	3

			5																	
					3.00	**2.50**	**1.00**	**3.00**	**2.50**	**1.00**	**-**	**-**	**-**	**-**	**-**	**-**	**3.00**	**2.50**	**3.00**
23	5CE5-15	Ground Improvement Technique	CO1	Understand the fundamental concepts of ground improvement techniques in civil engineering construction activities	**1**	**1**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	1	1	1
			CO2	Describe the different techniques of ground improvements.	**1**	**2**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	2	2	3
			CO3	Apply knowledge of mathematics, Science and Geotechnical Engineering to solve problems in the field of modification of ground required for construction of Civil Engineering structures.	**1**	**2**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	2	2	3
			CO4	Illustrate reinforced wall design using steel strip or geo-reinforcement.	**1**	**3**	**2**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	2	2	3
			CO5	Use effectively the various methods of ground improvement techniques and Outline the solution for problematic soils.	**2**	**--**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	-	1	-
					1.20	**2.00**	**2.00**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**1.75**	**1.60**	**2.50**
	5CE4-21	CONCRETE STRUCTURES DESIGN	LO1	Assess the bending moment and shear force for beams, columns, slabs and footings.	3	2	3		2	1			2	1	2	2	1	2	3
			LO2	Design the flexural members to fulfill the requirements of Limit state of Flexure.	3	3	3		2	1			2	1	2	2	2	2	3
			LO3	Analyze and design collapse of shear bond, development length & curtailment of bar	3	3	3		2	1			2	1	2	2	3	2	2
			LO4	Analyze and design of flexural member with LSM and WSM method	3	3	3		2	1			2	1	2	2	1	2	2
			LO5	Analyze and design of column and column footings economically and suitably recommend the appropriate type according to site conditions	3	3	3		2	1			2	1	2	2	2	3	3
					3.00	**2.80**	**3.00**	**-**	**2.00**	**1.00**	**-**	**-**	**2.00**	**1.00**	**2.00**	**2.00**	**1.80**	**2.20**	**2.60**

	5CE4-22	Geotechnical Engineering Lab		Classify different types of soils	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-
				Determine engineering properties of soils	2	-	-	-	-	-	-	-	-	-	-	-	1	2	-
				Perform failure analysis of soils under the action of external force	-	2	-	-	-	-	-	-	-	-	-	-	-	2	-
				Modify engineering properties of soils	-	2	-	-	-	-	-	-	-	-	-	-	-	-	1
					1.50	**2.00**	-	-	-	-	-	-	-	-	-	-	**1.00**	**1.67**	**1.00**
	5CE4-23	Water Resource Engineering Design Lab	LO1	Apply the water resource concept in irrigation system, canals, diversion head works, dams, well irrigation, cross-drainage structure and hydrology.	2									2					
			LO2	Analyze the water requirement of crop, seepage losses in dam, forces acting on dam, run off and rain fall.		2								2					
			LO3	Design of canal, surface and subsurface flows, dams like embankment and gravity dam, tube well.			2						2	2					
					2.00	**2.00**	**2.00**	-	-	-	-	-	**2.00**	**2.00**	-	-	-	-	-
24	6CE03-01	Wind & Seismic Analysis	CO1	Explain the fundamental concept of shapes of structures, loadings, load flow concept and provisions for earthquake resistant constructions.	3	2	1	-	-	-	-	-	-	-	-	-	3	1	-
			CO2	Apply the construction techniques for earthquake resistant constructions for new and existing structures as codal recommendations	2	3	1	-	-	-	-	-	-	-	-	-	3	1	-
			CO3	Analyze the loadings on supporting structures, basic parameters of wind loads and seismic load.	1	3	2	-	-	-	-	-	-	-	-	-	3	1	1
			CO4	Design of wind loads, seismic loads and other loads on buildings and frame structures.	1	3	2	-	-	-	-	-	-	-	-	-	3	1	1
			CO5	Differentiate the provision for earthquake resistance building as per Indian standard code IS 4326, IS13827, IS13828, IS13920 and IS13935.	1	3	2	-	-	-	-	-	-	-	-	-	3	1	-
					1.60	**2.80**	**1.60**	-	-	-	-	-	-	-	-	-	**3.00**	**1.00**	**1.00**
25	6CE4-02	Structural Analys	CO1	**Illustrate** basic concept of strain energy, Rolling load, ILD, Arches, Shear Centre & Unsymmetrical bending and Building frames	**2**	-	-	-	-	-	-	-	-	-	-	-	1	2	-

		is-II	CO2	**Explain** Strain Energy theorem, Muller Breslau Principle, Shear Centre, unsymmetrical bending, and approximate method on building frame.	**3**	-	-	-	-	-	-	-	-	-	-	-	-	1	2	1
			CO3	**Apply** the concept of strain energy, Rolling load, ILD, Arches, Shear Centre & Unsymmetrical bending and Building frames.	**1**	**2**	-	-	-	-	-	-	-	-	-	-	-	2	-	1
			CO4	**Analyze** beam and frames using strain energy method, unit load method, rolling load, influence line diagram method and approximate methods.	**1**	**3**		-	-	-	-	-	-	-	-	-	-	1	1	1
					1.75	**2.50**	-	-	-	-	-	-	-	-	-	-	-	**1.25**	**1.67**	**1.00**
26	6CE4-03	Environmental Engineering	CO1	Analyze the various water quality standards, distinguish the water distribution system and design the various reservoirs	-	-	2	2	-	2	1	-	-	-	-	-		1	2	3
			CO2	Analyze the various water treatment methods, design and apply the various parameters used in the sewer system.	-	3	2	1	1	-	-	-	-	-	-	-		3	-	2
			CO3	Design the sewerage systems, analyze the various sewage characteristics quality parameters and distinguish the standards of disposal in land	-	-	2	2	-	2	1	-	-	-	-	-		3	-	1
			CO4	Analyze the various treatment method of sewage, evaluate various pollution sources due to improper disposal of sewage, distinguish the wastewater disposal and refuse method	-	-	-	3	1	2	2	-	-	-	-	-		2	3	2
			CO5	Analyze the quantification of air pollutants, evaluate various control methods measures for Air pollution, noise pollution, water pollution	-	-	-	3	-	2	2	-	-	-	-	-		3	2	2
					-	**3.00**	**2.00**	**2.20**	**1.00**	**2.00**	**1.50**	-	-	-	-	-		**2.40**	**2.33**	**2.00**
27	6CE-04	Design of Steel Structures	CO1	**Explain** the fundamental concept of structural steel, plastic analysis, basic steel structure elements, plate girder, gantry girder, roof trusses & truss girder bridges.	2	1			-	-	-	-	-	-	-	-		1	1	
			CO2	**Apply** the concept of mechanism method, shape factor, connection types, basic steel structure elements, plate girder, gantry girder & roof trusses in steel structures.	2	2	1		-	-	-	-	-	-	-	-		1	1	
			CO3	**Analyze** the basic steel structural members, plate girder, gantry girder & roof trusses as per the concept of Indian Standard.	1	3	1		-	-	-	-	-	-	-	-		2	2	1

			CO4	**Design** the basic steel structural members, plate girder, gantry girder & roof trusses for available site conditions as per the concept of Indian Standard.	1	2	3	2	-	-	-	-	-	-	-	-	3	2	1
					1.50	**2.00**	**1.67**	**2.00**	-	-	-	-	-	-	-	-	**1.75**	**1.50**	**1.00**
28	6CE4-05	Estimating and Costing	CO1	To understand the various types of Estimates.	3	3	2	-	-	2	2	-	2	-	2	-	2	-	-
			CO2	To Analyze the quantities of construction material.	3	3	1	-	-	2	2	-	2	-	2	-	1	1	2
			CO3	To apply the Rate of a construction material	3	3	1	-	2	1	1	-	2	-	2	-	1	-	1
			CO4	To evaluate the Detailed estimate and valuation.	3	3	2	-	-	2	2	-	2	-	2	-	1	-	2
					3.00	**3.00**	**1.50**	-	**2.00**	**1.75**	**1.75**	-	**2.00**	-	**2.00**	-	**1.25**	**1.00**	**1.67**
29	6CE5-12	Solid and Hazardous Waste Management	CO1	Characterization of solid waste, hazardous waste constituents	-	-	-	-	-	2	2	-	-	0	-	-	-	-	2
			CO2	Understand health and environmental issues related to solid waste management	-	-	-	-	-	2	2	-	-	1	-	-	-	-	2
			CO3	Apply steps in solid waste management-waste reduction at source, collection techniques, materials and resource recovery/recycling, transport of solid waste	-	-	-	-	-	2	2	-	-	1	-	-	-	-	2
			CO4	Analyze treatment and disposal techniques, economics of the onsite vs. offsite waste management	-	-	-	-	-	2	2	-	-	1	-	-	-	-	2
					-	-	-	-	-	**2.00**	**2.00**	-	-	**0.75**	-	-	-	-	**2.00**
30	6CE5-13	Traffic Engineering & Manag	CO1	Understand the fundamentals concepts of Traffic Engineering and its features, elements of highway safety and approaches to accident Studies.	2	1	-	-	-	-	-	-	-	-	-	-	1	1	-
			CO	Identify traffic stream characteristics.	2	2	1	-	-	-	-	-	-	-	-	-	1	1	-

		ement	2																			
			CO3	Apply the learned principles in planning, designing and management of traffic and traffic aids.	1	3	1	-	-	-	-	-	-	-	-	-	-	2	2	1
			CO4	Analyze traffic data to find solutions to traffic problems.	1	2	3	1	-	-	-	-	-	-	-	-	-	3	2	1
					1.50	**2.00**	**1.67**	**1.00**	-	-	-	-	-	-	-	-	-	**1.75**	**1.50**	**1.00**
31	6CE5-14	Bridge Engineering	CO1	Explain different types of bridges, components and loadings as per Indian standards provisions.	1	-	-	-	-	**1**	**1**	-	-	-	-	-	-	1	-	-
			CO2	Apply the fundamental concept of bridge loadings on Steel and RCC bridges.	2	-	-	-	-	-	-	-	-	-	-	-	-	1	2	-
			CO3	Analyze the RCC and steel bridges using Courbons and Hendry-Jaegar method.	-	2	2	-	-	-	-	-	-	-	-	-	-	2	2	-
			CO4	Design of Bearings, Steel and RCC bridges according to IRC codal provisions.	-	-	2	2	-	-	-	-	-	-	-	-	-	2	2	-
					1.50	**2.00**	**2.00**	**2.00**	-	**1.00**	**1.00**	-	-	-	-	-	-	**1.50**	**2.00**	-
32	6CE5-15	Rock Engineering (paper not found)	CO1	Define the use of rock mass classification systems (RMR & Q)	3	1	-	-	-	-	-	-	-	-	-	-	-	1	1	1
			CO2	Explain methods for in situ investigation and laboratory testing of rock matrix and discontinuities.	3	2		-	-	-	-	-	-	-	-	-	-	2	-	1
			CO3	Apply the knowledge ofthe characteristics and the mechanical properties (strength and failure criteria) of rock mass, rock matrix and discontinuities.	3	2	-	-	-	-	-	-	-	-	-	-	-	1	2	2
			CO4	Analyse the stress distribution (isotropic, anisotropic) in situ and around an opening in rock (competent rock, jointed rock mass, blocky rock)	**3**	**2**	**1**	-	-	-	-	-	-	-	-	-	-	3	2	-
					3.00	**1.75**	**1.00**	-	-	-	-	-	-	-	-	-	-	**1.75**	**1.67**	**1.33**

3 3	6CE5-16	GIS & Remote Sensing	CO1	Understand the basic concepts of remote sensing and GIS	1			-	1	-	-	-	1	-	-	-			
			CO2	Evaluate the photogrammetry, remote sensing and GIS technology and its processes.	1			-	2		-	-	-	-	-	-			-
			CO3	Analyze the Remote sensing and GIS methods			1	-	2	-	-	-	-	-	-	-			-
			CO4	Apply the knowledge of remote sensing and GIS in civil engineering		2	2		2	2	-	-	-	-	-	-	2	3	
					1.00	**2.00**	**1.50**	-	**1.75**	**2.00**	-	-	**1.00**	-	-	-	**2.000**	**3.000**	-
	6CE4-21	Environmental Engineering Design and Lab	LO1	understaing various water quality standards, distinguish the water distribution system and design various filters,	1	2	2	3	2	3	3	1	1		2	2	1	2	3
			LO2	Analyze the various water treatment methods, aerobic and anaerobic units, design and apply the various parameters used in the sewer system.	2	2	2	3	_	3	3	1	-		-	2	1	1	2
			LO3	Analyze the sewerage systems, analyze the various sewage characteristics quality parameters and distinguish the standards of disposal in land and water bodies	2	2	3	3	2	2	3	2	1		2	2	1	2	2
			LO4	Evaluate various characteristics of sewage, various tests like BOD,DO.COD which controls the disposal of sewage	1	2	2	2	2	2	3	2	1		2	2	2	2	3
					1.50	**2.000**	**2.25**	**2.75**	**2.00**	**2.50**	**3.00**	**1.50**	**1.000**	-	**2.000**	**2.000**	**1.25**	**1.75**	**2.50**
	6CE4-22	STEEL STRUCTURES DESIGN LAB	LO1	Explain the fundamental concept of structural steel, plastic analysis, basic steel structure elements, plate girder, gantry girder, roof trusses & truss girder bridges.	2	1						1	1	2			1	1	
			LO2	Apply the concept of mechanism method, shape factor, connection types, basic steel structure elements, plate girder, gantry girder & roof trusses in steel structures.	2	2	1					2	1	2			1	1	
			LO3	Analyze the basic steel structural members, plate girder, gantry girder, roof trusses and case studies on steel structures as per the concept of Indian Standard.	1	3	1					2	1	2			2	2	1
			LO4	Design the basic steel structural members, plate girder, gantry girder & roof trusses for available site conditions as per the concept of Indian Standard.	1	2	3	2				2	1	2			3	2	1
					1	**2**	**1**	**2**	-	-	-	**1**	**1**	**2.**	-	-	**1.**	**1.**	**1.**

					.50	**.00**	**.67**	**.00**				**.75**	**.00**	**00**			**75**	**50**	**00**
	6CE4-23	QUANTITY SURVEYING AND COSTING	LO1	To prepare preliminary and detailed estimates by various methods.	3	3	2										1	2	
			LO2	To Evaluate analysis of various items of work	2	2	1										1	2	1
			LO3	To analyze earth work for road, canals ad channels.	2	2	1										2		1
			LO4	To apply Valuation of Buildings and Properties.	3	2											1	2	2
					2.50	**2.25**	**1.33**	-	-	-	-	-	-	-	-	-	**1.25**	**2.00**	**1.33**
	6CE4-24	Water and Earth Retaining Structure design lab	LO1	Use the stress strain behavior of steel and concrete; concept of working stress and limit state methods as per IS: 456-2000.	2	3	2										1	2	
			LO2	Analyze the continuous and curved beam.	2	3	2										1	2	1
			LO3	Apply limit state design for flexure, shear, torsion, and anchorage & development length for dome.	2	2	3	1									2		1
			LO4	Classify & design of water tanks according to IS: 3370	1	2	3										1	2	2
			LO5	Analyze the behavior of retaining wall subjected to eccentric load and study the design of various parameters	1	2	2	2									2	1	1
					1.60	**2.40**	**2.40**	**1.50**	-	-	-	-	-	-	-	-	**1.40**	**1.75**	**1.25**
	6CE4-25	Foundation Design	LO1	Explain the fundamental concepts Foundation Engineering.	2	—	2	—	—	—	—	—	—	—	—	—	1	—	—
			LO2	Compute Load bearing capacity and Settlement of foundations with analytical methods.	1	1	2	—	—	—	—	—	—	—	—	—	1	2	—
			L	Design of safe load and dimensions of shallow, deep and machine foundations	2	—	3	—	—	—	—	—	—	—	—	—	2	2	—

			CO3	based on the geotechnical aspects.																
					1.67	**1.00**	**2.33**	-	-	-	-	-	-	-	-	-	**1.33**	**2.00**	-
34	7CE4-01	Transportation Engineering	CO1	understand the basics of highway construction, material and planning.	3	2	1			-	-	-	1	-	-	-	1	1	
			CO2	Apply the concepts road construction in highway development	3	2	2		1	1	-	-	-	-	-	-	2	1	
			CO3	Analyze the various equipment and advance technology used in road construction	2	2	3		3	-	-	-	-	-	-	-	2		
			CO4	Evaluate the construction process for railway Engineering and airport Engineering	3	2	3		2	-	-	-	-	-	-	-	2	2	
			CO5	Designing of rigid and flexible pavements.	3	2	3			1	-	-	-	-	-	-	2	2	
					2.80	**2.00**	**2.40**	-	**2.00**	**1.00**	-	-	**1.00**	-	-	-	**1.80**	**1.50**	-
35	7EC6-60.1	Principle of Electronic communication	CO1	Describe the principles of various digital modulation systems and their properties,including bandwidth, channel capacity, transmission over bandlimited channels, inter-symbol interference (ISI), demodulation methods, and error performance in the presence of noise.	3	2	-	-	-	-	-	-	3	-	-	-	-	-	2
			CO2	Apply the concepts to practical applications in telecommunication	3	2	-	-	-	-	-	-	3	-	-	-	-	-	2
			CO3	Analyse communication systems in both the time and frequency domains.	3	2	3	-	-	-	-	-	3	-	-	-	-	-	2
			CO4	Design a communication system comprised of both analog and digital modulation techniques.	3	3	3	3	-	-	-	-	3	-	-	-	-	-	2
					3.00	**2.25**	**3.00**	**3.00**	-	-	-	-	**3.00**	-	-	-	-	-	**2.00**

36	7EC6.60.2	Micro System Smart Technology	CO1	Explain the smart grids components and architecture	3	3	2	2	2	3	3	3	2	-	3	3	-	-	2
			CO2	Apply different measuring methods and sensors used in smart grid	3	2	2	2	-	3	2	-	3	2	3	3	-	-	2
			CO3	Analyze various renewable energy technologies	3	2	3	3	3	3	-	-	2	2	2	3	-	-	2
			CO4	Designing of various smart grid technology based devices.	2	2	3	2	2	2	2	3	3	2	2	3	-	-	2
					2.75	**2.25**	**2.50**	**2.25**	**2.33**	**2.75**	**2.33**	**3.00**	**2.50**	**2.00**	**2.50**	**3.00**	**-**	**-**	**2.00**
37	7ME6-60.1	Finite Element Analysis	CO1	To Apply direct stiffness, Rayleigh-Ritz, Galerkin and other mathematical methods to solve engineering problems.	3	-	-	-	-	-	-	-	-	-	-	-	1	2	-
			CO2	To Analyze 1D and 2D problems of statics, fluid mechanics and heat transfer.	-	3	-	-	-	-	-	-	-	-	-	-	1	2	-
			CO3	To evaluate the Eigenvalues and Eigenvectors for stepped bar and beam, explain nonlinear geometric and material non linearity.	-	-	3	-	-	-	-	-	-	-	-	-	-	2	-
			CO4	To Create solutions for Higher order problems of the engineering field.	-	-	-	3	-	-	-	-	-	-	-	-	-	1	-
					3.00	**3.00**	**3.00**	**3.00**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**1.00**	**1.75**	**-**
38	7ME6-60.2	Quality Management	CO1	Describe the basic concept of Quality Management.	1	-	-	-	-	-	-	-	-	-	-	-	2	-	-
			CO2	Explain a system, component, and process to meet desired needs within limits using modeling process quality and learn the concept of control charts.	2	-	-	-	-	-	-	-	-	-	-	-	2	-	-
			CO3	Illustrate the concept of Quality Assurance, Acceptance sampling and study quality systems like ISO9000, ISO 14000 and Six Sigma.	3	-	-	-	-	-	-	-	-	-	-	-	2	-	-
			CO4	Identify engineering problems, concept of reliability and Taguchi Method of Design of experiments.	-	2	-	-	-	-	-	-	-	-	-	-	1	-	-
					2	**2**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**1.**	**-**	**-**

					.00	**.00**												**75**			
39	7EE6-60.1	Electrical Machines and Drives	CO1	Understand the constructional details and principle of operation of rotating electrical machines	3	3	2	0	0	0	0	-	-	-	-	-	-	-	-
			CO2	Acquire knowledge about the working principle and various aspects of electric drives.	3	3	2	2	1	1	2	-	-	-	-	-	-	-	-
			CO3	study and analyze the various control techniques for speed control on various electric drives .	3	3	2	2	0	0	0	-	-	-	-	-	-	-	-
			CO4	Develop design knowledge on how to design the speed control and current control loops of an electric drive	2	2	2	2	2	0	0	-	-	-	-	-	-	-	-
					2.75	**2.75**	**2.00**	**1.50**	**0.75**	**0.25**	**0.50**	-	-	-	-	-	-	-	-
40	7EE6-60.2	Power Generation Sources	CO1	classify and describe various renewable energy sources.	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO2	predict possible renewable energy sources.	3	1	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO3	illustrate the renewable energy sources.	3	2	1	-	-	-	-	-	-	-	-	-	-	-	-
			CO4	re-organize energy sources.	3	3	2	1	-	-	-	-	-	-	-	-	-	-	-
			CO5	prioritize all other renewable energy sources as needed by societal application.	3	1	1	-	-	-	-	-	-	-	-	-	-	-	-
					2.80	**1.75**	**1.33**	-	-	-	-	-	-	-	-	-	-	-	-
41	7CS6-60.1	Quality Management / ISO 9000	CO1	Understand the importance of quality management and the ways individuals can affect quality.	-	3		-	-	-	-	-	-	-	-	-	1	-	-
			CO2	Analyse the components of a quality management system and the role of the quality management system.	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-

			CO3	Apply quality management to improve computer based systems.	-	-	-	3	-	-	-	-	-	-	-	-	1	-	-
			CO4	Design Various components of quality system to avoid failures and rectification.	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-
					-	**3.00**	**3.00**	**3.00**	-	-	-	-	-	-	-	-	**1.00**	-	-
42	7CS6-60.2	Cyber Security	CO1	Develop The Understanding Of Cybercrime and legal Perspectives of Security Implications for Organizations in respect to the Mobile and Wireless Devices.	-	-	-	-	-	2	-	-	-	-	-	-	-	-	1
			CO2	Analyze different cyber offences & attacks and Determine How a Criminals plan the cyber Attacks.	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO3	Understanding the cyber security solutions and use of cyber security Tools in Cybercrime.	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-
			CO4	Evaluate and communicate the Management Perspective human role in security systems with an Organizational, emphasis on ethics, social engineering vulnerabilities and training.	-	-	-	-	-	-	-	2	-	-	-	-	-	-	1
					-	**2.00**	-	-	**3.00**	**2.00**	-	**2.00**	-	-	-	-	-	-	**1.00**
	7CE4-21	Road Material Testing Lab	LO1	Characterization of the pavement materials	**1**	**2**										**1**	**2**	**2**	
			LO2	Perform quality control tests on pavements and pavement materials	**2**	**2**	**2**									**1**	**2**	**2**	
			LO3	Estimate earth work from longitudinal and cross-section details of design grade intersections	**2**	**2**	**2**	**2**								**2**	**2**	**2**	**1**
					1.67	**2.00**	**2.00**	**2.00**	-	-	-	-	-	-	-	**1.33**	**2.00**	**2.00**	**1.00**
	7CE4-22-	Professional Practices	LO1	Understand the basic concepts of Different types of Knots, Different types of plan layout in field and type of scaffolding and ladders.	2	3	2										1	2	
			L	Identify the preparation of bar bending schedule for reinforcement works.	2	3	2										1	2	1

		&Field Engineering Lab	O2																	
			LO3	Analysis of Estimation and Valuation methods of buildings and properties.	2	2	3											2		1
					2.00	**2.67**	**2.33**	-	-	-	-	-	-	-	-	-	**1.33**	**2.00**	**1.00**
	7CE4-23	Soft Skills Lab	LO1	To develop formal communication skills in a work place.																
			LO2	To Enhancing team building and time management skills by working in group activities																
			LO3	To enable the ability of critical & lateral thinking to present themselves confidently in job interviews.																
					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7CE4-24	Environmental Monitoring and Design Lab	LO1	Understanding water and waste water treatment plant process and design	2													2		
			LO2	Apply various methods to measure air, noise, water and waste water pollution		3													3	
			LO3	Apply various equipment, technology to demonstrate air , noise pollution, water and waste water treatment process	2	3													2	3
			LO4	Examine and Analyze the quantification of air and noise pollutants, water and waste water pollution	2		3													2
			LO5	Evaluate various control methods measures for air, noise pollution , water and waste water pollution	2	2	3													2
					2.00	**2.67**	**3.00**	-	-	-	-	-	-	-	-	-	**2.00**	**2.50**	**2.33**
	7CE7-30	Practical Training	LO1	Participate in the projects in industries during his or her industrial training.	2	-	-	-		-					-		-	-	
			LO2	Describe use of advanced tools and techniques encountered during industrial training and visit.		-	-	-	3	-					-		-	-	

			LO 3	Interact with industrial personnel and follow engineering practices and discipline prescribed in industry.		-	-	-		3					-		-	-	
			LO 4	Develop awareness about general workplace behavior and build interpersonal and team skills.		-	-	-		-		3				-		-	-	
			LO 5	Prepare professional work reports and presentations.		-	-	-		-						-	3	-	-	
					2.00	-	-	-	**3.00**	**3.000**	-	**3.00**	-	-	-	**3.00**	-	-	-
	7CE7-40	Seminar	LO 1	Discover potential research areas and conduct a survey of several available literatures in the preferred field of study.	2					3	3								
			LO 2	Compare and contrast the several existing solutions for research challenge.						2	3								
			LO 3	Report and present the findings of the study conducted in the preferred domain.							2			2	2	3			
					2.00	-	-	-	-	**2.50**	**2.67**	-	-	**2.00**	**2.00**	**3.00**	-	-	-
43	8CE4-01	Project Planning and Construction Management	CO 1	Understand the basic principles of project planning, Objectives, stages, categories of construction project, Project Management and Financial aspects of project management	1	-	-	-	-	-	-	2	-	-	3	-	1	1	3
			CO 2	Evaluate the different project management techniques and also to analyze the methods of network for various project	1	3	-	-	-	-	-	-	-	-	2	-	1	1	3
			CO 3	Analyze the optimum duration of a project and optimum cost of the project, and how to updating of project networks, resources allocation	1	3	-	-	-	-	-	-	-	-	2	-	2	1	3
			CO 4	Differentiate the types of tender and contract and Contract document, Legal aspects of contracts, Contract negotiation and arbitration	1	-	-	-	-	2	-	-	-	-	3	-	1	1	3

			CO5	Categorized the causes of accidents and safety measure to be taken against different construction sites and understood of Project Management Information System, Environmental and social aspects of various types of construction projects	1	-	-	-	-	3	2	-	-	-	1	-	1	1	2
					1.000	**3.000**	-	-	-	**2.500**	**2.000**	**2.000**	-	-	**2.220**	-	**1.220**	**1.000**	**2.800**
44	8CS6-60.1	Big Data Analytics (Open Elective-II)	CO1	Understanding of Big Data and their needs in Industry	3	1.5	-	-	-	-	-	-	-	-	-	-	-	1	-
			CO2	Designing of Hadoop and Google File System	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO3	Analysis of Map Reduce and their basic programs map reduce.	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-
			CO4	Design an Hive Data system.	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-
					3.000	**2.225**	**3.000**	**3.000**	-	-	-	-	-	-	-	-	-	**1.000**	-
45	8CS6-60.2	IPR, Copyright and Cyber Law of India (Open Elective-II)	CO1	To Determine and analyse the domain name system (DNS) in internet and various cybercrime offence in cyber space.	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO2	To understand the concept of Intellectual Property and Intellectual Property Rights with special reference to India and abroad.	-	-	-	-	-	-	-	3	-	-	-	-	-	-	1
			CO3	To Apply intellectual property law principles including the copyright law, patents law, designs and trademarks, to real problems and analyse the social impact of intellectual property law and policy.	-	-	-	-	-	3	-	-	-	-	-	-	-	-	2
			CO4	To Study the Jurisdiction Issues in Cyber Space and Competition Law in India	-	2	-	-	-	-	-	-	-	-	-	-	-	-	1
					3.000	**2.000**	-	-	-	**3.000**	-	**3.000**	-	-	-	-	-	-	**1.333**
4	8E	Energy	C	understand the current Energy Scenarios in India.	3		-	-	-	-	-	-	-	-	-	-	-	-	-

6	E6-60.1	Audit and Demand side Management	CO1																	
			CO2	Illustrate the energy auditing of motors, lighting system and building, by appropriate analysis methods through survey instrumentations.	3	3	-	-	-	-	-	-	-	-	-	-	-	2	-	-
			CO3	understand the Electrical-Load Management and Demand side Management.	3	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO4	apply the Energy Conservation in transport, agriculture , household and commercial sectors.	3	2	2	1	-	-	-	-	-	-	-	-	-	2	-	-
					3.00	**2.33**	**2.00**	**1.00**	-	-	-	-	-	-	-	-	-	**2.00**	-	-
47	8EE6-60.2	Soft Computing	CO1	Learn about soft computing techniques and their applications.	2	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO2	Analyze various neural network architectures.	2	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO3	Define the fuzzy systems			3	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO4	Understand the genetic algorithm concepts and their applications	3	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO5	Identify and select a suitable Soft Computing technology to solve the problem.	3	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-
					2.50	**2.25**	**3.00**	-	-	-	-	-	-	-	-	-	-	-	-	-
48	8ME6-60.2	Simulation Modeling and Analysis	CO1	Student will able to define the simulation modeling and analyze the practical situations in organizations	3	-	-	-	-	-	-	-	-	-	-	-	-	**2**	-	**1**
			CO2	Examine the random numbers and random variates approach in different applications.	2	-	-	-	-	-	-	-	-	-	-	-	-	**0**	-	**0**
			CO3	Investigate the sensitivity of simulation solutions for realistic problems.	-	3	-	-	-	-	-	-	-	-	-	-	-	**0**	-	**0**

			CO4	Evaluate the solution based on realistic situation including existing standards and propose the suitable solution with justification.		3	-	-	-	-	-	-	-	-	-	-	-	**0**	-	**0**
					2.50	**3.00**	-	-	-	-	-	-	-	-	-	-	-	**0.50**	-	**0.25**
49	8ME6-60.1	Operations Research	CO1	Describe the characteristics of different types of optimization techniques with the appropriate tools to be used in type problem.	2	-	-	-	-	-	-	-	-	-	-	-	**2**	-	-
			CO2	Examine the concept of optimization techniques to build and solve different types of industrial problems, by using appropriate techniques.	3	-	-	-	-	-	-	-	-	-	-	-	**2**	-	-
			CO3	investigate the sensitivity of a solution for different variables and propose recommendations in language understandable to the decision-makers in realistic problem.	-	3	-	-	-	-	-	-	-	-	-	-	**2**	-	-
			CO4	Evaluate the solution based on realistic situation including existing standards and propose the suitable solution with justification.	-	-	3	-	-	-	-	-	-	-	-	-	**2**	-	-
					2.50	**3.00**	**3.00**	-	-	-	-	-	-	-	-	-	**2.00**	-	-
50	8EC6.60.1	Industrial and Medical applications of RF Energy	CO1	Understanding of basic concepts and Principles of EM wave, propagation reflection and transmission. [Understanding]	3	2	-	2	-	-	-	-	-	-	-	3	-	-	2
			CO2	Apply the knowledge for interest in complex dielectric constant, dipolar loss mechanism and design mechanism to understand the effect of rate rise of temperature.. [Applying & Understanding]	2	3	-	2	-	-	-	-	-	2	-	3	-	-	2
			CO3	Analyze the structure of RF heating in industrial application. [Analyzing]	2	3	2	-	2	-	2	-	-	-	-	3	-	-	2
			CO4	Design of Hazards and safety standards in various engineering problem. [Create & Design].	-	3	2	-	-	-	-	-	-	2	-	3	-	-	2
					2.33	**2.75**	**2.00**	**2.00**	**2.00**	-	**2.00**	-	-	**2.000**	-	**3.000**	-	-	**2.000**

5 1	8EC6-60.2	Robotics and Control	CO1	Understand the fundamentals of robotics and its components, methods of linear motion into rotary motion and vice-verse. [Understanding]	3	-	-	-	-	-	-	-	-	-	-	-	-	-	2
			CO2	Apply the appropriate techniques for movement of robotic joints with computers/microcontrollers. [Applying & Understanding]	3	3	2	-	-	-	-	-	-	-	-	-	-	-	2
			CO3	Analyze parameters required to be controlled in a Robot for specific application. [Analyzing]	3	3	-	2	-	-	-	-	-	-	-	-	-	-	2
			CO4	Design and Develop small automatic / autotronics applications with the help of Robotics for solving the real life problems [Create & Design].	-	-	3	3	3	-	-	-	-	-	-	-	-	-	2
					3.00	**3.00**	**2.50**	**2.50**	**3.00**	-	-	-	-	-	-	-	-	-	**2.00**
5 2	8CE7-50	Project	CO1	Team work to select an engineering problem and its solution	2	2	-	-	-	3	-	3	—	—	-	-	1	1	2
			CO2	Formulate the problem and design using modern technologies and new software learning	1	—	-	-	-	-	-	3	3	3	-	-	2	-	1
			CO3	Develop the engineering solutions by considering society and environment	2	—	-	-	-	-	-	2	3	3	-	-	1	-	-
			CO4	Applying solution considering societal, health, safety, legal and cultural issues	2	1	-	-	-	-	-	-	2	2	-	-	1	-	-
			CO5	Analysis and explanation of data to provide the valid conclusions.	2	—	-	-	-	1	-	-	2	2	-	-	2	-	-
			CO6	Use of management principles in project functioning and consider the multidisciplinary environments.	-	-	-	-	-	-	-	-	-	-	3	2	-	1	2
			CO7	To work effectively in Project as an individual member and team by following the ethical principles	-	-	-	-	-	-	-	3	3	—	—	—	-	-	1
			CO8	Communicate effectively for various activities with help of reports, presentations and verbal communication that can help in life-long learning.	-	-	-	-	-	-	-	—	—	3	—	2	-	-	2
					1.7	**1.0**	-	-	-	**1.0**	-	**2.6**	**2.6**	**2.60**	**3.00**	**2.00**	**1.50**	**1.00**	**1.50**

					5	**0**				**0**		**7**	**0**							
	8CE4-21	PPCM LAB	LO1	Understand the capital budgeting, Contracts, Tenders and related terms, Arbitration, PERT and CPM, PPP model	3									1			2	2	1
			LO2	Analysis the capital budgeting, Estimation of various items, Network analysis, Project based on PPP model.		3			1				1	1	1		2	2	1
			LO3	Prepare the bar chart diagram, Project Progress Network muster roll, measurement book, tender documents, Tender Notice.			3		2				1	1	1		2	2	1
					3.00	**3.00**	**3.00**	**-**	**1.50**	**-**	**-**	**-**	**1.00**	**1.00**	**1.00**	**-**	**2.00**	**2.00**	**1.00**
	8CE4-22	PAVEMENT DESIGN LAB	LO1	To understand the basic concepts of pavements and its types.	1	2										1	2	1	
			LO2	To analyzes the bituminous mix design.	2	2	2	1								1	2	1	
			LO3	To design the flexible and rigid pavements.	2	2	2	2								1	2	1	1
			LO4	To analyze rural roads specifications.	2	2	2	2								1	2	1	2
					1.75	**2.00**	**2.00**	**1.67**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**1.00**	**2.00**	**1.00**	**1.50**

12 Course File Sample

Outcome Based Process Implementation Guidelines for Faculty

12.1 Labelling your course file

- **Name of faculty:**
- **Class- SEM:**
- **Branch:**
- **Course Code:**
- **Course Name:**
- **Session:**

12.2 List of Documents:

1. **Vision & Mission Statements of the Institute**
2. **Vision & Mission Statements of the Department**
3. **List of PEO, PSO and PO of department**
4. **Personal Time Table**
5. **RTU Syllabus**
6. **Document as per point no. 1-4 in guidelines**
7. **Course Plan**
8. **Document as per point no6-12 in guidelines**
9. **Document for CO AssessmentStage1: As per point no13, upto13.2.5**
10. **Document for CO AssessmentStage2: As per point no13, upto13.2.5, with comparison to previous**
11. **Document for CO AssessmentStage3: As per point no13, upto13.2.5, with comparison to previous**
12. **Document for CO Attainment through RTU Component: Previous RTU Result: point no. 13.3 upto13.3.2**
13. **Document for PO attainment through RTU Component: Previous RTU Result: point no. 13.4 upto13.4.2**
14. **Document for Overall Attainment of PO through CO:As per point no13.5**
15. **Document for last three years(Repeatprocessfrom6-14 above): Comparative data should be included in course file**
16. **Lecture Notes**
17. **Copy of Assignments questions given from time to time**
18. **Copy of Tutorial Sheets given (if applicable)**
19. **RTU Question Papers with answer**
20. **Internal Assessment Question Papers with answer from time to time**
21. **Topics covered beyond syllabus-References**
22. **Details of any other activity and its assessment through rubric be included**
23. **Mapping department level/focus activities with your COs**

13 Outcome Based Process Implementation Guidelines for Faculty

Course CO-PO, Preparation, Assessment Formats

Academic Session: 2021-2022 **Class:** **Semester:**

Name of the Faculty:

Subject: **Subject Code:**

This document is meant as guidelines for implementing Outcome based education system as a part of NBA process.

1. **Vision & Mission of Department: Statement and Mapping with Institute Mission** **Here you have to include department mission & vision statements and show mapping of keywords with institute mission.**
2. **Program Educational Objectives (PEOs): Statement and Mapping with Department Vision & Mission**
   Here you have to include department PEO statements and show mapping of keywords with department vision & mission.
3. **Program Specific Outcome (PSOs): Statement and Mapping with Department Vision & Mission**
   Here you have to include department PSO statements and show mapping of key words with department vision & mission.
4. **Program Outcome (POs): Statement and Mapping with PEO and PSO**
   Here you have to include PO statements and show mapping of keywords with department PEOs & PSOs.
5. **Course Plan (Deployment):**

(Please write how you intend to cover the contents :i.e., coverage of Units by lectures, guest lectures, design exercises, solving numerical problems, demonstration of models, model preparation, or by assignments, etc.), **for example**

- O **coverage of Units by lectures**
- O **design exercises**
- O **demonstration of models**
- O **by assignments**

Lecture No.	Lect. No.	Topics, Problems, Applications	CO/LO	Target Date of Coverage	Actual Date Of Coverage	Ref. Book/Journal with Page No.
1.	1	Introduction of OS	CO1	12/07/2019	12/07/2019	T1 Page121-126
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						
10.						
11.						
12.						

ExampleT1: Engineering Geology, By Parbin Singh, Kataria & Sons, Edition 2016

6. **Course Outcomes:** Look for strong mapping of course with specific PO (2-3). Define Generic Course Outcomes (max4to6) using Blooms Taxonomy.(In case of Lab Course define generic Lab Outcomes LO and refer CO as LO in this document).

i. **3CE101.1(CO1)**
ii. **3CE101.2(CO2)**
iii. **3CE101.3(CO3)**
iv. **3CE101.4(CO4)**
v. **3CE101.5(CO5)**

7. **CO-PO-PSO Mapping: Mapping Levels: 1- Low, 2- Moderate, 3-Strong**
   First try to find out 2-3 PO those are strongly related to your subject contents. Go through the contents and try to formulate4-5CourseOutcomeasperbloom taxonomy. Map each CO with PO and PSO as above. While mapping please rethink if you map any PO with3, it means you are planning to deliver the contents of that level and you will also examine the students at that level.

CO	PO												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1															
CO2															
CO3															
CO4															
CO5															

7.1 PO Strongly Mapped:(Example):
O **PO2: Write full statement with keywords highlighted** o**PO3: Write full statement with keywords highlighted** o**PO4: Write full statement with keywords highlighted**

7.2 PO Moderately Mapped: (Example)
O **PO1: Write full statement with keywords highlighted**
O **PO11: Write full statement with keywords highlighted**
7.3 PO Low Mapped: (Example)
O **PO12: Write full statement with keywords highlighted**

7.4 PSO Strongly Mapped: (Example)
O **PSO1 : Write full statement with keywords highlighted**

7.5 P S O Moderately Mapped: (Example)
O **PSO2: Write full statement with keywords highlighted**

6.6 PSO Low Mapped: (Example)
O **PSO3: Write full statement with keywords highlighted**

8. **Rules for CO/LO Attainment Levels: (Targets)**

All the courses of your department should be divided into three categories A-Most Difficult course, B-Medium level of Difficulty, C-Low level of Difficulty–(Easy)
According to difficulty level, you can decide specific range for CO attainment targets for Continuous assessment from the following table.
Remember that targets for internal assessment should be higher.

Course Category	Level3	Level2	Level1
A	**60% of students getting >60% marks**	**50-60% of students getting >60% marks**	**40-50% of students getting >60% marks**
B	**80% of students getting >60% marks**	**60-80% of students getting >60% marks**	**40-60% of students getting >60% marks**
C	**90% of students getting >60% marks**	**70-90% of students getting >60% marks**	**40-70% of students getting >60% marks**

9. End Term RTU Component: CO Attainment Levels

All the courses of your department should be divided into three categories A-Most Difficult course, B-Medium level of Difficulty, C-Low level of Difficulty–(Easy)
According to difficulty level and the results of past 3-5 years, you can decide specific range for CO attainment targets for RTU component from the following table.

Course Category	Level3	Level2	Level1
A	**50% of students getting >60% marks**	**40-50% of students getting >60% marks**	**30-40% of students getting >60% marks**
B	**60% of students getting >60% marks**	**40-60% of students getting >60% marks**	**30-40% of students getting >60% marks**
C	**80% of students getting >60% marks**	**60-80% of students getting >60% marks**	**40-60% of students getting >60% marks**

For the specific CO/LO attainment levels of your respective course please use the above tables as reference according your subject difficulty level and prepare following table.

S. No.	Course Type	Attainment Level=1	Attainment Level=2	Attainment Level=3
1	**Theory Courses** Mid Semester Exams			
2	**Theory Courses** University Exam			
4	**Practical Courses** –Internal Exams			
5	**Practical Courses** -University Exam			
6	**Assignments/Unit Test**			
7.	**Any other**			

10. CO wise Assessment Activities (as Mentioned in Session Plan):
You can plan for each CO, activities/assessment tools to be conducted/used for its achievement.
Use X to those you select for specific CO. Remove all un used columns.

	Activities															
CO	**Pre Mid I Test**	**Post MidI Test**	**Quiz1**	**Quiz 2**	**Pre Mid II Test**	**Post MidII Test**	**Assignment1**	**Assignment2**	**Workshop**	**Seminar**	**Project**	**Training**	**Discussion**	**Mid1**	**Mid2**	**Ind. visit**
CO1																
CO2																
CO3																
CO4																
CO5																
CO6																

In case of Lab course some activities are as follows :

LO	Internal Practical exams	Laboratory Tests	Viva	Records	Project Presentation	Project Evaluation	External practical exams
LO1							
LO2							
LO3							
LO4							

11. CO wise Assessment Activities:

Based on CO-PO mapping, determine targets for each CO as average of targets of all relevant POs.

CO	PO												Avg.	PSO		
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**CO Targets**	**PSO1**	**PSO2**	**PSO3**
CO1																
CO2																
CO3																
CO4																
CO5																

12. Activity wise Assessment Tools:

This gives you generalized view of different direct and indirect tools those can be used for assessment /achievement of CO/PO.(Decide which tools are required forassessing a particular CO/LO and in reference to Course A, B, C difficulty level).

Sr. No.	Activity	Assessment Method	Tools	Weightage Marks	Recommendation
1.	Pre-MidTerm1	Direct	Marks	10	For CO
2.	Post-MidTerm1	Direct	Marks	10	For CO
3.	Quiz1	Direct	Marks	10	For CO
4.	Quiz2	Direct	Marks	10	For CO
5.	PreMidTerm2	Direct	Marks	10	For CO
6.	Post MidTerm2	Direct	Marks	10	For CO
7.	MidTerm1	Direct	Marks	20	For CO
8.	MidTerm2	Direct	Marks	20	For CO
9.	Assignment 1	Direct	Marks	10	For CO
10.	Assignment 2	Direct	Marks	10	For CO
11.	Workshop	Indirect	Rubrics	5	For LO
12.	Seminar/SPL	Indirect	Rubrics	5	For LO
13.	Project (Minior NSP)	Indirect	Rubrics	20	For LO
14.	Discussion	Indirect	Rubrics	5	For LO
15.	Training	Indirect	Rubrics	20	For LO
16.	Industrial Visit	Indirect	Rubrics	20	For LO
17.	Or any other activity	Direct/ Indirect	Marks/ Rubrics	any	For LO
18.					
Note that for every rubrics you need to decide assessment criteria, range of marks or weightage–above values are indicative					

13. CO Assessment Process:

After every activity (Ideally as per above table): (Frequency of Assessment- Can be taken as monthly). So the assessment can be for all activities held during the month. Do the following.

13.1 Attainment of COs

13.1.1 AttainmentTableforCO1: 3CSA101.1

CO1:3CE101.1: Attainment Table(Columns) As Applicable CO wise-Monthly									
Student	**PreMidI Test 10**	**Quiz1 10**	**Assignment 10**	**Quiz1 10**	**WS 10**	**Training 10**	**Total (60)**	**%0f Marks**	**Level of Attainment**
Name1									**3**
Name2									**2**
Name3									**1**
Name4									**2**
Name5									**1**
Name6									**2**
----									**--**
------									**--**
	No. of Students attainedlevel3=					**%of Students AttainedLevel3=**			
	No. of Students attainedlevel2=					**%of Students AttainedLevel2=**			
	No. of Students attainedlevel1=					**%of Students AttainedLevel1=**			
	Target Achieved= ?(Check Level3%attainment-IfNoFindGap)								
	Mark X for absent-Take avg. of all present								

(Repeat it for all other COs, (CO2– CO5))

13.1.2CO-GapIdentifications

COs	CO1	CO2	CO3	CO4	CO5
Target					
Achieved					
Gap					

13.1.3 Gaps Identified:

Describe what the reasons for gaps are

i.

ii.

Overall CO Attainment Table: Example

Cos	CO1	CO2	CO3	CO4	CO5	Co6
Attainment level asper rules set	3	1	3	3	3	3
Average CO attainment through internal assessment	**2.67**					

13.1.4: Activities Decided to bridge the gap

Please do analyze whether you could get improvement through activities decided and conducted for improvements. Reason should be noted why /how it is improved or not.

13.2 Attainment of POs & PSO:

13.2.1 Target-Expected Attainment of PO by attainment of CO- Put all mappings of 3, 2 and1.BasedonCO-POmapping, determine targets for each PO as average of targets of all relevant COs.

CO	PO												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
3CSA101.1															
3CSA101.2															
3CSA101.3															
3CSA101.4															
3CSA101.5															
Obtain Average-PO/PSO Targets	Targets	Targe Ts	Targ ets	Targ ets	Targ ets	Targe ts	Targ ets	Targ ets	Targe ts	Targe ts	Targe ts	Targe ts	Targe ts	Targets	Targe ts

13.2.2 Attainment of POs & PSO through CO as Continuous Evaluation:

Put all attainment values of CO as per mappings with 3, 2, 1 as evaluated in 13.1.1 (Frequency- Monthly)

CO	PO												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
3CSA101.1															
3CSA101.2															
3CSA101.3															
3CSA101.4															
3CSA101.5															
Obtain Avg. PO/PSO Attainment	Achiev Ed	Achie ved	Achi eved	Achi eved	Achi eved	Achie ved	Achi eved	Achi eved	Achie ved	Achie ved	Achie ved	Achie ved	Achie ved	Achiev ed	Achie ved

13.2.3 PO Gap Identification:

	PO												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Targets															
Achieved															
Gap															

13.2.4 Gaps Identified:

Describe what the reasons for gap (for PO) are.

i.
ii.

13.2.5 Activities Decided to bridge the gap

Please do analyze whether you could get improvement through activities decided and conducted for improvements. Reason should be noted why /how it is improved or not.

Repeat whole process after one month, Two months, and three months. Plot bar chart for improvement in CO,PO &PSO. (Every month)

13.3 Attainment of CO through RTU Exam:

This may be possible for previous semester results so overall attainment. If faculty is changed, data will be evaluated by concerned faculty who taught and handed over to current faculty. If faculty not available, then current faculty will do the same.

Attainment of CO: 3CSA101:Subject:			
Student	**RTU Marks (80)**	**%0f Marks**	**Level of Attainment**
Name1			**3**
Name2			**2**
Name3			**1**
Name4			**2**
Name5			**1**
Name6			**2**
----			**--**
------			**--**
No.ofStudentsattainedlevel3=		**% of StudentsAttainedLevel3=**	
No.ofStudentsattainedlevel2=		**% of StudentsAttainedLevel2=**	
No.ofStudentsattainedlevel1=		**% of StudentsAttainedLevel1=**	
CO Attainment= ?(Check Level3%attainment-IfNoFindGap)			
Mark X for absent- Take avg. of all present			

13.3.1 Attainment of CO through RTU Component:

CO: Course Code: Course Name					
Target					
Achieved					
Gap					

13.3.1 Gaps for CO attainment through RTU Component:

Analyze RTU Question paper with respect toCOs formulated, contents delivered and students examined, findout reasons for gaps

i.

ii.

13.3.2 Action to be taken:

Prepare recommendations for improvement in planning & teaching for gaps identified.

13.4 Attainment of PO through CO (RTU) Component

Put RTU Results as per target achieved only and mapping level, in following table

Attainment of PO through CO(RTU) Component															
CO	**PO**												**PSO**		
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**	**PSO3**
3CSA101															

Attainment of PO through CO(RTU) Component															
3CSA101	**PO**												**PSO**		
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**	**PSO3**
Targets															
Achieved															
Gap															

13.4.1 Gaps in PO through CO from RTU component:

Analyze RTU Question paper with respect to COs formulated &mapped, contents delivered and students examined, findout reasons for gaps

Describe what are the reasons for gap

i.

ii.

13.4.2 Action to be taken:

Prepare recommendations for improvement in planning & teaching for gaps identified.

13.5 Overall Attainment of PO&PSO: Through Continuous Assessment &RTU

While combining attainment through Continuous evaluation and RTU component, following weightage be considered.

1. **Internal Assessment– Totalweightage-40%**
2. **RTU Component------- Weightage– 60 %**

Put all attainments in the following table and compute.

13.5.1: Table1

	RTU Component			**Internal Assessment**				
Student	**RTU Marks (80)**	**%of Marks**	**60% Weightage X6/100 (A)**	**Overall CO (-----)**	**%of Marks**	**Weightage X4/100 (B)**	**Total (A+B)**	**Level of Attainment**
Name1								**3**
Name2								**2**
Name3								**1**
Name4								**2**
Name5								**1**
Name6								**2**
----								**--**
------								**--**
No.ofStudentsattainedlevel3=					**% of StudentsAttainedLevel3=**			
No.ofStudentsattainedlevel2=					**% of StudentsAttainedLevel2=**			
No.ofStudentsattainedlevel1=					**% of StudentsAttainedLevel1=**			
PO Attainment= ?(Check Level3%attainment-IfNoFindGap)								
Mark X for absent-Take avg. of all present								

OR

13.5.2: Table2

	RTU			**Internal CO1/Activity1 (Weightage%)**			**Internal CO2/Activity2 (Weightage%)**			**Internal CO3/Activity3 (Weightage%)**				
Student	**RTU Marks (80)**	**%0f Marks**	**60% Weightage X-----/100 A**	**Overall CO (-----)**	**%0f Marks**	**Weightage X--/100 B**	**Overall CO (-----)**	**%0f Marks**	**Weightage X--/100 C**	**Overall CO (-----)**	**%0f Marks**	**Weightage X--/100 D**	**Total (A+B+C+D)**	**Level of Attainment**
Name1														**3**
Name2														**2**
Name3														**1**
Name4														**2**
Name5														**1**
Name6														**2**
----														**--**
------														**--**

No. of Students attained level 3= Attained Level 3=	**%of Students**
No. of Students attained level 2= Attained Level2=	**% of Students**
No. of Students attained level1= StudentsAttainedLevel1=	**% of**
PO Attainment= ?(Check Level3%attainment-IfNoFindGap)	
Mark X for absent-Take avg. of all present	

13.5.3: Overall PO& PSO Attainment through Course:
Put Overall PO & PSO attainment as per mapping 3,2,1 above:

Attainment of Overall POforSession2018-2019															
CO	**PO**												**PSO**		
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**	**PSO3**
3CSA101															
PO Attainment															

13.5.4: Overall Gaps for Attainment of PO and PSO from the Course
Put Overall PO & PSO targets & attainment as per mapping 3,2,1 above:

Attainment &Gap of Overall PO Session----------															
3CSA101	**PO**												**PSO**		
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**	**PSO3**
Targets															
Achieved															
Gap															

13.5.5. Overall Gaps for Course taught:
Go through all gaps identified above and summarize. Describe what the reasons are.
i.
ii.

13.5.6 Action to be taken:
Prepare recommendations for improvement in planning & teaching (Internal & RTU) for gaps identified. Decide Activities to be conducted to bridge the gaps in COs.

Repeat whole process after One year before, Two year before, and three year before. Plot bar charts for Continuous improvements check in CO, PO&PSO. (Every Year).

14 File Formats

14.1 List of File Formats

i. Front Page of Course File
ii. ABC Analysis Format
iii. Blown-up Format
iv. Deployment Format
v. Zero Lecture Format
vi. Tutorial Format
vii. Assignment Format
viii. Lecture Note Format
ix. Mid Term Question Paper Format
x. Mid Term Practical Exam Format
xi. Evaluation Sheets Format
xii. Activity Report Format

14.2 Front Page of Course File

POORNIMA
COLLEGE OF ENGINEERING

TEACHING MANUAL

COURSE: _____

SEMESTER: _____

SUBJECT: _____

SUB. CODE: _____

CONTENT: PGC Syllabus, Blown-up, Deployment, Zero Lectures, Detailed lecture notes with cover page, Tutorial/Home-Assignment Sheets

_____

SESSION: 20___-___

NAME OF FACULTY: _____

DEPARTMENT: _____

CAMPUS: _____

14.3 ABC Analysis Format

POORNIMA
COLLEGE OF ENGINEERING

Department of Civil Engineering Date: ----------

Course: B.Tech. **Year/ Section -3 year/A**

Name of Faculty: ABC **Name of Subject : Design of Concrete Structures** **Code: 5CE4-03**

ABC Analysis

S.no.	Category A (Hard Topics)	Category B (Topics with average hardness)	Category C (Easy to understand topics)	Preparedness for "A" topics
1	Analysis and Design of singly reinforced rectangular beam section for flexure using Working Stress Method and Limit State Method	Types and function of reinforcement. Introduction to various related IS codes	Objective and fundamental concepts of design of RC members, Design Philosophies: Working stress, ultimate strength and limit states of design	PPT
2	Design flanged beams and doubly reinforced rectangular beams for flexure using Limit State Method	control of deflection as per codal provisions of empirical coefficient, Analysis and design of singly reinforced	Limit state of serviceability for deflection	PPT
3		Anchorage length and development length, curtailment of reinforcement as per codal provisions.	Analysis and design of prismatic sections for shear using LSM, concept of bond stress	

14.4 Blown-up Format

POORNIMA
COLLEGE OF ENGINEERING
BLOWN UP SYLLABUS

Department of Civil Engineering **Date: --**

Course: B. Tech. **Year/ Section – 3rd A**

Name of Faculty: ABC **Name of Subject :Design of Concrete Structures** **Code: 5CE4-03**

SNo.	TOPIC AS PER SYLLABUS	BLOWN UP TOPICS (up to 10 Times Syllabus)
1.	Zero Lecture	Introduction to the subject and its significance.
2.	Fundamental concept of design RC members (W.S.M.& L.S.M.)	Fundamental concepts of design of RC members, assumptions. Types and function of reinforcement. Introduction to various related IS codes, Characteristic load and characteristic strength. Working Stress Method: Working stress design philosophy. Analysis and Design of singly reinforced rectangular beam section for flexure. Introduction Objectives of design of RCC members, Creep and shrinkage phenomena, Reinforcement and requirement of IS codes, Design philosophies Working stress method, Limit state method, Ultimate strength method, Analysis and design of beam ,Design of Singly reinforced Rectangular beam section for flexure by WSM.Design of Singly reinforced Rectangular beam section for flexure by LSM
3.	Analysis and design of singly reinforced beam, doubly beam and flanged beam by L.S.M.	IS code provision and assumptions for singly reinforced, Analysis and design of singly reinforced .Introduction ,Analysis and design of doubly beam by LSM Design philosophies of Doubly reinforced rectangular beam section for flexure using LSM ,Design of Doubly reinforced rectangular beam section for flexure using LSM Design of philosophies of flanged beam section for flexure using LSM, Design of flanged beam section for flexure using LSM
4.	Limit state of collapse in deflection, shear & bond	Basic concept and codal provision for Limit state of serviceability for deflection, Short term deflection and long term deflection with design steps, Basic concept and codal

14.5 Deployment Format

POORNIMA
COLLEGE OF ENGINEERING
SYLLABUS DEPLOYMENT

Department of Civil Engineering **Date: --**

Course: B. Tech. **Year/ Section – 3rd A**

Name of Faculty: ABC **Name of Subject :Design of Concrete Structures** **Code: 5CE4-03**

S. No	Lecture No.	Topics, Problems, Applications	CO/LO	Target Date of Coverage	Actual Date of Coverage	Ref. Book/Journal with Page No.
1	1	Zero Lecture Fundamental concepts of design of RC members, assumptions. Types and function of reinforcement. Introduction to various related IS codes, Characteristic load and characteristic strength. Working Stress Method: Working stress design philosophy. Analysis and Design of singly reinforced rectangular beam section for flexure.	CO1	7/7/2020	7/7/2020	T1 No. Pg.
2	2	Introduction Objectives of design of RCC members, Creep and shrinkage phenomena	CO1	10/7/2020	10/7/2020	T1 No. Pg.
3	3	Fundamental concepts of design of RCC members	CO1	11/7/2020	11/7/2020	T1 No. Pg.
4	4	Reinforcement and requirement of IS codes, Design philosophies	CO2	13/7/2020	13/7/2020	T1 No. Pg.

14.6 Zero Lecture Format

POORNIMA
COLLEGE OF ENGINEERING

ZERO LECTURE

Session: 20 - (Sem.)

Campus: ..... Course: ..... Class/Section: .....

Name of Faculty: .....

Zero Lecture

1). Name of Subject: ..... Code: .....

2). Self-Introduction:

a). Name:
b). Qualification:
c). Designation:
d). Research Area:
e). E-mail Id: .....@poornima.org
f). Other details: Information about areas of proficiency/ expertise such as subject taught, laboratory taken, Member of Professional body, Academic Proficiency, Book Authored, Paper published in National and International Conference/Journals etc.

3). Introduction of Students:

a*). Records of students in 12th*

Sr. No.	Average result of 12th	Name of student scored highest marks	Marks 60% above (No. of students)	Marks between 40%-60% (No. of students)	English Medium Students (No.)	Hindi Medium Students (No.)	No. of Hostellers	No. of Day Scholar

b*). Name of 05 best students based on previous results: ....., ..., ..., ..., ...*

4). Instructional Language: - .....%English; .....% Hindi (English not less than 60%)

5). Introduction to subject: - (Pl. separate out subject specific matter and general matter valid for all subjects and group/place them appropriately)

a). Relevance to Branch:
b). Relevance to Society:
c). Relevance to Self:
d). Relation with laboratory:
e). Connection with previous year and next year:

6). Syllabus of Poornima Group of Colleges, Jaipur

a). Unit Name:
b). ABC analysis (RGB method) of unit & topics

7). Books/ Website/Journals & Handbooks/ Association & Institution:

a). Recommended Text & Reference Books and Websites:

S. No.	Title of Book	Authors	Publisher	Cost (Rs.)	No. of books in Library
Text Books					
T1					
T2					
T3					
Reference Books					
R1					
R2					
R3					
Websites related to subject					
1					
2					

b). Journals & Handbooks: - To give information about different Journals & Handbooks available in library related to the subject and branch.

c). Associations and Institutions: - To give information about different Associations and Institutions related to the subject and branch.

8). Syllabus Deployment: -

a). Total weeks available for academics (excluding holidays) as per Poornima Foundation calendar-

Semester	
No. of Working days available(Approx.)	
No. of Weeks (Approx.)	

- Total weeks available for special activities (as mentioned below)- 02 weeks (Approx.)

Note: Individual faculty must calculate the exact no. of lectures available according to time table etc. after consultation with HOD.

b). Special Activities (To be approved by HOD & Dean & must be mentioned in deployment):

- Open Book Test- Once in a semester
- Quiz - Once in a semester
- Special Lectures (SPL)- Minimum 10% of total no. of lectures including following
  - i. Smart Class by the faculty, who is teaching the subject
  - ii. SPL by expert faculty at PGC level
  - iii. SPL by expert from industry/academia (other institution)
- Revision classes (Solving Important Question Bank):- 1 class before Mid Term and 2 classes before End Term Exam

c). Lecture schedule per week

i). University scheme (L+T+P) = ...+....+.....

Sr. No.	Name of Unit	No. of lectures	Broad Area	Degree of difficulty (High/Medium/Low)	Text/ Reference books
1.					
2.					
3.					
4.					
5.					

d). Introduction & Conclusion: Each subject, unit and topic shall start with introduction & close with conclusion. In case of the subject, it is Zero lecture.

e). Time Distribution in lecture class: - Time allotted: 60 min.

i. First 5 min. should be utilized for paying attention towards students who were absent for last lecture or continuously absent for many days + taking attendance by calling the names of the students and also sharing any new/relevant information.

ii. Actual lecture delivery should be of 50 min.
iii. Last 5 min. should be utilized by recapping/ conclusion of the topic. Providing brief introduction of the coming up lecture and suggesting portion to read.
iv. After completion of any Unit/Chapter a short quiz should be organized.
v. During lecture student should be encouraged to ask questions.

Note: Pl. ensure that each student is having Lecture Note Book. Also, write on the black board day and date, name of the teacher, name of subject with code, unit and lecture no. and topics to be covered at the beginning of each lecture and ensure that students write in lecture note book. Ask students to leave 4/5 pages blank for copying the note from fellow students in case of their absenteeism.

9). Tutorial: - An essential component of Teaching- Learning process in Professional Education.

Objective: - To enhance the recall mechanism.
To promote logical reasoning and thinking of the students.
To interact personally to the students for improve numerical solving ability.

a). *Tutorial processing:* - Tutorial sheet shall be provided to each students

Ist Phase: - It is consisting of questions to be solved in the class assignment session in test mode on perforated sheet given in tutorial notebook and to be collected & kept by respective faculty for review & analysis (20 minutes).

IInd Phase: - Indicating/Initializing the weak issues/ drawback and Evaluating and providing the grade. Making a group with good student for assisting the weak students to explain/solve questions by every student on plain papers given in tutorial note book (20 minutes).

IIIrd Phase: - Solving/ explaining difficulties of lecture class and providing the new home assignment (20 minutes). To be done in tutorial note book.

b). *Home assignment shall comprise of two parts:*

Part (i) Minimum essential questions, which are to be solved and submitted by all with in specified due date.

Part (ii) Other important questions, which may also be solved and submitted for examining and guidance by teacher.

10). Examination Systems:

A. FOR ALL THEORY COURSES:-

a. Continuous Internal Evaluation (CIE)	**20%**
-Assignment / Project / Papers / Essays / Class Participation	10%
-Quiz / Class Test (Announced / Unannounced)	5%
- Attendance and Discipline	5%
b. Mid Semester Exams (MSE) – Two	**20%**
c. End Semester Exam (ESE) - One	**60%**
TOTAL	**100 %**

B. FOR ALL PRACTICAL (LABORATORY) COURSES:-

a. Continuous Internal Evaluation (CIE)	**40%**
-Performance (Lab Record, Viva,)	30%
-Attendance and Participation in laboratory work	10%
b. Mid Semester Exam (MSE)– Two	**20 %**
c. End Semester Exam (ESE) - One	**40%**
TOTAL	**100 %**

11). Any other important point:

Place & Date: Name of Faculty with Designation

14.7 Lecture Note Front page Format

POORNIMA
COLLEGE OF ENGINEERING

LECTURE NOTES

Campus: ……..…. Course: ……..…….... Class/Section: ……..…. Date: ……..……..

Name of Faculty: ……..…….. Name of Subject: ……..…… Code: ……..…..

Date (Prep.): ……..…….. Date (Del.): ……..……..Unit No.:……..…..…..Lect. No: ……..……..

OBJECTIVE: To be written before taking the lecture (Pl. write in bullet points the main topics/concepts etc., which will be taught in this lecture)

IMPORTANT & RELEVANT QUESTIONS:

FEED BACK QUESTIONS (AFTER 20 MINUTES):

OUTCOME OF THE DELIVERED LECTURE: To be written after taking the lecture (Pl. write in bullet points about students' feedback on this lecture, level of understanding of this lecture by students etc.)

REFERENCES: Text/Ref. Book with Page No. and relevant Internet Websites:

14.7.1 Detailed Lecture Note Format-1

POORNIMA
COLLEGE OF ENGINEERING

DETAILED LECTURE NOTES

Campus: ……	**Course: ……**	**Class/Section: ……**	**Date: ……**
Name of Faculty: ……		**Name of Subject: ……**	**Code: ……**

14.7.2 Detailed Lecture Note Format-2

POORNIMA
COLLEGE OF ENGINEERING
DETAILED LECTURE NOTES

PAGE NO. .....

14.8 Assignment Format

POORNIMA
COLLEGE OF ENGINEERING

Campus: PCE Course: B.TECH	**Year /Semester: 3rd / 5th**	**Date: 05/08/2020**
Name of Faculty: ABC	**Name of Lab: CONCRETE STRUCTURES DESIGN**	**Code: 5CE4-03**

ASSIGNMENT-I

CO	PO	QUESTIONS	MARKS
CO1	PO1	Determine the values of design constant (k_u, j and R) and percentage of balanced steel for a beam of dimension b, and d. Use M20 concrete and Fe250 steel.	10
CO2	PO1	Determine the moment of resistance of a singly reinforced beam 160mm wide and 300 mm effective deep. The beam is reinforced with 4 bars of 12mm ø. Use M20 concrete and plane mild steel bars. Use m=18. Also find out the safe load inclusive of its own weight, which the beam can carry over effective span of 5 m.	10
CO3	PO2	A rectangular beam of 350 mm width and 400 mm effective depth is reinforced with 4-16mm ø tension bars. Determine the stress induced in the top compression fibre of the concrete and tension steel when it is subjected to a moment of40 kN-m. Consider M25 concrete.	10
CO5	PO3	A rectangular beam of width 350mm is subjected to U.D.L. of15 kN/m over an effective span of 8 m. Determine the depth required for the beam and also calculate the area of tensile reinforcement required. Use M20 concrete and Fe 250 steel.	10

14.9 Tutorial Format

POORNIMA
COLLEGE OF ENGINEERING

TUTORIAL SHEET

TUTORIAL SHEET SHEET No.....

Campus: ..... Course: ..... Class/Section: ..... Date: .....

Name of Faculty: ..... Name of Subject: ..... Code: .....

Date of Tut. Sheet Preparation:..... Scheduled Date of Tut.:.....Actual Date of Tut. :.....

Name of Student:.....Scheduled & Actual Date of H.A. Submission:.....&.....

	Questions	CO	PO
FIRST 20 MT. CLASS QUESTIONS			
2 HRS. SOLVABLE HOME ASSIGNMENT (H.A.) QUESTIONS			
OTHER IMPORTANT QUESTIONS			

14.10 Mid Term/ End Term Practical Question Paper Format

POORNIMA COLLEGE OF ENGINEERING, JAIPUR

III B.TECH. (VI Sem.) **SET- A**

FIRST MID TERM PRACTICAL EXAMINATION 2021-22
Code: 6ME4-23 Category: PCC Subject Name: MACHINE DESIGN PRACTICE-II
(BRANCH – MECHANICAL ENGINEERING)

Max. Time: 60 Minutes **Max. Marks: 22 + 8 (Viva) = 30**

NOTE: - **All questions are compulsory. Use of Design Data Book is allowed.**

Q. No.	Question	Marks	LO	PO
Q.1				
Q.2				
Q.3				

POORNIMA COLLEGE OF ENGINEERING, JAIPUR

III B.TECH. (VI Sem.) **SET- B**

FIRST MID TERM PRACTICAL EXAMINATION 2021-22
Code: 6ME4-23 Category: PCC Subject Name: MACHINE DESIGN PRACTICE-II
(BRANCH – MECHANICAL ENGINEERING)

Max. Time: 60 Minutes **Max. Marks: 22 + 8 (Viva) = 30**

NOTE: - **All questions are compulsory. Use of Design Data Book is allowed.**

Q. No.	Question	Marks	LO	PO
Q.1				
Q.2				
Q.3				

14.11 Mid Term Theory Question Paper Format

POORNIMA COLLEGE OF ENGINEERING, JAIPUR

II B.TECH. (III Sem.) **Roll No. _____**

SECOND MID TERM EXAMINATION 2021-22

Code: 3CE2-01 Category: PCC Subject Name–ADVANCE ENGINEERING MATHEMATICS -I

(BRANCH – CIVIL ENGINEERING)

Course Credit: ___

Max. Time: 2 hrs. **Max. Marks: 60**

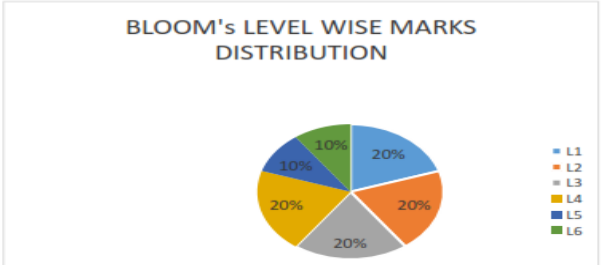
NOTE:- Read the guidelines given with each part carefully.

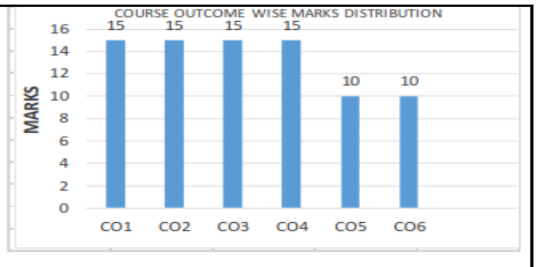
Course Outcomes (CO):

At the end of the course the student should be able to:

CO1:
CO2:
CO3:
CO4:
CO5:
CO6:

	PART - A: (All questions are compulsory) Max. Marks (10)				
		Marks	**CO**	**BL**	**PO**
Q.1		**2**			
Q.2		**2**			
Q.3		**2**			
Q.4		**2**			
Q.5		**2**			
	PART - B: (Attempt 4 questions out of 6) Max. Marks (20)				
Q.6		**5**			
Q.7		**5**			
Q.8		**5**			
Q.9		**5**			
Q.10		**5**			
Q.11		**5**			
	PART - C: (Attempt 3 questions out of 4) Max. Marks (30)				
Q.12		**10**			
Q.13		**10**			
Q.14		**10**			
Q. 15		**10**			





BL – Bloom's Taxonomy Levels (1- Remembering, 2- Understanding, 3 – Applying, 4 – Analyzing, 5 – Evaluating, 6 - Creating)

CO – Course Outcomes; PO – Program Outcomes

13. List of Important Links

List of Important Links		
Sr. No.	**Link**	**Particulars**
1	https://www.rtu.ac.in/index/	Rajasthan Technical University
2	http://www.pce.poornima.org	Institute Website
3	http://www.pce.poornima.org/Downloads.html	Format of Students & Employees
4	https://www.turnitin.com/login_page.asp?lang=en_us	Plagiarism Checker
5	http://pcelibrary.poornima.org/	PCE Digital Library
6	https://ndl.iitkgp.ac.in/	National Digital Library of India (NDLI)
7	https://swayam.gov.in/	SWAYAM MOOCs platform
8	https://www.vlab.co.in/	Virtual Labs
9	https://spoken-tutorial.org/	Spoken Tutorial
10	https://fossee.in/	FOSSEE (Free/Libre and Open Source Software for Education)
11	https://www.sih.gov.in/	Smart India Hackathon
12	https://www.swayamprabha.gov.in/	32 high quality educational channels through DTH on 24X7 basis.
13	https://ieeexplore.ieee.org/Xplore/home.jsp.You	IEEE All Society Periodicals Package
14	https://booksc.org/	Link for Free for book and articles
15	https://jgateplus.com/home/	J-gate Plus (JOURNALS -GATE) subscriptions
16	http://www.delnet.nic.in/	Developing Library Network
17	https://dst.rajasthan.gov.in/content/dst-gov/en/home.html	Department of Science & Technology, Government of Rajasthan
18	https://ipindia.gov.in/index.htm	Official website of Intellectual Property India
19	http://pce.poornima.org/Downloads.html	Academic Formats Word File
Note:- Required Credentials can be taken from Respective Department Heads		

POORNIMA
COLLEGE OF ENGINEERING

Affiliated to RTU, Kota • Approved by AICTE & UGC under 2(f) • NAAC A+ Accredited

DEPARTMENT OF CIVIL ENGINEERING

CURRICULUM DELIVERY PLAN

OUTLINE-EVEN SEM-2023-24

ISI-6, RIICO Institutional Area, Sitapura, Jaipur-302022 (Rajasthan)

• Phone: +91-141-2770790 • E-mail: infor@poornima.org

• Website: www.poornima.org

Table of Contents

1 The Institution ensures effective curriculum planning and delivery through a well-planned and documented process including Academic calendar and conduct of Continuous Internal Assessment (CIA)

PCE is affiliated to RTU, Kota and follows the planned and prescribed curriculum of University. The Internal Quality Assurance Cell (IQAC) of PCE takes the responsibility of monitoring the effective delivery of the curriculum through a well-planned and documented process. To ensure effective curriculum delivery, a Curriculum Delivery Plan (CDP) is prepared by all PAC's of the respective departments. A CDP includes detailed planning for preparation, verification, execution and adherence to all documents related to academic delivery of all courses. As per the directions received from IQAC, the Examination cell plans for the Continuous Internal Assessment. Examination cell then circulate CIA planning to the PAC. Examination cell sends all the CIE Data to Director's Office for the final approval before its submission to RTU. Detail outlines are as follows.

1. Director Office, PCE receives the curriculum from RTU, Kota through university website.
2. IQAC prepares institute academic calendar aligned with RTU academic calendar considering input received in last GC meeting and other stakeholders. IQAC forwards the Institute Academic Calendar to PAC (Program Assessment Committee) for identifying curriculum gaps and examination cell for CIE. PACs then prepares CDPs after consolidating the course specific planning received from the respective faculty members.
3. A CDP includes activities for gap abridgement which are proposed to be carried out by the faculty members.
4. IQAC also instructs PACs to prepare the department activity calendar. PACs receives approval of department activity calendars and CDPs from DABs before its final approval from IQAC.
5. IQAC also reviews the CDPs approved by DABs and gives suggestions/ approvals periodically. All the activities (SPL, Industrial visit, workshop etc.) planned are taken into consideration for the Department activity calendar after the approval from DABs.
6. Subject wise Course files are prepared by respective faculty, comprising of Syllabus, ABC analysis, Blown-Up, Deployment, Lecture notes, Zero Lecture, Tutorial and Assignment sheets, COs Statements, and Mapping with POs and PSOs.
7. Faculty frequently use ICT tools for more effective content delivery using PPTs, video lectures etc.
8. Student attendance is monitored by tutors and chief proctor office with help of SHARP ERP software. Attendance defaulters are regularly counseled through their tutors for improving their attendance.
9. Institute also conducts Annual Internal Academic Audit for the effectiveness of teaching-learning methodologies and the necessary actions are taken as suggested by the audit team.
10. Conferences, seminars, webinars, workshops, expert lectures, STTPs, and FDPs are organized throughout the year on the recent advances in the field of engineering.
11. Continuous Internal Assessment process includes Midterm exam, Tutorials, Assignments, Quizzes, presentation, Class Test, viva-voce etc.
12. As per the RTU examination scheme, mid semester examinations are conducted centrally by examination cell as per the planning & academic calendar and other assessments are conducted at departmental level.
13. All the evaluations are carried out by the faculty members which include COs-POs attainment, Gap identification & action taken for the fulfillment of gap.
14. Student feedback and attainment of COs-POs are reviewed by the PAC for any revision in planning & Delivery.
15. End term semester examinations are conducted by the RTU, Kota.

2 Vision & Mission Statements

2.1 Vision &Mission Statements of the Institute

Vision of Institution

To create knowledge based society with scientific temper, team spirit and dignity of labor to face the global competitive challenges

Mission of Institution

To evolve and develop skill based systems for effective delivery of knowledge so as to equip young professionals with dedication & commitment to excellence in all spheres of life

2.2 Vision &Mission Statements of the Programme B. Tech. (Civil Engineering)

2.2.1 Vision of Department

To become a globally recognized centre of civil engineering through excellence in technical education, interdisciplinary research and innovation.

2.2.2 Mission of Department

- To develop the **professional skills with outstanding knowledge.**
- To enhance **research & development** in emerging areas of civil engineering.
- Enhancing **linkages with alumni and industry**.
- To produce **ethically able, humane and creative global leaders**.

2.2.3 PEO of the Department

Program Educational Objectives (PEOs

- **PEO 1** Graduates will able to apply **fundamental principles** of science, mathematics and engineering using **modern tools** to solve the **societal and environmental** problems.
- **PEO 2**: Graduates will able to use their practical, field survey, computer and analytic skills to build **industry ready** engineers to solve **multi-disciplinary sustainable projects.**
- **PEO 3**: Graduate applies innovative ideas to improve the **technical competency** in engineering **decisions, lifelong learning, to equip leadership qualities in diverse teams, promote and practice appropriate ethical moral** to become professional engineers.

2.2.4 Program Specific Outcome (PSOs)

1. The graduates will have the ability to **plan, design** and **quality execution of construction projects.**
2. The graduates of the civil engineering program will have the ability to **solve** problems in the **structural, construction management, hydraulics, geotechnical, transportation** and **environmental** disciplines of civil engineering.
3. Graduates will be able to cognizance of **social awareness, interdisciplinary aspects** and **environmental** necessity along with ethical responsibility to have a successful **career** and to become an **entrepreneur**.

2.3 Program Outcomes (PO)

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.

3 Department Academic & Administrative Bodies - Structure & Functions

3.1 Department Advisory Board (DAB)

3.1.1 Primary Objective

Department Advisory Board (DAB) of Department of Civil Engineering, PCE, Jaipur is formed to provide necessary suggestions for developing a structured approach for continuous improvement in curriculum delivery, planning and incorporation of Curricular, Extra and Co-Curricular activities needed to abridge the pre-identified curriculum gaps.

3.1.2 Roles & Responsibilities

1. Suggest improvement in academic plans and recommend standard practices/system for attainment of Program Educational Objectives, Program Outcomes, Program Specific Outcomes and Course Outcomes.
2. Provide guidelines for industry-institute interactions to bridge up curriculum/industry gap and suggest quality improvement initiatives to enhance employability.
3. Develop a structured Curriculum Delivery Plan, Department Academic Calendar and seek approval for them from Internal Quality Assurance Cell.
4. Incorporate suggestions received from Program Assessment Committee (PAC) by including proposed activities for bridging curricular gaps identified.
5. To identify and suggest thrust areas to conduct various activities (final year projects, training courses and additional experiments to meet PEOs, and propose necessary action plan for skill development of students, required for entrepreneurship development and quality improvement.

3.1.3 Department-Wise Composition

S. No.	Category	Nominated by	Name of Members	Address
1	Chairman, DAB-CE	Chairman, IQAC	Dr. Mahesh M. Bundele (Principal & Director, PCE)	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur
2	Member Secretary	Chairman, DAB-CE	Dr. Pran N Dadhich Professor and Head, Department of Civil Engineering	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur
3	Faculty representative-1	Member	Dr. Santanu Malik Associate Professor , CE	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur
4	Faculty representative-2	Member	Dr. Balwan Assistant Professor , CE	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur
5	Final year student (Nominated by HoD)	Member	Chirakshi Agarwal	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur
6	Pre-Final year student (Nominated by HoD)	Member	Shreya Sharma	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur
7	Second year student (Nominated by HoD)	Member	Jahanvi Ninma	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur
8	Industry Person	Member	Mr. Rohit	Founder and Director, TeXel Consulting Engineers (Pvt.) Ltd.
9	Industry Person	Member	Mr. Sumit Sharma	CEO, Horizon Architect
10	Parents	Member	Mr. Ashish Kumar Sharma	Ayush Nursing Officer, Father of Raghav Sharma (III Year)
11	Parents	Member	Mr. Madan Lal Bairwa	Engineer, JDA, Father of Aryan Bairwa (II Year)
12	Alumni	Member	Ms. Madhu Yadav	JE, PWD, Jaipur, Rajasthan
13	Alumni	Member	Mr. Shashank Shukla	Senior Engineer, Pinnacle Infotech

3.1.4 Meeting Frequency & Objectives

Meeting No.	Meeting Code	Meeting Month-Week	Meeting Objective
1.	DAB-1	July First Week	● Consideration of gaps and proposed activities by PAC last meeting to be implemented in DAC and CDP. ● Prepares final draft of CDP and DAC to be proposed in upcoming IQAC meeting
2.	DAB-2	September Second Week	● Approval / Suggestions of proposals from last PAC Meeting. ● Revision of DAB Drafts for being proposed in upcoming GC
3	DAB-3	December First Week	● Draft preparation for DAC and CDP for upcoming semester after considering inputs from PAC. ● Review Semester closure draft from PAC.
4.	DAB-4	April Last Week / May First Week	● Draft of PCE Academic Calendar and CDP proposed ● Previous session closure with gaps and feedback. ● Completion of ATR-2 for current semester based on last GC sessions and compiling it with ATR-1

3.2 Program Assessment Committee

3.2.1 Primary Objective

The primary objective of Program Assessment Committee (PAC) is to identify, bridge and assess the gaps in Program's Curriculum received from University through attainment calculation.

3.2.2 Roles & Responsibilities

1. Identify gaps in curriculum laid down by University and propose activities for bridging identified gaps.

2. Implement academic plans and standard practices/system for attainment of Program Educational Objectives, Program Outcomes, Program Specific Outcomes and Course Outcomes.

3. Regular Monitoring of curriculum gap abridgement and course deployment practices through pre-defined methods.

4. Execute Industry-Institute Interactions to enhance the employability thereby meeting the industry standards and requirements.

5. Implement Curriculum Delivery Plan & Department Academic Calendar.

3.2.3 Department-Wise Composition

S. No.	Category	Nominated by	Name of Members	Address
1	Chairman, PAC-CE	Chairman, IQAC / Head of Institution	Dr. P. N. Dadhich Professor & HOD	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur

2	Member Secretary	Chairman, PAC-CE	Dr. Santanu Malik Associate Professor , CE	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur
3	Member	Chairman, PAC-CE	Mr. Balwan Assistant Professor	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur
4	Member	Chairman, PAC-CE	Dr. Pankaj Dhemla Professor, CE	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur
5	Member	Chairman, PAC-CE	Mr. Prateek Sharma Assistant Professor	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur
6	Member	Chairman, PAC-CE	Mr. Sonu Kumar Assistant Professor	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur
7	Member	Chairman, PAC-CE	Mr. Rituraj Singh Assistant Professor	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur
8	Member	Chairman, PAC-CE	Dr. Vishal Singhal Associate Professor	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur

3.2.4 Meeting Frequency & Objectives

Meeting No.	Meeting Code	Meeting Month-Week	Meeting Objective
1.	PAC-1	July Last Week	● Execution of Academic, Extra and Co-Curricular activities ● Regular assessment of Academic, Extra and Co-Curricular activities ● Regular calculation of attainments ● Revision of Academics gaps ● Prepared regular report of program for all assessment, attainment & gaps
2.	PAC-2	August Last Week	● Execution of Academic, Extra and Co-Curricular activities ● Regular assessment of Academic, Extra and Co-Curricular activities ● Regular calculation of attainments ● Revision of Academics gaps ● Prepared regular report of program for all assessment, attainment & gaps
3	PAC-3	September Last Week	● Execution of Academic, Extra and Co-Curricular activities ● Regular assessment of Academic, Extra and Co-Curricular activities ● Regular calculation of attainments ● Revision of academics gaps as previous attainment ● Assessment of activities required for being proposed in upcoming GC ● Submit report to Governing Council about previous semester & planning of next semester.
4.	PAC-4	October Last Week	● Inclusion of suggestions for revising gaps ● Execution of Academic, Extra and Co-Curricular activities according to suggestions in GC ● Regular assessment of Academic, Extra and Co-Curricular activities

			● Regular calculation of attainments ● Revision of academics gaps as previous attainment
5.	PAC-5	November Third Week	● Revision of academics gaps as previous attainment ● Regular assessment of Academic, Extra and Co-Curricular activities ● Identification and proposal of gaps and activities to be considered by DAB to prepare Department Academic Calendar and CDP for upcoming semester. ● Semester closure report draft to be prepared ● Elective proposals/CBCS
6.	PAC-6	December Third Week	● Incorporation of suggestions from IQAC and DAB meetings in execution of Semester activities ● Execution and assessment of Academic, Extra and Co-Curricular activities ● Revision of academics gaps as previous attainment ● Calculation of attainments
7.	PAC-7	January Last Week	● Execution of Academic, Extra and Co-Curricular activities ● Regular assessment of Academic, Extra and Co-Curricular activities ● Regular calculation of attainments ● Revision of Academics gaps ● Prepared regular report of program for all assessment, attainment & gaps
8.	PAC-8	February Last Week	● Execution of Academic, Extra and Co-Curricular activities ● Regular assessment of Academic, Extra and Co-Curricular activities ● Regular calculation of attainments ● Revision of Academics gaps ● Prepared regular report of program for all assessment, attainment & gaps
9.	PAC-9	March Last Week	● Execution of Academic, Extra and Co-Curricular activities ● Regular assessment of Academic, Extra and Co-Curricular activities ● Regular calculation of attainments ● Revision of Academics gaps ● Prepared regular report of program for all assessment, attainment & gaps ● Draft preparation of Semester closure
10.	PAC-10	April Second Week	● Execution of Academic, Extra and Co-Curricular activities ● Regular assessment of Academic, Extra and Co-Curricular activities ● Regular calculation of attainments ● Revision of Academics gaps ● Prepared regular report of program for all assessment, attainment & gaps
11.	PAC-11	May Last Week	● Execution of Academic, Extra and Co-Curricular activities ● Regular assessment of Academic, Extra and Co-Curricular activities ● Regular calculation of attainments ● Revision of Academics gaps ● Prepared regular report of program for all assessment, attainment & gaps ● Report submission of Semester closure ● Identification and proposal of gaps and activities to be considered by DAB to prepare Department Academic Calendar and CDP for upcoming semester.
12.	PAC-12	June Last Week	● Feedback of last IQAC and suggestions for new semester to be implemented in CDP and DAC ● Elective proposals/CBCS

List of Faculty Members

S. No	College Emp. ID	Name of the Faculty Member	Mobile Phone	Email Address	Designation
1	1267	DR. PANKAJ DHEMLA	9460907039	pankajdhemla@poornima.org	PROFESSOR
2	5382	Mr. SONU KUMAR	8560058069	sonu.kumar@poornima.org	ASST PROFESSOR
3	5405	MR. BALWAN	8769040200	balwan.sheshma@poornima.org	ASST PROFESSOR
4	6136	Dr. VISHAL SINGHAL	9414779232	vishal.singhal@poornima.org	ASSOCIATE PROFESSOR
5	6358	DR. MANOJ GATTANI	7058368351	manoj.gattani@poornima.org	PROFESSOR
6	6904	Mr. PRATEEK SHARMA	7014337097	sharmaprateek63@gmail.com	ASST PROFESSOR
7	4642	MR. RITURAJ SINGH RATHORE	9406871872	rituraj.rathore@poornima.org	ASST PROFESSOR
8	3405	DR. PRAN NATH DADHICH	9460907039	pran.dadhich@poornima.org	PROFESSOR & Head
9	7524	Mr. NARENDRA BHADANA	7877711850	narendra.bhadana2@poornima.org	ASST PROFESSOR
10	8048	Dr. SANTANU MALIK	7005538772	santanu.malik@poornima.org	ASSOCIATE PROFESSOR
11	6962	Dr. MAYANK GUPTA	7007329509	mayank40gupta@gmail.com	ASSOCIATE PROFESSOR
12	5767	DR. SIDDHARTH	8709065124	siddharth.choudhary@poornima.org	ASSOCIATE PROFESSOR
13	7412	MR. AYUSH MEENA	9571554444	ayush.meena@poornima.org	ASST PROFESSOR

4 Institute Academic Calendar

JANUARY 2024

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

FEBRUARY 2024

Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29		

MARCH 2024

Sun	Mon	Tue	Wed	Thu	Fri	Sat
31					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

APRIL 2024

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

MAY 2024

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

JUNE 2023

Sun	Mon	Tue	Wed	Thu	Fri	Sat
30						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29

JULY 2024

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

POORNIMA
COLLEGE OF ENGINEERING

Affiliated to RTU, Kota • Approved by AICTE & UGC under 2(f) • NAAC A+ Accredited

ACADEMIC CALENDAR 2023-24*#

EVEN SEMESTER

January 2024

Monday, 8	First Day, B. Tech. VIII Sem.
Thursday, 26	Republic Day Celebration
	RTU THEORY EXAMINATION FOR III & V SEMESTER [ODD SEMESTER 2023-24]

February 2024

Monday, 19	First Day, B. Tech. IV & VI Sem.
	RTU THEORY EXAMINATION FOR I SEMESTER [ODD SEMESTER 2023-24]
Monday, 26	First Day, B. Tech. II Sem.

March 2024

Monday, 04 to Wednesday, 06	First Mid Term Examination for B.Tech VIII Sem
Thursday, 14 to Saturday 16	Aarohan -2024
During Second/Third Week	Wise Activity

April 2024

Monday, 15 to Saturday, 20	First Mid Term Examination for B.Tech IV & VI Sem
Wednesday, 24	Last Teaching Day for B.Tech VIII Sem
Thursday, 25 to Saturday, 27	Second Mid-Term Examination for B.Tech VIII Sem
Monday, 29 to Wednesday 01 (May)	End-Term Practical Exams for B.Tech VIII Sem
Monday, 29 to Saturday, 04 (May)	First Mid Term Examination for B.Tech II Sem
	Farewell Function Batch 2020-24

May 2024

As Per RTU Schedule	End-Term Theory Exams for B.Tech VIII Sem
Saturday, 25 to Sunday, 26	Students' Council Meet

June 2024

Saturday, 8	Last Teaching Day for B.Tech IV & VI Sem
Monday, 10 to Saturday, 15	Second Mid-Term Examination for B.Tech IV & VI Sem
Monday, 17 to Wednesday 19	End-Term Practical Examination for B.Tech IV & VI Sem
As Per RTU Schedule	End-Term Theory Examination for B.Tech IV & VI Sem
Friday, 21	Last Teaching Day for B.Tech II Sem
Monday, 24 to Saturday, 29	Second Mid-Term Examination for B.Tech II Sem

July 2024

Monday, 01 to Wednesday 03	End-Term Practical Examination for B.Tech II Sem
As Per RTU Schedule	End-Term Theory Examination for B.Tech II Sem

HOLIDAYS IN EVEN SEMESTER

New Year	-	01 January, Monday - 02 January, Tuesday
Makar Sakranti	-	14 January, Sunday, 2024
Republic Day Celebration	-	26 January, Friday - 27 January, Saturday, 2024
Holi	-	23 March, Saturday - 26 March, Tuesday, 2024
Eid-ul-Fiter	-	11 April , Thursday - 13 April, Saturday, 2024
Ambedkar Jayanti	-	13 April, Saturday - 14 April, Sunday, 2024
Eid-al-Adha	-	15 June, Saturday - 17 June, Monday, 2024

*Subject to revision as per RTU notifications
#Annual Alumni Meet in December 28, 2024

5 Department Activity Calendar

Poornima College of Engineering, Jaipur

Calendar for Civil Engineering : EVEN Semester - Session 2021-22

(A) Academic Processes

S. No.	Activity/ Process	B.Tech. II Sem.	B.Tech. IV Sem.	B.Tech. VI Sem.	B.Tech. VIII Sem.
1	Date of Registration & start of regular classes for students	Monday, 26, February 2024	Monday, 19, February 2024	Monday, 19, February 2024	Monday, 08, January 2024
2	Orientation programme	Monday, 26 February to 28 February, 2024	Monday, 19 February to 21 February, 2024	Monday, 19 February to 21 February, 2024	Monday, 08 January to 10 January, 2024
3	Date of submission of question papers by faculty members to secrecy for 1st Mid-term	Monday 15, April 2024	Monday 01, April 2024	Monday 01, April 2024	Monday 19, February 2024
4	I Mid Term Theory & Practical Exam	Monday, 29 April to Saturday 04 May 2024	Monday, 15 to Saturday, 20, April 2024	Monday, 15 to Saturday, 20, April 2024	Monday, 04 to Wednesday, 06, March 2024
5	Showing evaluated answer books of 1st Mid-term exam to students in respective classes	Monday, 11/05/2024	Saturday, 27/04/2022	Saturday, 27/04/2022	Wednesday, 13-03-2024
6	Last date of submission of Evaluated Answer Books and Mark of First Mid-term Theory & Practical exam to Exam and Secrecy Cell respectively	Monday, 18 May 2024	Saturday, 2 May 2024	Saturday, 2 May 2024	Wednesday, 20 March 2024
7	Date of submission of question papers by faculty members to secrecy for 2nd Mid-term	Monday, 10 June 2024	Monday, 27 May 2024	Monday, 27 May 2024	Monday, 8 April 2024
8	Revision classes				
9	Last Teaching Day*	Friday, 21 June 2024	Saturday 8 June 2024	Saturday 8 June 2024	Wednesday, 24, April 2024
10	2nd Mid-term theory & Practical Exams*	Monday, 24 to Saturday, 29, June 2024	Monday, 10 to Saturday, 15, June 2024	Monday, 10 to Saturday, 15, June 2024	Thursday, 27 to Saturday, 29, April 2024

11	End-Term Practical Exams	Monday, 01 to Wednesday, 03, July 2024	Monday, 17 to Wednesday, 19, June 2024	Monday, 17 to Wednesday, 19, June 2024	Monday, 29 April to Wednesday, 01, May 2024
(B) Events and Activities					
12	Survey Camp	Tuesday 16 to Thursday 18, January, 2024			
13	Webinar on Pursuing Higher Education Abroad	Monday, February 19, 2024			
14	Five Days FDP on Constructing Tomorrow: Advancements in Construction Engineering & Structural Design	Friday- Wednesday, 08-13 March 2024			
15	Construction Site Visit	Monday, March 11, 2024			
16	Earth Day	Monday, April 22, 2024			
17	World Environment Day	Wednesday, June 05, 2024			
18	Ist International Conference on Global Challenges in Material Science, Water & Infrastructure Structure Through Soft Computing (ICGCMWI 2024)	Monday-Tuesday, June 24-25, 2024			

6 Teaching Scheme

7.1 RTU Teaching Scheme

RAJASTHAN TECHNICAL UNIVERSITY, KOTA

Teaching & Examination Scheme
B.Tech. : Civil Engineering
2nd Year - IV Semester

SN	Category	Course Code	Course Title	Contact hrs/week L	T	P	Marks Exm Hrs	IA	ETE	Total	Cr
THEORY											
1	BSC	4CE2-01	Advance Engineering Mathematics -II	2	0	0	2	20	80	100	2
2	HSMC	4CE1-03/ 4CE1-02	Managerial Economics & Financial Accounting/ Technical Communication	2	0	0	2	20	80	100	2
3	ESC	4CE3-04	Basic Electronics for Civil Engineering Applications	2	0	0	2	20	80	100	2
4	PCC	4CE4-05	Strength of Materials	3	0	0	3	30	120	150	3
5		4CE4-06	Hydraulics Engineering	3	0	0	3	30	120	150	3
6		4CE4-07	Building Planning	2	0	0	2	20	80	100	2
7		4CE4-08	Concrete Technology	3	0	0	3	30	120	150	3
			Sub Total	17	0	0		170	680	850	17
PRACTICAL & SESSIONAL											
8	PCC	4CE4-21	Material Testing Lab	0	0	2		30	20	50	1
9		4CE4-22	Hydraulics Engineering Lab	0	0	2		30	20	50	1
10		4CE4-23	Building Drawing	0	0	3		45	30	75	1.5
11		4CE4-24	Advanced Surveying Lab	0	0	2		30	20	50	1
12		4CE4-25	Concrete Lab	0	0	3		45	30	75	1.5
13	SODECA	4CE8-60	Social Outreach, Discipline & Extra Curricular Activities	0	0	0		0	25	25	0.5
			Sub- Total	0	0	12		180	145	325	6.5
			TOTAL OF IV SEMEESTER	17	0	12		350	825	1175	23.5

***L:** Lecture, **T:** Tutorial, **P:** Practical, **Cr:** Credits*

***ETE:** End Term Exam, **IA:** Internal Assessment*

Office of Dean Academic Affairs
Rajasthan Technical University, Kota

RAJASTHAN TECHNICAL UNIVERSITY, KOTA

Teaching & Examination Scheme
B. Tech.: Civil Engineering
3rd Year – VI Semester

SN	Category	Course Code	Course Title	Contact hrs/week L	T	P	Marks Exm Hrs	IA	ETE	Total	Cr
THEORY											
1	ESC	6CE3-01	Wind & Seismic Analysis	2	0	0	2	20	80	**100**	**2**
2	PCC/ PEC	6CE4-02	Structural Analysis-II	3	0	0	3	30	120	**150**	**3**
3		6CE4-03	Environmental Engineering	3	0	0	3	30	120	**150**	**3**
4		6CE4-04	Design of Steel Structures	3	0	0	3	30	120	**150**	**3**
5		6CE4-05	Estimating & Costing	2	0	0	2	20	80	**100**	**2**
6		Departmental Elective-III:		2	0	0	2	20	80	**100**	**2**
		6CE5-11	Pre-stressed Concrete								
		6CE5-12	Solid and Hazardous Waste Management								
		6CE5-13	Traffic Engineering and Management								
7		Departmental Elective-IV:		2	0	0	2	20	80	**100**	**2**
		6CE5-14	1. Bridge Engineering								
		6CE5-15	2. Rock Engineering								
		6CE5-16	3. Geographic Information System & Remote Sensing								
		Sub Total		**17**	**0**	**0**		**170**	**680**	**850**	**17**
PRACTICAL & SESSIONAL											
8	PCC	6CE4-21	Environmental Engineering Design and Lab	0	0	3	3	45	30	**75**	**1.5**
9		6CE4-22	Steel Structure Design	0	0	3	3	45	30	**75**	**1.5**
10		6CE4-23	Quantity Surveying and Valuation	0	0	2	2	30	20	**50**	**1**
11		6CE4-24	Water and Earth Retaining Structures Design	0	0	2	2	30	20	**50**	**1**
12		6CE4-25	Foundation Design	0	0	2	2	30	20	**50**	**1**
13	SODECA	6CE8-00	Social Outreach, Discipline & Extra Curricular Activities						25	**25**	**0.5**
		Sub- Total		**0**	**0**	**12**		**180**	**145**	**325**	**6.5**
		TOTAL OF VI SEMESTER		**17**	**0**	**12**		**350**	**825**	**1175**	**23.5**

L: Lecture, T: Tutorial, P: Practical, Cr: Credits
ETE: End Term Exam, IA: Internal Assessment

Office of Dean Academic Affairs
Rajasthan Technical University, Kota

RAJASTHAN TECHNICAL UNIVERSITY, KOTA

Teaching & Examination Scheme
B.Tech.: Civil Engineering
4th Year - VIII Semester

SN	Category	Course Code	Course Title	Hours Per Week			Marks				Cr
				L	T	P	Exm Hrs	IA	ETE	Total	
THEORY											
1	PCC	8CE4-01	Project Planning and Construction Management	3	0	0	3	30	120	**150**	**3**
2	OE		Open Elective-II	3	0	0	3	30	120	**150**	**3**
			Sub Total	**6**	**0**	**0**		**60**	**240**	**300**	**6**
PRACTICAL & SESSIONAL											
3	PCC	8CE4-21	Project Planning & Construction Management Lab	0	0	2		30	20	**50**	**1**
4		8CE4-22	Pavement Design	0	0	2		30	20	**50**	**1**
5	PSIT	8CE7-50	Project	3	0	0		210	140	**350**	**7**
6	SODECA	8CE8-00	Social Outreach, Discipline & Extra Curricular Activities	0	0	0		0	25	**25**	**0.5**
			Sub- Total	**0**	**0**	**4**		**270**	**205**	**475**	**9.5**
			TOTAL OF VIII SEMESTER	**9**	**0**	**4**		**330**	**445**	**775**	**15.5**

L: *Lecture,* ***T:*** *Tutorial,* ***P:*** *Practical,* ***Cr:*** *Credits*
ETE: *End Term Exam,* ***IA:*** *Internal Assessment*

Office of Dean Academic Affairs
Rajasthan Technical University, Kota

7 PCE Teaching Scheme

Year	Sem	Course Name	Subject Code	L/T/P	Load Per Week	No. of Sec	No. of Batches	Batch Size (T/H/F)	Total Load (L)	Total Load (T)	Total Load (P)	Total Load (L+T+P)	Teaching Dept.	Cat.
2	4	Advance Engineering Mathematics -II	4CE2-01	L	2	1	3	F	2	0	0	2	Maths	BSC
2	4	Advance Engineering Mathematics -II	4CE2-01	L	0	1	3	F	0	0	0	0	Maths	BSC
2	4	Managerial Economics & Financial Accounting	4CE1-03	L	2	1	3	F	2	0	0	2	Humanities	HSMC
2	4	Basic Electronics for Civil Engineering Applications	4CE3-04	L	2	1	3	F	2	0	0	2	ECE	ESC
2	4	Strength of Materials	4CE4-05	L	3	1	3	F	3	0	0	3	CIVIL	PCC
2	4	Strength of Materials	4CE4-05	L	1	1	3	F	0	3	0	3	CIVIL	PCC
2	4	Hydraulics Engineering	4CE4-06	L	3	1	3	F	3	0	0	3	CIVIL	PCC
2	4	Building Planning	4CE4-07	L	3	1	3	F	3	0	0	3	CIVIL	NA
2	4	Concrete Technology	4CE4-08	L	3	1	3	F	3	0	0	3	CIVIL	PCC
2	4	Material Testing Lab	4CE4-21	P	2	1	3	T	0	0	6	6	CIVIL	PCC
2	4	Hydraulics Engineering Lab	4CE4-22	P	2	1	3	T	0	0	6	6	CIVIL	PCC
2	4	Building Drawing	4CE4-23	P	2	1	3	T	0	0	6	6	CIVIL	PCC
2	4	Advance	4CE4-	P	2	1	3	T	0	0	6	6	CIVIL	PC

		d Surveying Lab	24										C
2	4	Concrete Lab	4CE4-25	P	2	1	3	T	0	0	6	6	CIVIL	PCC
2	4	NSP	4NSPCE	P	0	1	0	H	0	0	0	0	CIVIL	NA
3	6	Wind And Seismic Analysis	6CE3-01	L	2	1	3	F	2	0	0	2	CIVIL	NA
3	6	Structural Analysis-II	6CE4-02	L	3	1	3	F	3	0	0	3	CIVIL	NA
3	6	Structural Analysis-II	6CE4-02	T	1	1	3	T	0	3	0	3	CIVIL	NA
3	6	Environmental Engineering	6CE4-03	L	3	1	3	F	4	0	0	3	CIVIL	NA
3	6	Design of Steel Structures	6CE4-04	L	3	1	3	F	4	0	0	3	CIVIL	NA
3	6	Estimating & Costing	6CE4-05	L	2	1	3	F	2	0	0	2	CIVIL	NA
3	6	Solid And Hazardous Waste Management	6CE5-12	L	2	1	3	F	2	0	0	2	CIVIL	NA
3	6	Traffic Engineering And Management	6CE5-13	L	2	1	3	F	2	0	0	2	CIVIL	NA
3	6	Rock Engineering	6CE5-16	L	2	1	3	F	2	0	0	2	CIVIL	NA
3	6	GIS-RS	6CE5-15	L	2	1	3	F	2	0	0	2	CIVIL	NA
3	6	Environmental Engineering Design And Lab	6CE4-21	P	2	1	3	T	0	0	6	6	CIVIL	NA
3	6	Steel Structures Design	6CE4-22	P	2	1	3	T	0	0	6	6	CIVIL	NA
3	6	Quantity Surveying And Valuation	6CE4-23	P	2	1	3	T	0	0	6	6	CIVIL	NA
3	6	Water And	6CE4-24	P	2	1	3	T	0	0	6	6	CIVIL	NA

		Earth Retaining Structures Design												
3	6	Foundation Engineering	6CE4-25	P	2	1	3	T	0	0	6	6	CIVIL	NA
3	6	NSP	6NSPCE	P	0	1	3	H	0	0	0	0	CIVIL	NA
4	8	Project Planning & Construction Management	8CE4-01	L	3	1	2	F	3	0	0	3	CIVIL	NA
4	8	Composite Material	8CE6-60.1	L	3	1	2	F	3	0	0	3	CIVIL	NA
4	8	Fire and Safety Engineering	8CE6-60.2	L	3	1	2	F	3	0	0	3	CIVIL	NA
4	8	Project Planning & Construction Management Lab	8CE4-21	P	2	1	2	T	0	0	4	4	CIVIL	NA
4	8	Pavement Design Lab	8CE4-22	P	2	1	2	T	0	0	4	4	CIVIL	NA
4	8	Project Stage - II	8CE7-50	P	8	1	2	T	0	0	16	16	CIVIL	NA

7.1 Marking Scheme

MARKING SCHEME FOR PRACTICAL EXAM, EVEN SEM.,		EXAM & SECRECY CELL, PCE									
		I+II Mid Term Exam			Atten & Performance.			End Term Exam			Max.
Code	SUBJECT	Exp.	Viva	Total	Attn.	Perf.	Total	Exp.	Viva	Total	Marks
2FY2-21	Engineering Chemistry Lab	30	10	40	10	30	40	30	10	40	100
2FY2-20	Engineering Physics Lab	30	10	40	10	30	40	30	10	40	100
2FY1-23	Human Values Activities and Sports	30	10	40	10	30	40	30	10	40	100
2FY1-22	Language Lab	30	10	40	10	30	40	30	10	40	100
2FY3-25	Manufacturing Practices Workshop	30	10	40	10	30	40	30	10	40	100
2FY3-24	Computer Programming Lab	30	10	40	10	30	40	30	10	40	100
2FY3-27	Basic Civil Engineering Lab	30	10	40	10	30	40	30	10	40	100
2FY3-26	Basic Electrical Engineering Lab	30	10	40	10	30	40	30	10	40	100
2FY3-29	Computer Aided Machine Drawing	30	10	40	10	30	40	30	10	40	100
4AID4-21	Microprocessor & Interfaces Lab	30	10	40	10	30	40	30	10	40	100
4AID4-22	Database Management System Lab	30	10	40	10	30	40	30	10	40	100
4AID4-23	Network Programming Lab	30	10	40	10	30	40	30	10	40	100
4AID4-24	Linux Shell Programming Lab	30	10	40	10	30	40	30	10	40	100
4AID4-25	Java Lab	30	10	40	10	30	40	30	10	40	100
4CAI4-21	Microprocessor & Interfaces Lab	30	10	40	10	30	40	30	10	40	100
4CAI4-22	Database Management System Lab	30	10	40	10	30	40	30	10	40	100
4CAI4-23	Network Programming Lab	30	10	40	10	30	40	30	10	40	100
4CAI4-24	Linux Shell Programming Lab	30	10	40	10	30	40	30	10	40	100
4CAI4-25	Java Lab	30	10	40	10	30	40	30	10	40	100
4CSR4-21	Microprocessor & Interfaces Lab	30	10	40	10	30	40	30	10	40	100
4CSR4-22	Database Management System Lab	30	10	40	10	30	40	30	10	40	100
4CSR4-23	Network Programming Lab	30	10	40	10	30	40	30	10	40	100
4CSR4-24	Linux Shell Programming Lab	30	10	40	10	30	40	30	10	40	100
4CSR4-25	Java Lab	30	10	40	10	30	40	30	10	40	100
4CCS4-21	Microprocessor & Interfaces Lab	30	10	40	10	30	40	30	10	40	100
4CCS4-22	Database Management System Lab	30	10	40	10	30	40	30	10	40	100
4CCS4-23	Network Programming Lab	30	10	40	10	30	40	30	10	40	100
4CCS4-24	Linux Shell Programming Lab	30	10	40	10	30	40	30	10	40	100
4CCS4-25	Java Lab	30	10	40	10	30	40	30	10	40	100
4CE4-21	Material Testing Lab	30	10	40	10	30	40	30	10	40	100
4CE4-22	Hydraulics Engineering Lab	30	10	40	10	30	40	30	10	40	100
4CE4-23	Building Drawing	30	10	40	10	30	40	30	10	40	100
4CE4-24	Advanced Surveying Lab	30	10	40	10	30	40	30	10	40	100
4CE4-25	Concrete Lab	30	10	40	10	30	40	30	10	40	100
4CS4-21	Microprocessor & Interfaces Lab	30	10	40	10	30	40	30	10	40	100
4CS4-22	Database Management System Lab	30	10	40	10	30	40	30	10	40	100
4CS4-23	Network Programming Lab	30	10	40	10	30	40	30	10	40	100
4CS4-24	Linux Shell Programming Lab	30	10	40	10	30	40	30	10	40	100
4CS4-25	Java Lab	30	10	40	10	30	40	30	10	40	100
4EC4-21	Analog and Digital Communication Lab	30	10	40	10	30	40	30	10	40	100
4EC4-22	Analog Circuits Lab	30	10	40	10	30	40	30	10	40	100
4EC4-23	Microcontrollers Lab	30	10	40	10	30	40	30	10	40	100
4EC4-24	Electronics Measurement & Instrumentation Lab	30	10	40	10	30	40	30	10	40	100
4EE4-21	Electrical Machine - II Lab	30	10	40	10	30	40	30	10	40	100
4EE4-22	Power Electronics Lab	30	10	40	10	30	40	30	10	40	100
4EE4-23	Digital Electronics Lab	30	10	40	10	30	40	30	10	40	100
4EE3-24	Measurement Lab	30	10	40	10	30	40	30	10	40	100
4IT4-21	Linux Shell Programming Lab	30	10	40	10	30	40	30	10	40	100
4IT4-22	Database Management System Lab	30	10	40	10	30	40	30	10	40	100
4IT4-23	Network Programming Lab	30	10	40	10	30	40	30	10	40	100
4IT4-24	Java Lab	30	10	40	10	30	40	30	10	40	100
4IT4-25	Web Technology Lab	30	10	40	10	30	40	30	10	40	100
4ME3-21	Digital Electronics lab	30	10	40	10	30	40	30	10	40	100
4ME4-22	Fluid Mechanics lab	30	10	40	10	30	40	30	10	40	100
4ME4-23	Production practice lab	30	10	40	10	30	40	30	10	40	100
4ME4-24	Theory of machines Lab	30	10	40	10	30	40	30	10	40	100
6CE4-21	Environmental Engineering Design and Lab	30	10	40	10	30	40	30	10	40	100
6CE4-22	Steel Structure Design	30	10	40	10	30	40	30	10	40	100
6CE4-23	Quantity Surveying and Valuation	30	10	40	10	30	40	30	10	40	100
6CE4-24	Water and Earth Retaining Structures Design	30	10	40	10	30	40	30	10	40	100
6CE4-25	Foundation Design	30	10	40	10	30	40	30	10	40	100
6CS4-21	Digital Image Processing Lab	30	10	40	10	30	40	30	10	40	100
6CS4-22	Machine Learning Lab	30	10	40	10	30	40	30	10	40	100
6CS4-23	Python Lab	30	10	40	10	30	40	30	10	40	100
6CS4-24	Mobile Application Development Lab	30	10	40	10	30	40	30	10	40	100
6EC 4-21	Computer Network Lab	30	10	40	10	30	40	30	10	40	100
6EC 4-22	Antenna and wave propagation Lab	30	10	40	10	30	40	30	10	40	100
6EC 4-23	Electronics Design Lab	30	10	40	10	30	40	30	10	40	100
6EC 4-24	Power Electronics Lab	30	10	40	10	30	40	30	10	40	100
6EE4-21	Power System - II Lab	30	10	40	10	30	40	30	10	40	100
6EE4-22	Electric Drives Lab	30	10	40	10	30	40	30	10	40	100
6EE4-23	Power System Protection Lab	30	10	40	10	30	40	30	10	40	100
6EE4-24	Modelling and simulation lab	30	10	40	10	30	40	30	10	40	100
6IT4-21	Digital Image Processing Lab	30	10	40	10	30	40	30	10	40	100
6IT4-22	Machine Learning Lab	30	10	40	10	30	40	30	10	40	100
6IT4-23	Python Lab	30	10	40	10	30	40	30	10	40	100
6IT4-24	Mobile Application Development Lab	30	10	40	10	30	40	30	10	40	100
6ME4-21	CIMS Lab	30	10	40	10	30	40	30	10	40	100
6ME4-22	Vibration Lab	30	10	40	10	30	40	30	10	40	100
6ME4-23	Machine Design Practice II	30	10	40	10	30	40	30	10	40	100
6ME4-24	Thermal Engineering Lab I	30	10	40	10	30	40	30	10	40	100
8CE4-21	Project Planning & Construction Management	15	5	20	5	15	20	15	5	20	50
8CE4-22	Pavement Design	15	5	20	5	15	20	15	5	20	50
8CE7-50	Project			210					140		350
8CS4-21	Big Data Analytics Lab	15	5	20	5	15	20	15	5	20	50
8CS4-22	Software Testing and Validation Lab	15	5	20	5	15	20	15	5	20	50
8CS7-50	Project			210					140		350
8EC4-21	Internet of Things (IOT) Lab	15	5	20	5	15	20	15	5	20	50
8EC4-22	Skill Development Lab	15	5	20	5	15	20	15	5	20	50
8EC7-50	Project			210					140		350
8EE4-21	Energy Systems Lab	30	10	40	10	30	40	30	10	40	100
8EE7-50	Project			210					140		350
8IT4-21	Internet of Things Lab	15	5	20	5	15	20	15	5	20	50
8IT4-22	Software Testing and Validation Lab	15	5	20	5	15	20	15	5	20	50
8IT7-50	Project			210					140		350
8ME4-21	Industrial Engineering Lab	15	5	20	5	15	20	15	5	20	50
8ME4-22	Metrology Lab	15	5	20	5	15	20	15	5	20	50
8ME7-50	Project *#			210					140		350

NOTE: - (1) In Attendance & Performance marks should be given on the basis of student overall performance in semester i. e. continuous evaluation.
(2) In Common Pool marks should be given by HOD on the basis of student Assignment,Non Syllabus Activity,Online Exam Exam,Application/Survey / Case Study based Learning, Pre-Placement Activity, Department Level Career Oriented Activities through out the semester.

8 Department Load Allocation

POORNIMA COLLEGE OF ENGINEERING

DEPARTMENT OF CIVIL ENGINEERING

LOAD DISTRIBUTION

EVEN SEM 2023-24

S. No.	Name of Faculty	Designation	L/T/P	Name of Subject/Lab	Subject/Lab Code	Lecture	Tutorial	Practical	Total Load	Grand Total
1	**Balwan Sheshma**	Assistant Professor	L	Design of Steel Structures	6CE4-04	3			3	**16**
			P	Steel Structures Design	6CE4-22			2	6	
			P	Project Stage - II	8CE7-50			4	4	
			L	Project Planning & Construction Management	8CE4-01	3			3	
2	**Rituraj Singh Rathore**	Assistant Professor	P	Water And Earth Retaining Structures Design	6CE4-24			2	6	**19**
			L	Solid And Hazardous Waste Management	6CE5-12	3			3	
			L	Hydraulics Engineering	4CE4-06	4			4	
			P	Hydraulics Engineering Lab	4CE4-22			2	4	
			P	Project Stage - II	8CE7-50			2	2	
3	**Ayush Meena**	Assistant Professor	L	Strength of Materials	4CE4-05	3			3	**16**
			T	Strength of Materials	4CE4-05		1		2	
			P	Material Testing Lab	4CE4-21			2	4	
			L	Composite Material	8CE6-60.1	3			3	
			P	Project Stage - II	8CE7-50			4	4	
4	**Prateek Sharma**	Assistant Professor	L	Traffic Engineering & Management	6CE5-13	3			3	**17**
			P	Advanced Surveying Lab	4CE4-24			2	4	
			L	Estimating & Costing	6CE4-05	2			2	

			P	Quantity Surveying And Valuation	6CE4-23			2	6	
			P	Project Stage - II	8CE7-50			2	2	
5	**Sonu Kumar**	Assistant Professor	L	Wind And Seismic Analysis	6CE3-01	2			2	**15**
			L	Rock Engineering	6CE5-15	3			3	
			P	Project Stage - II	8CE7-50			4	4	
			P	Pavement Design Lab	8CE4-22			2	6	
6	**Dr. Vishal Singhal**	Professor	P	Project Planning & Construction Management Lab	8CE4-21			2	6	**17**
			L	Building Planning	4CE4-07	3			3	
			P	Foundation Engineering	6CE4-25			2	6	
			P	Project Stage - II	8CE7-50			2	2	
7	**Dr. Pran N Dadhich**	Professor	L	GIS-RS	6CE5-16	3			3	**11**
			P	Building Drawing	4CE4-23			2	4	
			P	Project Stage - II	8CE7-50			4	4	
8	**Mr. Narendra Bhadana**	Assistant Professor	L	Concrete Technology	4CE4-08	3			3	**17**
			P	Project Stage - II	8CE7-50			4	4	
			P	Concrete Lab	4CE4-25			2	4	
			L	Structural Analysis-II	6CE4-02	3			3	
			T	Structural Analysis-II	6CE4-02		1		3	
9	**Dr. Santanu Malik**	Associate Professor	L	Environmental Engineering	6CE4-03			3	3	16
			P	Environmental Engineering Design And Lab	6CE4-21			2	6	
			L	Fire and Safety Engineering	8CE6-60.2	3			3	
			T	Project Stage - II-PCE	8CE7-50			4	4	

9 Time Table

9.1 Orientation Time Table

IV SEM

POORNIMA COLLEGE OF ENGINEERING DEPARTMENT OF CIVIL ENGINEERING IV SEM Orientation TIME TABLE (2023-2024)								
DAY	**BATCH**	**8:30-9:30 AM**	**9:30-10:30**	**10:30-11:30**	**11:30-12:20**	**12:20-1:20**	**1:20 - 2:20**	**2:20-3:20**
MON	**B1**	Tutor Interaction	HE	Session on requirement and opportunities for higher study from abroad	**LUNCH**	ME&FA	BEfCEA	CT
	B2							
TUE	**B1**	BEfCEA	SOM	AS Lab		AEM	HE Lab	MT Lab
	B2							
WED	**B1**	CT Lab	BD Lab	HoD Interaction		BP	HE	SOM
	B2							
Dr. Vishal Singhal **Time Table Co-ordinator**			**Dr. Pran N. Dadhich** **HoD, Department of Civil Engineering**			**Dr. Mahesh Bundele** **Campus Director, PCE**		

Course Code		Course Title	Name of Faculty
4CE4-05	**SOM**	Strength of Material	Mr. Ayush Meena (AM)
4CE4-06	**HE**	Hydraulics Engineering	Mr. Rituraj Singh Rathore (RSR)
4CE4-07	**BP**	Building Planning	Dr. Vishal Singhal (VS)
4CE4-08	**CT**	Concrete Technology	Mr. Narendra Bhadana (NB)
4CE2-01	**AEM**	Advance Engineering Mathematics -II	Dr. Shilpi Jain (SJ)
4CE3-04	**BEfCEA**	Basic Electronics for Civil Engineering Applications	Dr. Rajesh Kumar Bathija (RB)
4CE1-03	**ME&FA**	Managerial Economics & Financial Accounting	Ms. Kalpana Sharma (KS)
4CE4-22	**HE LAB**	Hydraulics Engineering Lab	Mr. Rituraj Singh Rathore (RSR)
4CE4-21	**MT LAB**	Material Testing Lab	Mr. Ayush Meena (AM)
4CE4-24	**AS LAB**	Advanced Surveying Lab	Mr. Prateek Sharma (PS)
4CE4-23	**BD LAB**	Building Drawing	Dr. Pran Nath Dadhich (PN)
4CE4-25	**CT LAB**	Concrete Lab	Mr. Narendra Bhadana (NB)

VI SEM

POORNIMA COLLEGE OF ENGINEERING DEPARTMENT OF CIVIL ENGINEERING VI SEM Orientation TIME TABLE (2023-2024)								
DAY	**BATCH**	**8:30-9:30 AM**	**9:30-10:30**	**10:30-11:30**	**11:30-12:20**	**12:20-1:20**	**1:20 - 2:20**	**2:20-3:20**
MON	**B1**	Tutor Interaction	E&C	Session on requirement and opportunities for higher study from abroad	**LUNCH**	EE	WERSD Lab	QSV Lab
	B2							
	B3							
TUE	**B1**	SA-II	SSD Lab	EED Lab		RE/GIS-RS	S&HWM/TEM	DoSS
	B2							
	B3							
WED	**B1**	WSA	FE Lab	HoD Interaction		EE	DoSS	E&C
	B2							
	B3							
Dr. Vishal Singhal **Time Table Co-ordinator**			**Dr. Pran N. Dadhich** **HOD, Department of Civil Engineering**			**Dr. Mahesh Bundele** **Campus Director, PCE**		

Course Code		Course Title	Name of Faculty
6CE3-01	**WSA**	Wind & Seismic Analysis	Mr. Sonu Kumar (SKY)
6CE4-02	**SA-II**	Structural Analysis-II	Mr. Narendra Bhadana (NB)
6CE4-03	**EE**	Environmental Engineering	Dr. Santanu Malik (SM)
6CE4-04	**DoSS**	Design of Steel Structures	Mr. Balwan Sheshma (BS)
6CE4-05	**E&C**	Estimating & Costing	Mr. Prateek Sharma (PS)
6CE5-12	**S&HWM**	Solid and Hazardous Waste Management	Mr. Rituraj Singh Rathore (RSR)
6CE5-13	**TEM**	Traffic Engineering and Management	Mr. Prateek Sharma (PS)
6CE5-15	**RE**	Rock Engineering	Mr. Sonu Kumar (SKY)
6CE5-16	**GIS-RS**	Geographic Information System & Remote Sensing	Dr. Pran Nath Dadhich (PN)
6CE4-21	**EED Lab**	Environmental Engineering Design and Lab	Dr. Santanu Malik (SM)
6CE4-22	**SSD Lab**	Steel Structure Design	Mr. Balwan Sheshma (BS)
6CE4-23	**QSV Lab**	Quantity Surveying and Valuation	Mr. Prateek Sharma (PS)
6CE4-24	**WERSD Lab**	Water and Earth Retaining Structures Design	Mr. Rituraj Singh Rathore (RSR)
6CE4-25	**FD Lab**	Foundation Design	Dr. Vishal Singhal (VS)

VIII SEM

Poornima College of Engineering							
Department of Civil Engineering							
Session 2023-24 Even Semester							
Orientation Time Table VIII Semester							
	8:30 - 9:30	9:30 - 10:30	10:30 - 11:30	11:30 - 12:20	12:20 - 1:20	1:20 - 2:20	2:20 - 3:20
Monday	Tutor's Interaction Mr. Sonu Kumar Room -2003	Project Discussion Dr. Santanu Malik Room -2003	Effective Communication Dr. Shalini Shah Room -2003	Lunch	HoD's Interaction Dr. Pran Nath Dadhich Room -2003	Session on MS Office Dr. Vishal Singhal CAD Lab	
Tuesday	Placement Mock Drive Aptitude Test Mr. Sonu Kumar Room -2003	Technical Test Mr. Sonu Kumar Room -2003	Group Discussion Dr. Shalini Shah Room -2003	Lunch	Group Discussion Dr. Shalini Shah Room -2003	Personal Interview (Technical and HR) Mr. Sonu Kumar Room -2003	
Wednesday	Subject Introduction - PPCM Mr. Balwan Room -2003	Lab Introduction - PPCM Lab Mr. Rituraj Singh Rathore Room -2003	Lab Introduction - PD Lab Mr. Balwan Room -2003	Lunch	Project Discussion Dr. Santanu Malik Room -2003	Session on Enterpreneurship and startups Dr. Manoj Guttani Room - 2003	Placement Documneta tion Mr. Sonu Kumar Room - 2003

9.2 Academic Time Table

IV SEM Time Table Effective From Jan, 27, 2022

DEPARTMENT OF CIVIL ENGINEERING w.e.f_19-02-24

IV SEM (PCE)

	1 8:00 - 9:00	2 9:00 - 10:00	3 10:00 - 11:00	BREAK 11:00 - 11:50	4 11:50 - 12:50	5 12:50 - 13:50	6 13:50 - 14:50
Mo	RITURAJ SINGH RATHORE 4CE4-06 HE (L) 1004	B1 4011 4CE4-25 CTL (P) NB / LK B2 1B01 4CE4-21 MTL (P) AM / HK			Kalpana Sharma 4CE1-03 ME&FA (L) 1004	AYUSH MEENA 4CE4-05 SOM (L) 1004	Narendra Bhadhana 4CE4-08 CT (L) 1004
Tu	Rajesh Kumar Bathija 4CE3-04-BEf CEA (L) 1004	AYUSH MEENA 4CE4-05 SOM (L) 1004	RITURAJ SINGH RATHORE 4CE4-06 HE (L) 1004		B1 4CE4-05 SOM (T) 1004 AM B2 4CE2-01 AEM (T) 1001 SJ	B1 1003 4CE4-24 ASL (P) PS / SS B2 1B10 4CE4-22 HEL (P) RSR / HK	
We	B1 1B10 4CE4-22 HEL (P) RSR / HK B2 4011 4CE4-25 CTL (P) NB / LK		DR. SHILPI JAIN 4CE2-01 AEM (L) 1004		DR. VISHAL SINGHAL 4CE4-07 BP (L) 1004	AYUSH MEENA 4CE4-05 SOM (L) 1004	RITURAJ SINGH RATHORE 4CE4-06 HE (L) 1004
Th	B1 4CE2-01 AEM (T) 1001 SJ B2 4CE4-05 SOM (T) 1004 AM	RITURAJ SINGH RATHORE 4CE4-06 HE (L) 1004	Rajesh Kumar Bathija 4CE3-04-BEf CEA (L) 1004		B1 1002 4CE4-23 BD (P) PN / LK B2 1003 4CE4-24 ASL (P) PS / SS		Narendra Bhadhana 4CE4-08 CT (L) 1004
Fr	Narendra Bhadhana 4CE4-08 CT (L) 1004	DR. SHILPI JAIN 4CE2-01 AEM (L) 1004	DR. VISHAL SINGHAL 4CE4-07 BP (L) 1004		Kalpana Sharma 4CE1-03 ME&FA (L) 1004	B1 1B01 4CE4-21 MTL (P) AM / SS B2 1002 4CE4-23 BD (P) PN / LK	

H.O.D- Dr.P.N Dadhich Time-Table Co-ordinator - Dr. Vishal Singhal aSc Timetables

VI SEM Time Table Effective From Jan, 20, 2022

DEPARTMENT OF CIVIL ENGINEERING w.e.f_19-02-24

VI SEM(PCE)

	1 8:00 - 9:00	2 9:00 - 10:00	3 10:00 - 11:00	BREAK 11:00 - 11:50	4 11:50 - 12:50	5 12:50 - 13:50	6 13:50 - 14:50
Mo	Narendra Bhadhana 6CE4-02 SA-II (L) 2004	PRATEEK SHARMA 6CE4-05 E&C (L) 2004	SONU KUMAR YADAV 6CE3-01 WSA (L) 2004		PS / RSR 6CE5-12 6CE5-13 (S&HWM) TEM (L) 2004,2007	B1 2007 6CE4-24 WERSD (P) RSR B2 2004 6CE4-22 SSDL (P) BS B3 1001-A 6CE4-23 QSV (P) PS	
Tu	Narendra Bhadhana 6CE4-02 SA-II (L) 2004	PRATEEK SHARMA 6CE4-05 E&C (L) 2004	SONU KUMAR YADAV 6CE3-01 WSA (L) 2004		SKY / PN 6CE5-15 6CE5-16 RE GIS-RS (L) 2004,2007	BALWAN SHESHMA 6CE4-04 DoSS (L) 2004	DR. SANTANU MALIK 6CE4-03 EE (L) 2004
We	BALWAN SHESHMA 6CE4-04 DoSS (L) 2004	B1 1001 6CE4-25 FEL (P) VS B2 1001-A 6CE4-23 QSV (P) PS B3 2004 6CE4-22 SSDL (P) BS	B1 2007 6CE4-25 FEL (P) VS		DR. SANTANU MALIK 6CE4-03 EE (L) 2004	PS / RSR 6CE5-12 6CE5-13 (S&HWM) TEM (L) 2007,2004	Narendra Bhadhana 6CE4-02 SA-II (L) 2004
Th	DR. SANTANU MALIK 6CE4-03 EE (L) 2004	SKY / PN 6CE5-15 6CE5-16 RE GIS-RS (L) 2004,2007	PS / RSR 6CE5-12 6CE5-13 (S&HWM) TEM (L) 2007,2004		B1 2004 6CE4-02 SA-II (T) NB B2 1001 6CE4-25 FEL (P) VS B3 2007 6CE4-24 WERSD (P) RSR	B1 2004 6CE4-22 SSDL (P) BS B2 2008 6CE4-21EED&L (P) SM / HK	B3 2007 6CE4-25 FEL (P) VS
Fr	BALWAN SHESHMA 6CE4-04 DoSS (L) 2004	B1 1001-A 6CE4-23 QSV (P) PS B2 2007 6CE4-24 WERSD (P) RSR B3 2008 6CE4-21EED&L (P) SM / SS			SKY / PN 6CE5-15 6CE5-16 RE GIS-RS (L) 2004,2007	B1 2008 6CE4-21EED&L (P) SM / HK B2 1001 6CE4-25 FEL (P) VS B3 2004 6CE4-02 SA-II (T) NB	B2 2004 6CE4-02 SA-II (T) NB B3 2007 6CE4-25 FEL (P) VS

H.O.D- Dr.P.N Dadhich Time-Table Co-ordinator - Dr. Vishal Singhal aSc Timetables

VIII SEM Time Table Effective From Jan, 20, 2022

DEPARTMENT OF CIVIL ENGINEERING w.e.f_19-02-24

VIII SEM(PCE)

	1 8:00 - 9:00	2 9:00 - 10:00	3 10:00 - 11:00	BREAK 11:00 - 11:50	4 11:50 - 12:50	5 12:50 - 13:50	6 13:50 - 14:50
Mo	AM / SM OE 2003	8CE7-50 PR-II 2003 SM / SS			BALWAN SHESHMA 8CE4-01 PP&CM (L) 2003	B1 2003 8CE4-21 PP&CM (P) VS B2 2008 8CE4-22 PDL (P) SKY B3 8CE7-50 PR-II LK / HK / SS / PN	
Tu	AM / SM OE 2003	8CE7-50 PR-II 2003 SM / PN / SS / HK / LK			BALWAN SHESHMA 8CE4-01 PP&CM (L) 2003	B1 8CE7-50 PR-II LK / NB B2 2003 8CE4-21 PP&CM (P) VS B3 2008 8CE4-22 PDL (P) SKY	
We	AM / SM OE 2003	8CE7-50 PR-II 2003 PN / SS / SKY / AM			BALWAN SHESHMA 8CE4-01 PP&CM (L) 2003	B1 2008 8CE4-22 PDL (P) SKY B2 8CE7-50 PR-II HK / LK / SS / PN B3 2003 8CE4-21 PP&CM (P) VS	
Th							
Fr							

H.O.D- Dr.P.N Dadhich Time-Table Co-ordinator - Dr. Vishal Singhal aSc Timetables

10 Course Outcome Attainment Process:

10.1 Course Outcome Attainment Process

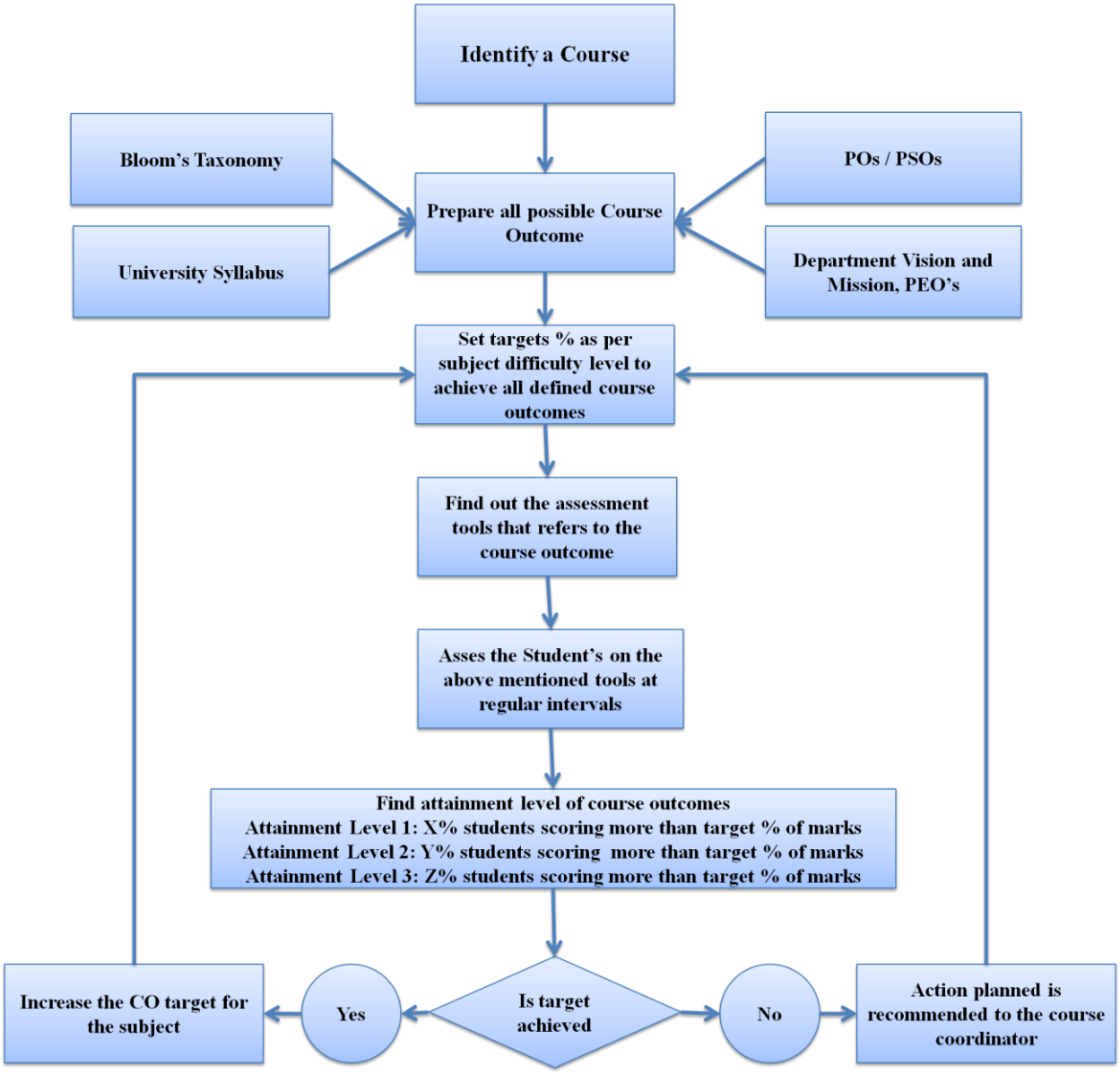


Figure. Course Outcome Attainment Process

10.2 List of CO & CO mapping with PO

POORNIMA COLLEGE OF ENGINEERING, JAIPUR																				
DEPARTMENT OF CIVIL ENGINEERING																				
B.Tech. (Civil Engineering)																				
Session 2023-24																				
MAPPING OF COURSE OUTCOMES WITH PROGRAMME OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES																				
S. No.	**Course Code**	**Course Name**	**CO No.**	**Course Outcomes**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**	**PSO3**
1	2FY2-01	Engineering Mathematics-II	CO1	Students will be able to define basic rank of matrix to find, eigen values and eigen vectors of the matrix, degree and order of differential equations.	**2**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO2	Students will be able to explain complementary functions and particular integral of ordinary differential equation and various methods of solution of ODE to solve complex engineering problems.	**2**	**1**	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO3	The students will be able to apply an appropriate analytical technique to find solution of first order and higher order differential equations.	**3**	**2**	-	-	-	-	-	-	-	-	-		-	-	-
			CO4	Students will be able to classify higher order partial differential equations and analyze a wide variety of time dependent phenomena of real world including heat conduction, wave equation particle diffusion.	**2**	**3**	-	-	-	-	-	-	-	-	-	-	-	-	-
					2.3	**2**	-	-	-	-	-	-	-	-	-	-	-	-	-
2	2FY2-03	Engineering Chemistry	CO1	Describe characteristics of water, fuel and Engineering materials-	**1**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO2	Determine of hardness of water and calorific value of fuels for Industrial as well as domestic purposes	**2**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO3	Compare different techniques of water treatment, fuel analysis, Manufacturing of engineering materials and corrosion protection methods	**3**	-	-	-	-	-	-	-	-	-	-	-	-	-	-

			CO4	Prepare the generic drugs or medicines by identifying the applications of organic reaction mechanism and manufacturing of engineering materials	-	**2**	-	-	-	-	-	-	-	-	-	-	-	-	-
					2	**2**	-	-	-	-	-	-	-	-	-	-	-	-	-
3	2FY1-04	Communicatio n Skills	CO1	Describe the process of communication, basics of Grammar and Writing and Literary Aspects	-	-	-	-	-	-	-	-	-	**1**	-	-	-	-	-
			CO2	Explain the types of communication, barriers and channels of communication and the concept of Literature through Short Stories and poetry		-	-	-	-	-	-	-	-	**2**	-	-	-	-	-
			CO3	Write and prepare professional reports, paragraph and business letters with the correct use of grammar	-	-	-	-	-	-	-	-	-	**3**	-	-	-	-	-
			CO4	Discuss and illustrate the impact of social and moral values by implying the basics of English Writing Skills through literary aspects	-	-	-	-	-	-	-	**2**	-	-	-	-	-	-	-
			CO5	Restate and outline the basic areas of English Language Skills with the applications of literature	-	-	-	-	-	-	-	-	-	-	-	**2**	-	-	-
					-	-	-	-	-	-	-	**2**	-	**2**	-	**2**	-	-	-
4	2FY3-07	Basic Mechanical Engineering	CO1	Students will be able to retrieve basic concepts of thermal and manufacturing process.	**1**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO2	Students will able to compare different types of thermal and manufacturing processes and.	**2**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO3	Students will able to annotating about the functioning of turbine & pumps, IC engines, refrigeration system, modes of transmission of power, materials and primary manufacturing process.	**3**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO4	Student will be able to appraise the fundamental knowledge of thermal engineering, in addition to understanding of power transmission to solve the industrial and societal issues.	-	**1**	-	-	-	-	-	-	-	-	-	-	-	-	-
					2	**1**	-	-	-	-	-	-	-	-	-	-	-	-	-
5	2FY3-08	Basic Electrical Engineering	CO1	Identify basic components of electrical engineering and connect them to form different circuits to verify basic laws.Understanding	**3**	-	-	-	-	-	-	-	-	-	-	-	-	-	-

			CO2	Analyse the output of rectifier circuit,AC and DC machines to solve problems assosciated with Basic electrical engineering.Analyse	**2**	**3**	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO3	Contribute efficiently in a team to acieve desired response of AC and DC Machines. Team Work	-	-	-	-	-	-	-	-	**3**	-	-	-	-	-	-
			CO4	Demonstrate the output of rectifier circuits consistiong of basic components of electrical engineering. Mechanism	-	-	-	-	-	-	-	-	-	-	**3**	-	-	-	-
					2.5	**3**	-	-	-	-	-	-	**3**	-	**3**	-	-	-	-
6	2FY2-21	Engineering Chemistry Lab	CO1	Determine the strength of unknown solution by volumetric analysis.	**1**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO2	Examine the characteristics of lubricating oil in groups	-	-	-	-	-	-	-	-	**2**	-	-	-	-	-	-
			CO3	Analyze different characteristics of water and fuel to solve societal and enviornmental problems	-	-	-	-	-	-	**2**	-	-	-	-	-	-	-	-
			CO4	Students will show an ability to work as a team member ethically	-	-	-	-	-	-	-	**2**	**3**	-	-	-	-	-	-
					1	-	-	-	-	-	**2**	**2**	**2.5**	-	-	-	-	-	-
7	2FY1-22	Language Lab	CO1	Use and pronounce the words correctly.	-	-	-	-	-	-	-	-	-	**1**	-	-	-	-	-
			CO2	Acquire knowledge of the correct expressions,vocabulary etc. in personal and professional lives.	-	-	-	-	-	-	-	-	-	**2**	-	-	-	-	-
			CO3	Plan successfully for leadership and teamwork,crack GD's, interviews and other professional activities.	-	-	-	-	-	-	-	-	**2**	-	-	-	-	-	-
			CO4	Synthesize the process of communication using LSRW.	-	-	-	-	-	-	-	-	-	**3**	-	-	-	-	-
					-	-	-	-	-	-	-	-	**2**	**2**	-	-	-	-	-
8	2FY3-25	Manufacturing Practices Workshop	CO1	Describe the working of Lathe machine.	**1**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO2	Apply the basic concepts of Foundry Shop	**2**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO3	Develop various carpentry joints, welding joints and sheet metal objects.	-	**2**	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO4	Students will show an ability to work as a team member ethically	-	-	-	-	-	-	-	**2**	**3**	-	-	-	-	-	-
					1.5	**2**	-	-	-	-	-	**2**	**3**	-	-	-	-	-	-
9	2FY3-26	Basic Electrical Engineering	CO1	Discuss measurement of electrical quantites	**1**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO2	Compare different connections of	**2**	-	-	-	-	-	-	-	-	-	-	-	-	-	-

		Lab		transformer															
			CO3	Demonstrate constructional features of electrical machines and converters	**3**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO4	Students will show an ability to communicate effectively and work as a team member ethically	-	-	-	-	-	-	-	**2**	**3**	**2**	-	-	-	-	-
					2	-	-	-	-	-	-	**2**	**3**	**2**	-	-	-	-	-
10	2FY3-29	Computer Aided Machine Drawing	CO1	Describe orthographic projections and basic Geometrical Concept	**2**	-	-	-	-		-	-	-	-	-	-	-	-	-
			CO2	Analyze Sectional Views of different mechanical Components and assembly drawing	-	**1**	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO3	Draft a engineering product using CAD software	-	-	-	-	**2**	-	-	-	-	-	-	-	-	-	-
			CO4	Students will show an ability to work as a team member ethically	-	-	-	-	-	-	-	**2**	**3**	-	-	-	-	-	-
					2	**1**	-	-	**2**	-	-	**2**	**3**	-	-	-	-	-	-
11	4CE2-01	Advance Engineering Mathematics-II	CO 1	Define probability models using probability mass (density) functions and concept of variance and sampling distribution.	**1**												**1**		
			CO 2	Classify the probability distributions of discrete and continuous random variables, Mathematical expectation and moments.	**2**												**1**	**1**	
			CO 3	Apply discrete and continuous distribution such as binomial, Poisson, uniform, exponential, normal distribution and their statistical measures to various problems and the curve fitting methods of linear and non-linear forms to analyze the data.	**3**												**1**	**2**	
			CO 4	Examine the concept of the Test of significance on sampling and the behavior of the sample mean.		**2**											**1**	**2**	
			CO 5	Evaluate the correlation between two variables and use regression analysis applications for purposes of description and prediction.		**3**											1	**2**	**1**

12	4CE1-03	Managerial Economics & Financial	CO 1	Conceptual Mastery: Students will demonstrate a comprehensive understanding of fundamental economic concepts and financial accounting principles, allowing them to analyze and interpret economic and financial data effectively.	3	-	-	-	-	-	-	2	-	-	-	-	1	-	-
			CO 2	Application Proficiency: Upon completion of the course, students will be able to apply economic theories to analyze and solve managerial problems specific to engineering projects, showcasing the practical application of economic principles in real-world scenarios	-	3	-	-	-	-	-	-	-	2	-	-	-	-	-
			CO 3	Decision Impact Assessment: Students will be equipped to critically evaluate the impact of economic factors on managerial decision-making in the engineering and technology domain. They will analyze the implications of economic trends and policies on strategic decisions within an organizational context	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-
			CO 4	Strategic Resource Management: Upon successful completion of the course, students will be capable of developing strategies for optimizing resource allocation and cost management in engineering projects. This involves synthesizing economic and financial principles to formulate effective managerial strategies for project success	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-
13	4CE3-04	Basic Electronics for Civil Engineering Applications	CO 1	Learn the fundamentals of digital electronics	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO 2	Characterize the semiconductors, diodes and bipolar junction transistors	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO 3	Analyze the characteristics of different types of transducers & sensors	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO 4	Understand the working of various instruments and measure the error	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO 5	Understand the concept and processing of digital images	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-

14	4CE4-05	Strength of Materials	CO 1	Understand the basic concepts of the stresses and strains for different materials and strength of structural elements	3	-	-	-	-	-	-	-	-	-	-	-	2	-	-
			CO 2	Apply concepts of internal forces and resistance mechanism for one dimensional and two dimensional structural elements.	2	-	-	-	-	-	-	-	-	-	-	-	-	2	-
			CO 3	Identify and formulate complex engineering problems for different international forces, stresses, principal stresses and failure mechanisms in material.	-	2	-	-	-	-	-	-	-	-	-	-	-	3	-
			CO 4	Execute a solution process and result analysis of structural element of structural components considering criteria of slope, deflection, Mohr's circle etc.	-	2	-	-	-	-	-	-	-	-	-	-	-	-	2
15	4CE4-06	Hydraulics Engineering	CO 1	Understand the basic principles of dimensional analysis, turbulent and open channel flow, hydraulic machines, hydrology relevant to engineering problems.	3	-	-	-	-	-	-	-	-	-	-	-	3	-	-
			CO 2	Apply knowledge in design of efficient channel section, boundary layer theory and impact of free jet.	-	3	-	-	-	-	-	-	-	-	-	-	-	2	-
			CO 3	Analyze the dimensional, models, dynamics of open channel flow and access ground water processes for hydraulic conductivity and transmissivity.	-	2	-	-	-	-	-	-	-	-	-	-	-	3	-
			CO 4	Evaluate the characteristics of varied flow, flood hydrographs, and the design considerations for canal hydraulics.	-	3	-	-	-	-	-	-	-	-	-	-	-	2	-
16	4CE4-07	Building Planning	CO 1	Understand the fundamental principles, and concepts of building planning, sun path diagram, Building Bye Laws, NBC Regulations, Vaastu shastra and architecture for buildings.	2	-											3		
			CO 2	Apply various aspects of sun path diagram, climatic conditions, local building bye-laws, Vaastu shastra and provisions of National Building Code to prepare a building plan.	3	-											3		
			CO 3	Analyse sun path diagram, climatic conditions, local building bye-laws, Vaastu shastra and provisions of NBC for site selection, orientation and servisibility of buildings.	-	2												2	

			CO 4	Compare plans, elevation and sections of Residential and Non Residential Buildings on the basis of sun path diagram, climatic conditions, local building bye-laws, Vaastu shastra and provisions of NBC.	-	3												3		
17	4CE4-08	Concrete Technology	CO 1	Understand the basic concept of properties of cement, concrete and concrete mix such as strength, creep, shrinkage, bleeding, form work, ad mixtures etc.	2	-	-	-	-	-	-	-	-	-	-	-	2	-	-
			CO 2	Apply the concept of concrete technology to assess the properties and strength of concrete as per Indian Standards and nondestructive testing (NDT) methods.	3	-	-	-	-	-	-	-	-	-	-	-	-	2	-
			CO 3	Analyze the concrete mix properties such as durability, strength and mix design.	-	2	-	-	-	-	-	-	-	-	-	-	-	2	-
			CO 4	Investigate the concrete properties using tailored concrete mix design.	-	-	-	2	-	-	-	-	-	-	-	-	-	3	-
18	4CE4-21	Material Testing Lab	LO1	Gain insight into the physical and mechanical characteristics of structural materials.	3	-	-	-	-	-	-	-	-	-	-	-	2	-	-
			LO2	Utilize suitable mechanical testing methodologies to assess the strength properties and suitability of structural materials for construction applications.	2	-	-	-	-	-	-	-	-	-	-	-	-	2	-
			LO3	Evaluate the test outcomes to comprehend the mechanical properties of structural materials effectively.	-	2	-	-	-	-	-	-	-	-	-	-	-	3	-
			LO4	Substantiate the importance and assess the mechanical and physical characteristics of construction materials.	-	2	-	-	-	-	-	-	-	-	-	-	-	-	2
19	4CE4-22	Hydraulics Engineering Lab	LO1	Understand the theoretical foundations underlying the experiments, including the concepts of minor losses, friction factor and coefficient of discharge (Cd).	3	-	-	-	-	-	-	-	-	-	-	-	3	-	-
			LO2	Apply experimental methods to determine losses, discharge in pipes and momentum equation.	-	2	-	-	-	-	-	-	-	-	-	-	-	3	-

			LO3	Analyze the results obtained from practical techniques to measure the behaviour of fluid flow in an open channel.	-	3	-	-	-	-	-	-	-	-	-	-	-	2	-
			LO4	Demonstrate principles governing roughness coefficients in channel using tilting fume as a team member or leader.	-	-	-	-	-	-	-	-	3	-	-	-	-	-	2
20	4CE4-23	Building Drawing	LO1	Understand the concepts for preparation of working drawings and plan of residential buildings	2												2		
			LO2	Prepare working drawings for different plans of residential buildings.	3													2	
			LO3	Design and Prepare set of multi-layer architectural and working drawing for various types of buildings.		3													3
			LO4																
			LO5																
21	4CE4-24	ADVANCED SURVEYING LAB	LO1	Explain the instruments required for a particular surveying problem significance in Civil Engineering.	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			LO2	Apply surveying priciples to determining area, volume, angles & elevation in field.	3	-	-	-	-	-	-	-	-	-	-	-	-	2	-
			LO3	Analyze the surveying data and adjust the angles by surveying princples.	-	3	-	-	-	-	-	-	-	-	-	-	2	-	-
			LO4	Investigate topographical area and prepare the map by surveying instruments.	-	3	-	-	-	-	-	-	-	-	-	-		2	
			LO5	Evaluate map by digital instruments and Periodic field visits for solving real life problems in Civil Engineering.	-	-	3	-	-	-	-	-	-	-	-	2	-	-	-
			LO6	Demonstrate Plan using Total station,Levelling, Plane table & Theodolite surveying as a team member or leader.	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-
			LO7	Prepare computerized reports, presentations using modern surveying tools and computer application software.	-	-	-	-	3	-	-	-	-	-	-	-	-	-	2

22	4CE4-25	Concrete Lab	LO1	Determine the various physical properties of cement and aggregate like fineness & soundness, specific gravity, bulking of sand, Sieve analysis, flexural strength, workability, and permeability.	2	-	-	-	-	-	-	-	-	-	-	-	2	-	-
			LO2	Examine the physical test of coarse aggregate and fine aggregate.	3	-	-	-	-	-	-	-	-	-	-	-	2	-	-
			LO3	Analyze the results of dose of super plastsizers, strength of hardened concrete by using core cutter, rebound hammer and UPV.	-	3	-	-	-	-	-	-	-	-	-	-	-	2	-
			LO4	Evaluate the results with the provision of Indian Standards(IS)	-	-	3	-	-	-	-	-	-	-	-	-	-	3	-
			LO5	Investigate the tailored mix design properties as per IS Code.	-	-	-	3	-	-	-	-	-	-	-	-	-	-	2
23	6CE03-01	Wind & Seismic Analysis	CO 1	Explain the fundamental concept of shapes of structures, loadings, load flow concept and design loads.	2	-	-	-	-	-	-	-	-	-	-	-	3	-	-
			CO 2	Apply the construction techniques for earthquake resistant constructions for new and existing structures as per differents indian codal recommendations.	3	-	-	-	-	-	-	-	-	-	-	-	3	-	-
			CO 3	Analyze the scientific and technological principles of planning,Combination of loads, analysis of buildings according to earthquake design philosophy.	-	3	-	-	-	-	-	-	-	-	-	-	3	-	-
			CO 4	Examine the flat,pitched and Monoslope roof subject to wind load of building structure.	-	3	-	-	-	-	-	-	-	-	-	-	3	-	-
24	6CE4-02	Structural Analysis-II	CO 1	Understand the indeterminate and complex structures by using engineering fundamentals of strain energy, Castiglione's theorems Rolling load, Shear Centre, Unsymmetrical bending etc.	2	-	-	-	-	-	-	-	-	-	-	-	2	-	-
			CO 2	Apply the fundamental engineering concepts by using unit load method, influence line diagram, approximation method etc.	3	-	-	-	-	-	-	-	-	-	-	-	-	2	-
			CO 3	Analyze the stability of structures, variation of BM, SF and sway analysis of multistory frame.	-	2	-	-	-	-	-	-	-	-	-	-	-	2	-

			CO 4	Evaluate the variation of support reactions, shear force bending moment and deflection of structure and its component.	-	2	-	-	-	-	-	-	-	-	-	-	-	3	-
25	6CE4-03	Environmental Engineering	CO 1	Understand the sources , quality of water, principles of water treatment, characteristics of sewage and stormwater, the fundamentals of air composition and noise pollution, laying the groundwork for environmental engineering.	**3**	-	-	-	-	-	-	-	-	-	-	-	**1**	-	-
			CO 2	Apply design principles to water supply and treatment systems, sewage conveyance, emphasizing problem solving skills in environmental management and engineering solutions.	-	-	**3**	-	-	-	-	-	-	-	-	-	-	**2**	-
			CO 3	Analyze the components of water supply systems, effectiveness of water treatment processes, wastewater treatment systems, and air quality monitoring	-	-	-	**2**	-	-	-	-	-	-	-	-	-	-	**1**
			CO 4	Evalute the efficiency along with environmental impact of water supply and treatment schemes, sewage disposal methods, and air - noise pollution control measures, focusing on compliance with IS & WHO standards.	-	-	-	-	-	-	**2**	-	-	-	-	-	-	-	**2**
26	6CE4-04	Design of Steel Structures	CO 1	Explain the fundamental concept of structural steel, plastic analysis, basic steel structure elements, plate girder, gantry girder, roof trusses & truss girder bridges.	2	-	-	-	-	-	-	-	-	-	-	-	1	-	-
			CO 2	Apply the concept of mechanism method, shape factor, connection types, basic steel structure elements, plate girder, gantry girder & roof trusses in steel structures.	2	-	-	-	-	-	-	-	-	-	-	-	2	-	-
			CO 3	Analyze the basic steel structural members, plate girder, gantry girder & roof trusses as per the concept of Indian Standard.	-	2	-	-	-	-	-	-	-	-	-	-	-	2	-

			CO 4	Design the basic steel structural members, plate girder, gantry girder & roof trusses for available site conditions as per the concept of Indian Standard.	-	-	3	-	-	-	-	-	-	-	-	-	-	-	3	-
27	6CE4-05	Estimating and Costing	CO 1	Understand the concepts of quantity surveying and various types of estimates, rate analysis & methods of valuation and its significance in Civil Engineering.	2	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-
			CO 2	Apply the current schedule of rates, specifications and methods of valuation in construction sector.	3	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-
			CO 3	Analyze the quantities and measurements of various types of civil engineering structures like building, roads,canals and culverts.	-	3	-	-	-	-	-	-	-	-	-	-	-	2	-	-
			CO 4	Distinguish the different types of estimates and methods of valuation for various types of civil engineering structures.	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	1
28	6CE5-12	Solid and Hazardous Waste Management	CO 1	Understand the basic principles of management, collection, characterization, processing and disposal relevant to solid waste.	3	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-
			CO 2	Apply latest advancement and rules on plastic and E-waste products.	-	2	-	-	-	-	-	-	-	-	-	-	-	-	2	-
			CO 3	Analyze efficient techniques to treat hazardous, radioactive and biomedical wastes.	-	3	-	-	-	-	-	-	-	-	-	-	-	-	2	-
			CO 4	Investigate various treatment methods to resolve the issue of solid waste.	-	2	-	-	-	-	-	-	-	-	-	-	-	-	3	-
29	6CE5-13	Traffic Engineering & Management	CO 1	Explain the fundamentals of traffic engineering and its features, elements of highway safety and approaches to accident Studies.	3	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-

			CO 2	Apply the concept of planning, designing and management in traffic engineering.	2	-	-	-	-	-	-	-	-	-	-	-	2	-	-
			CO 3	Analyze various traffic characteristics for safety purpose on highway engineering.	-	3	-	-	-	-	-	-	-	-	-	-	-	-	1
			CO 4	Evaluate traffic data to find multiple solutions of complex traffic problems.	-	-	2		-	-	-	-	-	-	-	-	-	-	2
30	6CE5-15	Rock Engineering	CO 1	Describe the basic concept of rock engineering and its mass classification systems	2	-	-	-	-	-	-	-	-	-	-	-	2	-	-
			CO 2	Apply methods for in situ investigation and laboratory testing of rock matrix and discontinuities.	3	-	-	-	-	-	-	-	-	-	-	-	3	-	-
			CO 3	Differentiate the characteristics and the mechanical properties (strength and failure criteria) of rock mass, rock matrix and discontinuities.	-	3	-	-	-	-	-	-	-	-	-	-	3	-	-
			CO 4	Analyse the stress distribution (isotropic, anisotropic) in situ and around an opening in rock (competent rock, jointed rock mass, blocky rock)	-	3	-	-	-	-	-	-	-	-	-	-	3	-	-
31	6CE5-16	GIS & Remote Sensing	CO 1	Discuss the basic concepts of remote sensing and GIS	2															
			CO 2	Demonstrate the knowledge of remote sensing and GIS	3															
			CO 3	Implement the Remote sensing and GIS methods in different field such as Urban, Agriculture, water resource etc.		2														
			CO 4	Analyze the photogrammetry, remote sensing and GIS technology and its processes.		3														
32	6CE4-21	Environmental Engineering Design and Lab	LO1	Understand the basics of population forecasting, water demand, water quality parameters, the principles behind the design of water and sewage treatment components, setting a solid foundation for environmental engineering design skills.	3	-	-	-	-	-	-	-	-	-	-	-	2	-	-

			LO2	Apply knowledge to design sedimentation tanks, coagulation - flocculation tanks, rapid - slow sand filters, disinfection units, transmission systems, sewer lines, storm water systems, aerobic - anaerobic treatment units, integrating sustainability and efficiency into engineering solutions.	-	-	**3**	-	-	-	-	-	-	-	-	-	-	-	**2**	-
			LO3	Analyze laboratory tests for physical , chemical characterization of water, including turbidity, electrical conductivity, pH, analysis of solids content, alkalinity , hardness, optimum coagulant dose, COD, DO, BOD, breakpoint chlorination, and bacteriological quality, applying these analyses to assess and improve water treatment processes.	-	-	-	**3**	-	-	-	-	-	-	-	-	-	-	-	**2**
			LO4	Evaluate the effectiveness of Laboratory analysis results, ensuring compliance with environmental standards IS and WHO and sustainability practices.	-	-	-	-	-	-	**3**	-	-	-	-	-	-	-	-	**3**
33	6CE4-22	Steel structures design lab	LO1	Explain the fundamental concept of structural steel, plastic analysis, basic steel structure elements, plate girder, gantry girder, roof trusses & truss girder bridges.	2	-	-	-	-	-	-	-	-	-	-	-	2	-	-
			LO2	Apply the concept of mechanism method, shape factor, connection types, basic steel structure elements, plate girder, gantry girder & roof trusses in steel structures.	-	2	-	-	-	-	-	-	-	-	-	-	3	-	-
			LO3	Analyze the basic steel structural members, plate girder, gantry girder, roof trusses and case studies on steel structures as per the concept of Indian Standard.	-	2	-	-	-	-	-	-	-	-	-	-	-	2	-
			LO4	Design the basic steel structural members, plate girder, gantry girder, roof trusses for available site conditions as per the concept of Indian Standard.	-	-	3	-	-	-	-	-	-	-	-	-	-	3	-

34	6CE4-23	QUANTITY SURVEYING AND COSTING	LO1	Understand the concept of preliminary estimates,detailed estimates, rate analysis & valuation by various methods for construction site.	2	-	-	-	-	-	-	-	-	-	-	-	-	2	-
			LO2	Apply the use of current schedule of rates & quantitative resource allocation for the detailed estimates, rate analysis & methods of valuation used in civil engineering structures.	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			LO3	Differentiate the rate and specification of material for building,canals and road construction.	-	3	-	-	-	-	-	-	-	-	-	-	2	-	-
			LO4	Evaluate specifications of earth work for buildngs, road, canals and channels in Civil engineering works.	-	-	3	-	-	-	-	-	-	-	-	-	-	2	-
35	6CE4-24	Water and Earth Retaining Structure design lab	LO1	Understand the basic concept of beams, domes, towers and walls.	3	-	-	-	-	-	-	-	-	-	-	-	3	-	-
			LO2	Apply design of beams, domes and retaining walls through different loading conditions.	-	3	-	-	-	-	-	-	-	-	-	-	-	3	-
			LO3	Analyze the practical approach to measure the behaviour of beams, domes, tanks and retaining walls.	-	2	-	-	-	-	-	-	-	-	-	-	-	3	-
			LO4	Evaluate structural behaviour through site visits for solving real life problems in civil engineering.	-	-	-	-	-	-	-	-	-	-	-	2	-	-	2
36	6CE4-25	Foundation Design	LO1	Understand the fundamentals principles of shallow and deep foundations, machine foundation, retaining walls and safety and serviceability.	2												2		
			LO2	Apply the codal provisions to provide the safety and serviceability of structural foundations and retaining walls	3	-											3		
			LO3	Analyze the shallow and deep foundations, machine foundations and retaining walls for safety and serviceability		3	-											3	
			LO4	Demonstrate an ability to find an optimal design of the foundations and retainig wall as per I.S. Code recommendations for safety and serviceability of structure.			2												2

37	8CE4-01	Project Planning and Construction Management	CO 1	Understand the objectives, stages, categories of construction project, project management, basic principles of project planning, financial aspects of project management and contract management.	2	-	-	-	-	-	-	-	-	-	-	-	2	-	-
			CO 2	Evaluate the different project schedule, project management techniques, and financial aspects of project management, contract, and safety management.	-	-	-	-	-	-	-	-	-	-	2	-	2	-	-
			CO 3	Analyze the optimum duration of a project, optimum cost of the project, project networks, resources allocation and safety management.	-	-	-	-	-	-	-	-	-	-	3	-	3	-	-
			CO 4	Develop the critical path, material scheduling, tender and contract document for a project.	-	-	-	-	-	-	-	-	-	-	3	-	3	-	-
38	8CE60.1	Composite Material	CO 1	Explain the basics of composites, its structure and its properties like metal matrix, polymer matrix and ceramic matrix composites, Fibers Matric.	2	-	-	-	-	-	-	-	-	-	-	-	2	-	-
			CO 2	Discuss micromechanics, macro-mechanics properties like volume fraction, weight fraction, density of composites longitudinal elastic properties, Transverse elastic properties.	3	-	-	-	-	-	-	-	-	-	-	-	-	2	-
			CO 3	Analyze engineering properties of composite materials, elastic behavior of composite Lamina-Macro-mechanics.	-	2	-	-	-	-	-	-	-	-	-	-	-	2	-
			CO 4	Evaluate testing of composites like Mechanical testing of composites, Tensile testing, Compressive testing, Intra-Laminar shear testing, Fracture testing, failure, and maintenance.	-	2	-	-	-	-	-	-	-	-	-	-	-	-	2
39	8CE60.2	Fire and Safety Engineering	CO 1	Understand the basics of fire engineering including fire types, causes, detection, prevention, and the use of initial firefighting and first aid methods.	**3**	-	-	-	-	-	-	-	-	-	-	-	**2**	-	-

			CO 2	Apply fixed firefighting systems, utilizing water-based and non-water-based technologies, and operate firefighting equipment effectively.	2	-	-	-	-	-	-	-	-	-	-	-	-	**3**	-
			CO 3	Analyze the characteristics and handling of hazardous materials, assess fire-resistant construction, and appraise fire safety design elements.	-	-	-	**2**	-	-	-	-	-	-	-	-	-	-	**2**
			CO 4	Evalute fire safety designs in buildings for compliance with safety norms and standards, and evaluate legislative adherence for fire safety management.	-	-	-	-	-	**3**		-	-	-	-	-	-	-	**3**
40	8CE4-21	PPCM LAB	LO1	Understand the capital budgeting, contracts, tenders and related terms, arbitration, bar diagrams, PERT and CPM, PPP model.	2	-	-										2		
			LO2	Apply the concepts of capital budgeting, estimation and costing, tender documents, PPP models and network analysis to access and timely execute a project.	-	2	-										3		
			LO3	Analyze the tender document, optimum duration and cost of a project, project networks and resources allocation to complete the project efficiently.	-	3	-											2	
			LO4	Development of tender documents, scheduling, resource allocation and budgeting of a project to provide solution to complex/open-ended problem.	-	-	3											3	
41	8CE4-22	PAVEMENT DESIGN LAB	LO1	Understand the basic concepts of rural roads, pavements and its types.	-	-	-	-	-	-	-	-	2	2	-	-	2	-	-
			LO2	Analyzes the rural road, flexible and rigid pavements as per IRC.	-	2	-	-	-	-	-	-	2	2	-	-	3	-	-
			LO3	Design the flexible and rigid pavements as per IRC.	-	-	2	-	-	-	-	-	2	2	-	-	-	3	-
42	8CE7-50	Project	LO1	Team work to select an engineering problem and its solution	2	2	-	-	-	3	-	3	—	—	-	-	1	1	2
			LO2	Formulate the problem and design using modern technologies and new software learning	1	—	-	-	-	-	-	3	3	3	-	-	2	-	1
			LO3	Develop the engineering solutions by considering society and environment	2	—	-	-	-	-	-	2	3	3	-	-	1	-	-

			LO4	Applying solution considering societal, health, safety, legal and cultural issues	2	1	-	-	-	-	-	-	2	2	-	-	1	-	-
			LO5	Analysis and explanation of data to provide the valid conclusions.	2	—	-	-	-	1	-	-	2	2	-	-	2	-	-
			LO6	Use of management principles in project functioning and consider the multidisciplinary environments.	-	-	-	-	-	-	-	-	-	-	3	2	-	1	2
			LO7	To work effectively in Project as an individual member and team by following the ethical principles	-	-	-	-	-	-	-	3	3	—	—	—	-	-	1
			LO8	Communicate effectively for various activities with help of reports, presentations and verbal communication that can help in life-long learning.	-	-	-	-	-	-	-	—	—	3	—	2	-	-	2
					1.8	**1**	**-**	**-**	**-**	**1**	**-**	**2.7**	**2.6**	**2.6**	**3**	**2**	**1.5**	**1**	**1.5**

11 Course File Sample

Outcome Based Process Implementation Guidelines for Faculty

11.1 Labelling your course file

- **Name of faculty:**
- **Class- SEM:**
- **Branch:**
- **Course Code:**
- **Course Name:**
- **Session:**

11.2 List of Documents:

1. **Vision & Mission Statements of the Institute**
2. **Vision & Mission Statements of the Department**
3. **List of PEO, PSO and PO of department**
4. **Personal Time Table**
5. **RTU Syllabus**
6. **Document as per point no. 1-4 in guidelines**
7. **Course Plan**
8. **Document as per point no6-12 in guidelines**
9. **Document for CO AssessmentStage1: As per point no13, upto13.2.5**
10. **Document for CO AssessmentStage2: As per point no13, upto13.2.5, with comparison to previous**
11. **Document for CO AssessmentStage3: As per point no13, upto13.2.5, with comparison to previous**
12. **Document for CO Attainment through RTU Component: Previous RTU Result: point no. 13.3 upto13.3.2**
13. **Document for PO attainment through RTU Component: Previous RTU Result: point no. 13.4 upto13.4.2**
14. **Document for Overall Attainment of PO through CO:As per point no13.5**
15. **Document for last three years(Repeatprocessfrom6-14 above): Comparative data should be included in course file**
16. **Lecture Notes**
17. **Copy of Assignments questions given from time to time**
18. **Copy of Tutorial Sheets given (if applicable)**
19. **RTU Question Papers with answer**
20. **Internal Assessment Question Papers with answer from time to time**
21. **Topics covered beyond syllabus-References**
22. **Details of any other activity and its assessment through rubric be included**
23. **Mapping department level/focus activities with your COs**

12 Outcome Based Process Implementation Guidelines for Faculty

Course CO-PO, Preparation, Assessment Formats

Academic Session: 2021-2022 **Class:** **Semester:**

Name of the Faculty:

Subject: **Subject Code:**

This document is meant as guidelines for implementing Outcome based education system as a part of NBA process.

1. **Vision & Mission of Department: Statement and Mapping with Institute Mission** **Here you have to include department mission & vision statements and show mapping of keywords with institute mission.**
2. **Program Educational Objectives (PEOs): Statement and Mapping with Department Vision & Mission**
   Here you have to include department PEO statements and show mapping of keywords with department vision & mission.
3. **Program Specific Outcome (PSOs): Statement and Mapping with Department Vision & Mission**
   Here you have to include department PSO statements and show mapping of key words with department vision & mission.
4. **Program Outcome (POs): Statement and Mapping with PEO and PSO**
   Here you have to include PO statements and show mapping of keywords with department PEOs & PSOs.
5. **Course Plan (Deployment):**

(Please write how you intend to cover the contents :i.e., coverage of Units by lectures, guest lectures, design exercises, solving numerical problems, demonstration of models, model preparation, or by assignments, etc.), **for example**

O **coverage of Units by lectures**
O **design exercises**
O **demonstration of models**
O **by assignments**

Lecture No.	Lect. No.	Topics,Problems, Applications	CO/LO	TargetDateof Coverage	ActualDate ofCoverage	Ref. Book/Journal withPageNo.
1.	1	Introduction of OS	CO1	12/07/2019	12/07/2019	T1 Page121-126
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						
10.						
11.						
12.						

ExampleT1: Engineering Geology, By Parbin Singh, Kataria & Sons, Edition 2016

6. **Course Outcomes:** Look for strong mapping of course with specific PO (2-3). Define Generic Course Outcomes (max4to6) using Blooms Taxonomy.(In case of Lab Course define generic Lab Outcomes LO and refer CO as LO in this document).

i. **3CEA101.1(CO1)-**
ii. **3CEA101.2(CO2)-**
iii. **3CEA101.3(CO3)-**
iv. **3CEA101.4(CO4)-**
v. **3CEA101.5(CO5)-**

7. **CO-PO-PSO Mapping: Mapping Levels: 1- Low, 2- Moderate, 3-Strong**
   First try to find out 2-3 PO those are strongly related to your subject contents. Go through the contents and try to formulate4-5CourseOutcomeasperbloom taxonomy. Map each CO with PO and PSO as above. While mapping please rethink if you map any PO with3, it means you are planning to deliver the contents of that level and you will also examine the students at that level.

CO	PO												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1															
CO2															
CO3															
CO4															
CO5															

7.1 PO Strongly Mapped: (Example):
O PO2: Write full statement with keywords highlighted oPO3: Write full statement with keywords highlighted oPO4: Write full statement with keywords highlighted

7.2 PO Moderately Mapped: (Example)
O PO1: Write full statement with keywords highlighted
O PO11: Write full statement with keywords highlighted
7.3 PO Low Mapped: (Example)
O PO12: Write full statement with keywords highlighted

7.4 PSO Strongly Mapped: (Example)
O PSO1: Write full statement with keywords highlighted

7.5 P S O Moderately Mapped: (Example)
O PSO2: Write full statement with keywords highlighted

6.6 PSO Low Mapped: (Example)
O PSO3: Write full statement with keywords highlighted

8. **Rules for CO/LO Attainment Levels: (Targets)**

All the courses of your department should be divided into three categories A-Most Difficult course, B-Medium level of Difficulty, C-Low level of Difficulty–(Easy)
According to difficulty level, you can decide specific range for CO attainment targets for Continuous assessment from the following table.
Remember that targets for internal assessment should be higher.

Course Category	Level3	Level2	Level1
A	**60% of students getting >60% marks**	**50-60% of students getting >60% marks**	**40-50% of students getting >60% marks**
B	**80% of students getting >60% marks**	**60-80% of students getting >60% marks**	**40-60% of students getting >60% marks**
C	**90% of students getting >60% marks**	**70-90% of students getting >60% marks**	**40-70% of students getting >60% marks**

9. End Term RTU Component: CO Attainment Levels

All the courses of your department should be divided into three categories A-Most Difficult course, B-Medium level of Difficulty, C-Low level of Difficulty–(Easy)
According to difficulty level and the results of past 3-5 years, you can decide specific range for CO attainment targets for RTU component from the following table.

Course Category	Level3	Level2	Level1
A	**50% of students getting >60% marks**	**40-50% of students getting >60% marks**	**30-40% of students getting >60% marks**
B	**60% of students getting >60% marks**	**40-60% of students getting >60% marks**	**30-40% of students getting >60% marks**
C	**80% of students getting >60% marks**	**60-80% of students getting >60% marks**	**40-60% of students getting >60% marks**

For the specific CO/LO attainment levels of your respective course please use the above tables as reference according your subject difficulty level and prepare following table.

S. No.	Course Type	Attainment Level=1	Attainment Level=2	Attainment Level=3
1	**Theory Courses** Mid Semester Exams			
2	**Theory Courses** University Exam			
4	**Practical Courses** –Internal Exams			
5	**Practical Courses** -University Exam			
6	**Assignments/Unit Test**			
7.	**Any other**			

10. CO wise Assessment Activities (as Mentioned in Session Plan):
You can plan for each CO, activities/assessment tools to be conducted/used for its achievement.
Use X to those you select for specific CO. Remove all unused columns.

	Activities															
CO	**Pre Mid I Test**	**Post MidI Test**	**Quiz1**	**Quiz 2**	**Pre Mid II Test**	**Post MidII Test**	**Assignment1**	**Assignment2**	**Workshop**	**Seminar**	**Project**	**Training**	**Discussion**	**Mid1**	**Mid2**	**Ind. visit**
CO1																
CO2																
CO3																
CO4																
CO5																
CO6																

In case of Lab course some activities are as follows:

LO	Internal Practical exams	Laboratory Tests	Viva	Records	Project Presentation	Project Evaluation	External practical exams
LO1							
LO2							
LO3							
LO4							

11. CO wise Assessment Activities:

Based on CO-PO mapping, determine targets for each CO as average of targets of all relevant POs.

CO	PO												Avg.	PSO		
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**CO Targets**	**PSO1**	**PSO2**	**PSO3**
CO1																
CO2																
CO3																
CO4																
CO5																

12. Activity wise Assessment Tools:

This gives you generalized view of different direct and indirect tools those can be used for assessment /achievement of CO/PO. (Decide which tools are required forassessing a particular CO/LO and in reference to Course A, B, C difficulty level).

Sr. No.	Activity	Assessment Method	Tools	Weightage Marks	Recommendation
1.	Pre-MidTerm1	Direct	Marks	10	For CO
2.	Post-MidTerm1	Direct	Marks	10	For CO
3.	Quiz1	Direct	Marks	10	For CO
4.	Quiz2	Direct	Marks	10	For CO
5.	PreMidTerm2	Direct	Marks	10	For CO
6.	Post MidTerm2	Direct	Marks	10	For CO
7.	MidTerm1	Direct	Marks	20	For CO
8.	MidTerm2	Direct	Marks	20	For CO
9.	Assignment 1	Direct	Marks	10	For CO
10.	Assignment 2	Direct	Marks	10	For CO
11.	Workshop	Indirect	Rubrics	5	For LO
12.	Seminar/SPL	Indirect	Rubrics	5	For CO/LO
13.	Project (Minior NSP)	Indirect	Rubrics	20	For LO
14.	Discussion	Indirect	Rubrics	5	For LO
15.	Training	Indirect	Rubrics	20	For LO
16.	Industrial Visit	Indirect	Rubrics	20	For LO
17.	Or any other activity	Direct/ Indirect	Marks/ Rubrics	any	For LO
18.					
Note that for every rubrics you need to decide assessment criteria, range of marks or weightage–above values are indicative					

13. CO Assessment Process:

After every activity (Ideally as per above table): (Frequency of Assessment- Can be taken as monthly). So the assessment can be for all activities held during the month. Do the following.

13.1 Attainment of COs

13.1.1 AttainmentTableforCO1: 3CEA101.1

CO1:3CEA101.1: Attainment Table(Columns) As Applicable CO wise-Monthly									
Student	**Pre MidI Test 10**	**Quiz1 10**	**Assignment 10**	**Quiz1 10**	**WS 10**	**Training 10**	**Total (60)**	**%0f Marks**	**Level of Attainment**
Name1									**3**
Name2									**2**
Name3									**1**
Name4									**2**
Name5									**1**
Name6									**2**
----									**--**
------									**--**
	No. of Students attainedlevel3=					**%of Students AttainedLevel3=**			
	No. of Students attainedlevel2=					**%of Students AttainedLevel2=**			
	No. of Students attainedlevel1=					**%of Students AttainedLevel1=**			
	Target Achieved= ?(Check Level3%attainment-IfNoFindGap)								
	Mark X for absent-Take avg. of all present								

(Repeat it for all other COs, (CO2– CO5))

13.1.2CO-GapIdentifications

COs	CO1	CO2	CO3	CO4	CO5
Target					
Achieved					
Gap					

13.1.3 Gaps Identified:

Describe what the reasons for gaps are

i.

ii.

Overall CO Attainment Table: Example

Cos	CO1	CO2	CO3	CO4	CO5	Co6
Attainment level asper rules set	3	1	3	3	3	3
Average CO attainment through internal assessment	**2.67**					

13.1.4: Activities Decided to bridge the gap

Please do analyze whether you could get improvement through activities decided and conducted for improvements. Reason should be noted why /how it is improved or not.

13.2 Attainment of POs & PSO:

13.2.1 Target-Expected Attainment of PO by attainment of CO- Put all mappings of 3, 2 and1. Basedon CO-PO mapping, determine targets for each PO as average of targets of all relevant COs.

CO	PO												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
3CEA101.1															
3CEA101.2															
3CEA101.3															
3CEA101.4															
3CEA101.5															
Obtain Average-PO/PSO Targets	Targets	Targe Ts	Targ ets	Targ ets	Targ ets	Targe ts	Targ ets	Targ ets	Targe ts	Targe ts	Targe ts	Targe ts	Targe ts	Targets	Targe ts

13.2.2 Attainment of POs & PSO through CO as Continuous Evaluation:

Put all attainment values of CO as per mappings with 3, 2, 1 as evaluated in 13.1.1 (Frequency- Monthly)

CO	PO												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
3CEA101.1															
3CEA101.2															
3CEA101.3															
3CEA101.4															
3CEA101.5															
Obtain Avg. PO/PSO Attainment	Achiev Ed	Achie ved	Achi eved	Achi eved	Achi eved	Achie ved	Achi eved	Achi eved	Achie ved	Achie ved	Achie ved	Achie ved	Achie ved	Achiev ed	Achie ved

13.2.3 PO Gap Identification:

	PO												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Targets															
Achieved															
Gap															

13.2.4 Gaps Identified:

Describe what the reasons for gap (for PO) are.

i.
ii.

13.2.5 Activities Decided to bridge the gap

Please do analyze whether you could get improvement through activities decided and conducted for improvements. Reason should be noted why /how it is improved or not.

Repeat whole process after one month, Two months, and three months. Plot bar chart for improvement in CO, PO & PSO. (Every month)

13.3 Attainment of CO through RTU Exam:

This may be possible for previous semester results so overall attainment. If faculty is changed, data will be evaluated by concerned faculty who taught and handed over to current faculty. If faculty not available, then current faculty will do the same.

Attainment of CO: 3CSA101:Subject:			
Student	**RTU Marks (80)**	**%0f Marks**	**Level of Attainment**
Name1			**3**
Name2			**2**
Name3			**1**
Name4			**2**
Name5			**1**
Name6			**2**
----			**--**
------			**--**
No. of Students attained level 3=		**% of StudentsAttainedLevel3=**	
No. of Students attained level 2=		**% of StudentsAttainedLevel2=**	
No. of Students attained level 1=		**% of StudentsAttainedLevel1=**	
CO Attainment= ?(Check Level3%attainment-IfNoFindGap)			
Mark X for absent- Take avg. of all present			

13.3.1 Attainment of CO through RTU Component:

CO: Course Code: Course Name					
Target					
Achieved					
Gap					

13.3.1 Gaps for CO attainment through RTU Component:

Analyze RTU Question paper with respect toCOs formulated, contents delivered and students examined, find out reasons for gaps

i.

ii.

13.3.2 Action to be taken:

Prepare recommendations for improvement in planning & teaching for gaps identified.

13.4 Attainment of PO through CO (RTU) Component

Put RTU Results as per target achieved only and mapping level, in following table

Attainment of PO through CO(RTU) Component															
CO	**PO**												**PSO**		
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**	**PSO3**
3CEA101															

Attainment of PO through CO(RTU) Component															
3CEA101	**PO**												**PSO**		
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**	**PSO3**
Targets															
Achieved															
Gap															

13.4.1 Gaps in PO through CO from RTU component:

Analyze RTU Question paper with respect to COs formulated &mapped, contents delivered and students examined, findout reasons for gaps

Describe what are the reasons for gap

i.

ii.

13.4.2 Action to be taken:

Prepare recommendations for improvement in planning & teaching for gaps identified.

13.5 Overall Attainment of PO&PSO: Through Continuous Assessment &RTU

While combining attainment through Continuous evaluation and RTU component, following weightage be considered.

1. **Internal Assessment– Totalweightage-40%**
2. **RTU Component------- Weightage– 60 %**

Put all attainments in the following table and compute.

13.5.1: Table1

	RTU Component			**Internal Assessment**				
Student	**RTU Marks (80)**	**%of Marks**	**60% Weightage X6/100 (A)**	**Overall CO (-----)**	**%of Marks**	**Weightage X4/100 (B)**	**Total (A+B)**	**Level of Attainment**
Name1								**3**
Name2								**2**
Name3								**1**
Name4								**2**
Name5								**1**
Name6								**2**
----								**--**
------								**--**
No.ofStudentsattainedlevel3=					**% of StudentsAttainedLevel3=**			
No.ofStudentsattainedlevel2=					**% of StudentsAttainedLevel2=**			
No.ofStudentsattainedlevel1=					**% of StudentsAttainedLevel1=**			
PO Attainment= ?(Check Level3%attainment-IfNoFindGap)								
Mark X for absent-Take avg. of all present								

OR

13.5.2: Table2

	RTU			**Internal CO1/Activity1 (Weightage%)**			**Internal CO2/Activity2 (Weightage%)**			**Internal CO3/Activity3 (Weightage%)**				
Student	**RTU Marks (80)**	**%0f Marks**	**60% Weightage X----- /100 A**	**Overall CO (-----)**	**%0f Marks**	**Weightage X-- /100 B**	**Overall CO (-----)**	**%0f Marks**	**Weightage X-- /100 C**	**Overall CO (-----)**	**%0f Marks**	**Weightage X--/100 D**	**Total (A+B+C+D)**	**Level of Attainment**
Name1														**3**
Name2														**2**
Name3														**1**
Name4														**2**
Name5														**1**
Name6														**2**
----														**--**
------														**--**

No. of Students attained level 3= Attained Level 3=	**%of Students**
No. of Students attained level 2= Attained Level2=	**% of Students**
No. of Students attained level1= StudentsAttainedLevel1=	**% of**
PO Attainment= ?(Check Level3%attainment-IfNoFindGap)	
Mark X for absent-Take avg. of all present	

13.5.3: Overall PO& PSO Attainment through Course:
Put Overall PO & PSO attainment as per mapping 3,2,1 above:

Attainment of Overall POforSession2018-2019															
CO	**PO**												**PSO**		
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**	**PSO3**
3CEA101															
PO Attainment															

13.5.4: Overall Gaps for Attainment of PO and PSO from the Course
Put Overall PO & PSO targets & attainment as per mapping 3,2,1 above:

Attainment &Gap of Overall PO Session----------															
3CEA101	**PO**												**PSO**		
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**	**PSO3**
Targets															
Achieved															
Gap															

13.5.5. Overall Gaps for Course taught:
Go through all gaps identified above and summarize. Describe what the reasons are.
i.
ii.

13.5.6 Action to be taken:
Prepare recommendations for improvement in planning & teaching (Internal & RTU) for gaps identified. Decide Activities to be conducted to bridge the gaps in COs.

Repeat whole process after One year before, Two year before, and three year before. Plot bar charts for Continuous improvements check in CO, PO&PSO. (Every Year).

13 File Formats

13.1 List of File Formats

i. Front Page of Course File
ii. ABC Analysis Format
iii. Blown-up Format
iv. Deployment Format
v. Zero Lecture Format
vi. Tutorial Format
vii. Assignment Format
viii. Lecture Note Format
ix. Mid Term Question Paper Format
x. Mid Term Practical Exam Format
xi. Evaluation Sheets Format
xii. Activity Report Format

13.2 Front Page of Course File

POORNIMA
COLLEGE OF ENGINEERING

TEACHING MANUAL

COURSE: _____

SEMESTER: _____

SUBJECT: _____

SUB. CODE: _____

CONTENT: PGC Syllabus, Blown-up, Deployment, Zero Lectures, Detailed lecture notes with cover page, Tutorial/Home-Assignment Sheets

_____

SESSION: 20___-___

NAME OF FACULTY: _____

DEPARTMENT: _____

CAMPUS: _____

13.3 ABC Analysis Format

POORNIMA
COLLEGE OF ENGINEERING

Affiliated to RTU, Kota • Approved by AICTE & UGC under 2(f) • NAAC A+ Accredited

POORNIMA COLLEGE OF ENGINEERING, JAIPUR

DEPARTMENT OF CIVIL ENGINEERING

Campus: Poornima College of Engineering **Class/Section: 4th** **Date: 24 Jan. 2024**

Course: B.Tech. **Year/ Section - A**

Name of Faculty: Balwan **Name of Subject: Project planning & construction management** **Code: 8CE4-01**

ABC Analysis

S.no.	Category A	Category B	Category C
1	Risk cost management, Stages and steps involved in project planning, Plan development process	Capital investment proposals, net present value, benefit cost ratio, internal rate of return	objectives of construction project management, main causes of project failure
2	Project work breakdown process, Project management techniques – CPM and PERT networks analysis	Importance of project scheduling, concept of precedence network analysis	Project work scheduling, duration estimate procedure
3	Time cost trade-off process: direct and indirect project costs, cost slope, updating of project networks	Monitoring the time progress and cost controlling measures in a construction project	Process of crashing of activities, resources allocation
4	Elements of tender operation, arbitration	Types of tenders and contracts	Contract document
5	Project Management Information System – Concept, frame work, benefits of computerized information system	Causes and prevention of accidents at construction sites	Demolition of structures, explosive handling

Textbook: Author- *Project planning & control, Dr. B.C.Punmia, Laxmi Publication*

Construction project management plan, K.K.Chitkara, Tata Mcgraw hills

Reference book: *Construction management machinery & accounts, B.L.Gupta & Amit Gupta,; Standard Publishers distributors, Construction project management, Neeraj Kumar Jha, Pearson Education*

13.4 Blown-up Format

POORNIMA COLLEGE OF ENGINEERING

BLOWN UP SYLLABUS

Campus: Poornima College of Engineering | **Class/Section: 4th** | **Date: 24 Jan. 2024**

Course: B.Tech. | **Year/ Section - A**

Name of Faculty: Balwan | **Name of Subject: Project planning & construction management** | **Code: 8CE4-01**

COURSE PLAN –BLOWN UP

S No.	TOPIC AS PER SYLLABUS	BLOWN UP TOPICS (up to 10 Times Syllabus)
1.	Zero Lecture	Objective, scope, and outcome of the course
2.	Financial Evaluation of Projects and Project Planning	Capital investment proposals, criteria to judge the worthwhile of capital projects viz. net present value, benefit cost ratio, internal rate of return, Risk cost management, main causes of project failure. Categories of construction projects, objectives, project development process, Functions of project management, Project management organization and staffing, Stages and steps involved in project planning, Plan development process, objectives of construction project management.
3.	Project Scheduling	Importance of project scheduling, project work breakdown process – determining activities involved, work breakdown structure, assessing activity duration, duration estimate procedure, Project work scheduling, Sequence of construction activities, Project management techniques – CPM and PERT networks analysis, concept of precedence network analysis.
4.	Project Cost & Time Control	Monitoring the time progress and cost controlling measures in a construction project, Time cost trade-off process: direct and indirect project costs, cost slope, Process of crashing of activities, determination of the optimum duration of a project, updating of project networks, resources allocation.
5.	Contract Management	Elements of tender operation, Types of tenders and contracts, Contract document, Legal aspects of

		contracts, Contract negotiation & award of work, breach of contract, determination of a contract, arbitration.
6.	Safety and other aspects of construction management	Safety measures to be followed in various construction works like excavation, demolition of structures, explosive handling, hot bitumen work. Project Management Information System – Concept, framework, benefits of computerized information system. Environmental and social aspects of various types of construction projects

13.5 Deployment Format

POORNIMA COLLEGE OF ENGINEERING

SYLLABUS DEPLOYMENT

Campus: Poornima College of Engineering | **Class/Section: 4th** | **Date: 24 Jan. 2024**

Course: B.Tech. | **Year/ Section - A**

Name of Faculty: Balwan | **Name of Subject: Project planning & construction management** | **Code: 8CE4-01**

S. No	Lecture No.	Topics, Problems, Applications	CO/LO	Target Date of Coverage	Actual Date of Coverage	Ref. Book/Journal with Page No.
1	1	Zero Lecture	CO1			T1 Pg. No.
2	2	Objective, scope and outcome of the course	CO1			T1 Pg. No.
3	3	Capital investment proposals, criterions to judge the worthwhile of capital projects	CO1			T1 Pg. No.
4	4	Net present value, benefit cost ratio, internal rate of return	CO1			T1 Pg. No.
5	5	Risk cost management, main causes of project failure	CO1			T1 Pg. No.
6	6	Categories of construction projects, objectives, project development process	CO1			T1 Pg. No.
7	7	Functions of project management, Project management organization and staffing	CO1			T1 Pg. No.

8	8	Stages and steps involved in project planning, Plan development process	CO1			T1 Pg. No.
9	9	Quiz	CO1			T1 Pg. No.
10	10	Objectives of construction project management, Importance of project scheduling, project work breakdown process	CO2			T1 Pg. No.
11	11	Determining activities involved, work breakdown structure, Assessing activity duration	CO2			T1 Pg. No.
12	12	Duration estimate procedure, Project work scheduling	CO2			T1 Pg. No.
13	13	Sequence of construction activities, Project management techniques	CO2			T1 Pg. No.
14	14	CPM networks analysis	CO2			T1 Pg. No.
15	15	PERT networks analysis	CO2			T1 Pg. No.
16	16	Class Test	CO2			T1 Pg. No.
17	17	Concept of precedence network analysis, Monitoring the time progress	CO3			T1 Pg. No.
18	18	Cost controlling measures in a construction project	CO3			T1 Pg. No.
19	19	Time cost trade-off process	CO3			T1 Pg. No.

20	20	Direct and indirect project costs, cost slope	CO3			T1 Pg. No.
21	21	Process of crashing of activities	CO3			T1 Pg. No.
22	22	determination of the optimum duration of a project	CO3			T1 Pg. No.
23	23	Updating of project networks, Resources allocation	CO3			T1 Pg. No.
24	24	Assignment-I	CO3			T1 Pg. No.
25	25	Elements of tender operation	CO4			T1 Pg. No.
26	26	Types of tenders	CO4			T1 Pg. No.
27	27	Types of contracts	CO4			T1 Pg. No.
28	28	Contract document, Legal aspects of contracts	CO4			T1 Pg. No.
29	29	Contract negotiation & award of work, breach of contract	CO4			T1 Pg. No.
30	30	Determination of a contract, arbitration	CO4			T1 Pg. No.
31	31	Safety measures to be followed in various construction works like excavation	CO5			T1 Pg. No.
32	32	Demolition of structures	CO5			T1 Pg. No.
33	33	Explosive handling, hot bitumen work	CO5			T1 Pg. No.
34	34	Project Management Information System – Concept	CO5			T1 Pg. No.

35	35	Frame work, benefits of computerized information system	CO5			T1 Pg. No.
36	36	Environmental and social aspects of various types of construction projects	CO5			T1 Pg. No.

13.6 Zero Lecture Format

POORNIMA
COLLEGE OF ENGINEERING

ZERO LECTURE

Session: 20 - (Sem.)

Campus: ……..…… Course: ……..…. Class/Section: ……..……

Name of Faculty: ……..

Zero Lecture

1). Name of Subject: …….. Code: ……

2). Self-Introduction:

a). Name:
b). Qualification:
c). Designation:
d). Research Area:
e). E-mail Id: ……@poornima.org
f). Other details: Information about areas of proficiency/ expertise such as subject taught, laboratory taken, Member of Professional body, Academic Proficiency, Book Authored, Paper published in National and International Conference/Journals etc.

3). Introduction of Students:

a*). Records of students in 12th*

Sr. No.	Average result of 12th	Name of student scored highest marks	Marks 60% above (No. of students)	Marks between 40%-60% (No. of students)	English Medium Students (No.)	Hindi Medium Students (No.)	No. of Hostellers	No. of Day Scholar

b*). Name of 05 best students based on previous results: ……, ……, ……, ……, ……*

4). Instructional Language: - ……%English; ……..% Hindi (English not less than 60%)

5). Introduction to subject: - (Pl. separate out subject specific matter and general matter valid for all subjects and group/place them appropriately)

a). Relevance to Branch:
b). Relevance to Society:
c). Relevance to Self:
d). Relation with laboratory:
e). Connection with previous year and next year:

6). Syllabus of Poornima Group of Colleges, Jaipur

a). Unit Name:
b). ABC analysis (RGB method) of unit & topics

7). Books/ Website/Journals & Handbooks/ Association & Institution:

a). Recommended Text & Reference Books and Websites:

S. No.	Title of Book	Authors	Publisher	Cost (Rs.)	No. of books in Library
Text Books					
T1					
T2					
T3					
Reference Books					
R1					
R2					
R3					
Websites related to subject					
1					
2					

b). Journals & Handbooks: - To give information about different Journals & Handbooks available in library related to the subject and branch.

c). Associations and Institutions: - To give information about different Associations and Institutions related to the subject and branch.

8). Syllabus Deployment: -

a). Total weeks available for academics (excluding holidays) as per Poornima Foundation calendar-

Semester	
No. of Working days available(Approx.)	
No. of Weeks (Approx.)	

- Total weeks available for special activities (as mentioned below)- 02 weeks (Approx.)

Note: Individual faculty must calculate the exact no. of lectures available according to time table etc. after consultation with HOD.

b). Special Activities (To be approved by HOD & Dean & must be mentioned in deployment):

- Open Book Test- Once in a semester
- Quiz - Once in a semester
- Special Lectures (SPL)- Minimum 10% of total no. of lectures including following
  - i. Smart Class by the faculty, who is teaching the subject
  - ii. SPL by expert faculty at PGC level
  - iii. SPL by expert from industry/academia (other institution)
- Revision classes (Solving Important Question Bank):- 1 class before Mid Term and 2 classes before End Term Exam

c). Lecture schedule per week

i). University scheme (L+T+P) = ...+....+.....

Sr. No.	Name of Unit	No. of lectures	Broad Area	Degree of difficulty (High/Medium/Low)	Text/ Reference books
1.					
2.					
3.					
4.					
5.					

d). Introduction & Conclusion: Each subject, unit and topic shall start with introduction & close with conclusion. In case of the subject, it is Zero lecture.

e). Time Distribution in lecture class: - Time allotted: 60 min.

i. First 5 min. should be utilized for paying attention towards students who were absent for last lecture or continuously absent for many days + taking attendance by calling the names of the students and also sharing any new/relevant information.

ii. Actual lecture delivery should be of 50 min.
iii. Last 5 min. should be utilized by recapping/ conclusion of the topic. Providing brief introduction of the coming up lecture and suggesting portion to read.
iv. After completion of any Unit/Chapter a short quiz should be organized.
v. During lecture student should be encouraged to ask questions.

Note: Pl. ensure that each student is having Lecture Note Book. Also, write on the black board day and date, name of the teacher, name of subject with code, unit and lecture no. and topics to be covered at the beginning of each lecture and ensure that students write in lecture note book. Ask students to leave 4/5 pages blank for copying the note from fellow students in case of their absenteeism.

9). Tutorial: - An essential component of Teaching- Learning process in Professional Education.

Objective: - To enhance the recall mechanism.
To promote logical reasoning and thinking of the students.
To interact personally to the students for improve numerical solving ability.

a). *Tutorial processing:* - Tutorial sheet shall be provided to each students

Ist Phase: - It is consisting of questions to be solved in the class assignment session in test mode on perforated sheet given in tutorial notebook and to be collected & kept by respective faculty for review & analysis (20 minutes).

IInd Phase: - Indicating/Initializing the weak issues/ drawback and Evaluating and providing the grade. Making a group with good student for assisting the weak students to explain/solve questions by every student on plain papers given in tutorial note book (20 minutes).

IIIrd Phase: - Solving/ explaining difficulties of lecture class and providing the new home assignment (20 minutes). To be done in tutorial note book.

b). *Home assignment shall comprise of two parts:*

Part (i) Minimum essential questions, which are to be solved and submitted by all with in specified due date.

Part (ii) Other important questions, which may also be solved and submitted for examining and guidance by teacher.

10). Examination Systems:

A. FOR ALL THEORY COURSES:-

a. Continuous Internal Evaluation (CIE)	**20%**
-Assignment / Project / Papers / Essays / Class Participation	10%
-Quiz / Class Test (Announced / Unannounced)	5%
- Attendance and Discipline	5%
b. Mid Semester Exams (MSE) – Two	**20%**
c. End Semester Exam (ESE) - One	**60%**
TOTAL	**100 %**

B. FOR ALL PRACTICAL (LABORATORY) COURSES:-

a. Continuous Internal Evaluation (CIE)	**40%**
-Performance (Lab Record, Viva,)	30%
-Attendance and Participation in laboratory work	10%
b. Mid Semester Exam (MSE)– Two	**20 %**
c. End Semester Exam (ESE) - One	**40%**
TOTAL	**100 %**

11). Any other important point:

Place & Date: Name of Faculty with Designation

13.7 Lecture Note Front page Format

POORNIMA
COLLEGE OF ENGINEERING

LECTURE NOTES

Campus: ……..…. Course: ……..…….... Class/Section: ……..…. Date: ……..……..

Name of Faculty: ……..…….. Name of Subject: ……..…… Code: ……..…..

Date (Prep.): ……..…….. Date (Del.): ……..……..Unit No.:……..…..…..Lect. No: ……..……..

OBJECTIVE: To be written before taking the lecture (Pl. write in bullet points the main topics/concepts etc., which will be taught in this lecture)

IMPORTANT & RELEVANT QUESTIONS:

FEED BACK QUESTIONS (AFTER 20 MINUTES):

OUTCOME OF THE DELIVERED LECTURE: To be written after taking the lecture (Pl. write in bullet points about students' feedback on this lecture, level of understanding of this lecture by students etc.)

REFERENCES: Text/Ref. Book with Page No. and relevant Internet Websites:

13.7.1 Detailed Lecture Note Format-1

POORNIMA
COLLEGE OF ENGINEERING

DETAILED LECTURE NOTES

Campus: …….	**Course: ……..**	**Class/Section: ……**	**Date: ……**
Name of Faculty: ……		**Name of Subject: ……**	**Code: ……**

13.7.2 Detailed Lecture Note Format-2

POORNIMA
COLLEGE OF ENGINEERING

DETAILED LECTURE NOTES

PAGE NO. .....

13.8 Assignment Format

POORNIMA
COLLEGE OF ENGINEERING

Campus: PCE Course: B.TECH	**Year /Semester:**	**Date:**
Name of Faculty: ABC	**Name of Lab: CONCRETE STRUCTURES DESIGN**	**Code:**

ASSIGNMENT-I

CO	PO	QUESTIONS	MARKS
CO1	PO1	Determine the values of design constant (k, j and R) and percentage of balanced steel for a beam of dimension b, and d. Use M20 concrete and Fe250 steel.	10
CO2	PO1	Determine the moment of resistance of a singly reinforced beam 160mm wide and 300 mm effective deep. The beam is reinforced with 4 bars of 12mm ø. Use M20 concrete and plane mild steel bars. Use m=18. Also find out the safe load inclusive of its own weight, which the beam can carry over effective span of 5 m.	10
CO3	PO2	A rectangular beam of 350 mm width and 400 mm effective depth is reinforced with 4-16mm ø tension bars. Determine the stress induced in the top compression fibre of the concrete and tension steel when it is subjected to a moment of40 kN-m. Consider M25 concrete.	10
CO5	PO3	A rectangular beam of width 350mm is subjected to U.D.L. of15 kN/m over an effective span of 8 m. Determine the depth required for the beam and also calculate the area of tensile reinforcement required. Use M20 concrete and Fe 250 steel.	10

13.9 Tutorial Format

POORNIMA
COLLEGE OF ENGINEERING

TUTORIAL SHEET

TUTORIAL SHEET SHEET No.....

Campus: ..... Course: ..... Class/Section: ..... Date: .....

Name of Faculty: ..... Name of Subject: ..... Code: .....

Date of Tut. Sheet Preparation:..... Scheduled Date of Tut.:.....Actual Date of Tut. :.....

Name of Student:.....Scheduled & Actual Date of H.A. Submission:.....&.....

	Questions	CO	PO
FIRST 20 MT. CLASS QUESTIONS			
2 HRS. SOLVABLE HOME ASSIGNMENT (H.A.) QUESTIONS			
OTHER IMPORTANT QUESTIONS			

13.10 Mid Term/ End Term Practical Question Paper Format

POORNIMA COLLEGE OF ENGINEERING, JAIPUR

IV B.TECH. (VIII Sem.) **Roll No. _____**

FIRST MID TERM EXAMINATION 2023-24

Code: 8CE4-01 Category: PCC Subject Name– Project Planning and Construction Management

(BRANCH – CIVIL ENGINEERING)

Course Credit: 03

Max. Time: 2 hrs. **Max. Marks: 60**

NOTE:- Read the guidelines given with each part carefully.

Course Outcomes (CO):

At the end of the course the student should be able to:

CO1: Understand the objectives, stages, categories of construction project, project management, basic principles of project planning, financial aspects of project management and contract management.

CO2: Evaluate the different project schedule, project management techniques, financial aspects of project management, contract and safety management.

CO3: Analyze the optimum duration of a project, optimum cost of the project, project networks, resources allocation and safety management.

CO4: Develop the critical path, material scheduling, tender and contract document for a project.

	PART - A: (All questions are compulsory) Max. Marks (10)				
		Marks	CO	BL	PO
Q.1	What do you mean by scheduling of a project?	2	1	1	11
Q.2	Summarize benefit cost ratio.	2	1	2	11
Q.3	Describe a head event with diagram.	2	1	1	11

13.11 Mid Term Theory Question Paper Format

POORNIMA COLLEGE OF ENGINEERING, JAIPUR

IV B.TECH. (VIII Sem.) Roll No. _____

SECOND MID TERM EXAMINATION 2023-24

Code: 8CE4-01 Category: PCC Subject Name– Project Planning and Construction Management

(BRANCH – CIVIL ENGINEERING)

Course Credit: 03

Max. Time: 2 hrs. Max. Marks: 60

NOTE:- Read the guidelines given with each part carefully.

Course Outcomes (CO):

At the end of the course the student should be able to:

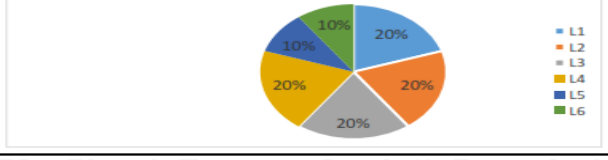
CO1: Understand the objectives, stages, categories of construction project, project management, basic principles of project planning, financial aspects of project management and contract management.

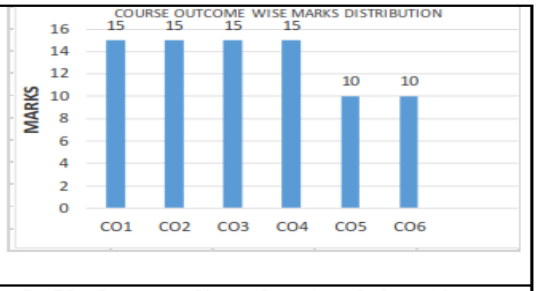
CO2: Evaluate the different project schedule, project management techniques, financial aspects of project management, contract and safety management.

CO3: Analyze the optimum duration of a project, optimum cost of the project, project networks, resources allocation and safety management.

CO4: Develop the critical path, material scheduling, tender and contract document for a project.

	PART - A: (All questions are compulsory) Max. Marks (10)				
		Marks	CO	BL	PO
Q.1		2			
Q.2		2			
Q.3		2			





BL – Bloom's Taxonomy Levels (1- Remembering, 2- Understanding, 3 – Applying, 4 – Analyzing, 5 – Evaluating, 6 - Creating)

CO – Course Outcomes; PO – Program Outcomes

13. List of Important Links

List of Important Links		
Sr. No.	**Link**	**Particulars**
1	https://www.rtu.ac.in/index/	Rajasthan Technical University
2	http://www.pce.poornima.org	Institute Website
3	http://www.pce.poornima.org/Downloads.html	Format of Students & Employees
4	https://www.turnitin.com/login_page.asp?lang=en_us	Plagiarism Checker
5	http://pcelibrary.poornima.org/	PCE Digital Library

6	https://ndl.iitkgp.ac.in/	National Digital Library of India (NDLI)
7	https://swayam.gov.in/	SWAYAM MOOCs platform
8	https://www.vlab.co.in/	Virtual Labs
9	https://spoken-tutorial.org/	Spoken Tutorial
10	https://fossee.in/	FOSSEE (Free/Libre and Open Source Software for Education)
11	https://www.sih.gov.in/	Smart India Hackathon
12	https://www.swayamprabha.gov.in/	32 high quality educational channels through DTH on 24X7 basis.
13	https://ieeexplore.ieee.org/Xplore/home.jsp.You	IEEE All Society Periodicals Package
14	https://booksc.org/	Link for Free for book and articles
15	https://jgateplus.com/home/	J-gate Plus (JOURNALS -GATE) subscriptions
16	http://www.delnet.nic.in/	Developing Library Network
17	https://dst.rajasthan.gov.in/content/dst-gov/en/home.html	Department of Science & Technology, Government of Rajasthan
18	https://ipindia.gov.in/index.htm	Official website of Intellectual Property India
19	http://pce.poornima.org/Downloads.html	Academic Formats Word File
Note:- Required Credentials can be taken from Respective Department Heads		