POORNIMA
COLLEGE OF ENGINEERING

Approved by AICTE
Affiliated to Rajasthan Technical University, Kota
Recognized by UGC under Section 2(f) of the UGC Act, 1956

Curriculum Delivery Plans (CDPs)
Department of Civil Engineering

(Odd & Even Semester 2021-22 & Odd Semester 2022-23)

ISI-6, RIICO Institutional Area, Sitapura, Jaipur-302022 (Rajasthan)
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POORNIMA
COLLEGE OF ENGINEERING

DEPARTMENT OF CIVIL ENGINEERING

CURRICULUM DELIVERY PLAN

OUTLINE-ODD SEM-2021-22

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

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Dr. Mahesh Bundele
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Director
Poornima College of Engineering
ISI-6, RIICO Institutional Area
Sitapura, JAIPUR

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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	Prof Dr. Manoj Gattani , CE	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur
4	Faculty representative-2	Member	Prof Dr. Pooja Gupta , CE	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur
5	Final year student (Nominated by HoD)	Member	Anil Gupta	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur
6	Pre-Final year student (Nominated by HoD)	Member	Shruti Sharma	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur
7	Second year student (Nominated by HoD)	Member	Pooja Meena	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur
8	Industry Person	Member	Mr. Saurabh Sharma	Nakshatra Enviro Services
9	Recruiter	Member	Ms. Meenu Sahani	B.L. Kashyap & Sons Limited
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	AEN, Pollution Control Board,

			Agrawal,	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	Dr. Pooja Gupta Professor	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur
4	Member	Chairman, PAC-CE	Mr. Balwan Assistant Professor	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur
5	Member	Chairman, PAC-CE	Mr. Divya Vishnoi Assistant Professor	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur
6	Member	Chairman, PAC-CE	Mr. Laxmi Kant Saini Assistant Professor	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur
7	Member	Chairman, PAC-CE	Mr. Prateek Sharma Assistant Professor	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur
8	Member	Chairman, PAC-CE	Mr. Akash Panwar 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	MR. PANKAJ DHEMLA	9460907039	pankajdhemla@poornima.org	ASSOCIATE PROFESSOR
2	3405	DR. PRAN NATH DADHICH	9460907039	pran.dadhich@poornima.org	PROFESSOR
3	3713	MR. LAXMIKANT SAINI	9829204127	laxmi.saini@poornima.org	ASST PROFESSOR
4	4307	MR. DIVYA VISHNOI	8769090442	divya.vishnoi@poornima.org	ASST PROFESSOR
5	5382	Mr. SONU KUMAR	8560058069	sonukumaryadav050@gmail.com	ASST PROFESSOR
6	5386	MR. JITENDRA KUMAR	8003666051	jitendra.kumar@poornima.org	ASST PROFESSOR
7	5405	MR. BALWAN	8769040200	sheshna077@gmail.com	ASST PROFESSOR
8	5772	Mr. AKASH PANWAR	8383010465	akashpanwar159@yahoo.com	ASST PROFESSOR
9	5978	DR. POOJA GUPTA	9828889752	pooja.gupta@poornima.org	PROFESSOR
10	6021	MR. ARPIT SINGH BHADORIYA	8871467631	arpit.bhadoriya@poornima.org	ASST PROFESSOR
11	6358	DR. MANOJ GATTANI	7058368351	manoj.gattani@poornima.org	PROFESSOR
12	6904	Mr. PRATEEK SHARMA	7014337097	sharmaprateek63@gmail.com	ASST PROFESSOR
13	6962	Mr. MAYANK GUPTA	7007329509	mayank40gupta@gmail.com	ASST PROFESSOR
14	5913	Mr. VISHAL KUMAR CHAURASIA	8468814374	vishal.chaurasia@poornima.org	ASST PROFESSOR
15	5228	Ms. JIGISHA VANJANI	9785039079	jigisha.vanjani@poornima.org	ASST PROFESSOR
16	6366	Mr. LOKESH PRAJAPAT	8740867173	lokesh.prajapat@poornima.org	ASST PROFESSOR
17	6147	Mr. YOGESH KHATRI	9024756869	kyogesh9191@gmail.com	ASST PROFESSOR

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5 Institute Academic Calendar

JULY 2021

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

AUGUST 2021

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 2021

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 2021

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

NOVEMBER 2021

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 2021

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	

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ACADEMIC CALENDAR 2021-22*#

ODD SEMESTER

JULY 2021

RTU THEORY EXAMINATION OF FINAL YEAR [EVEN SEM 2021]

AUGUST 2021

Sunday, 01 to Monday 30	Practical Training [After VI Sem.] [Online]
Sunday, 15	Celebration of Independence Day

SEPTEMBER 2021

Wednesday 01 to 15	Practical Training [After II Sem.] [Online]
Wednesday 01 to 15	Practical Training [After IV Sem.] [Online]
Wednesday 01	Commencement of Classes - B. Tech. VII Sem.
Monday 20	Commencement of Classes - B. Tech. V Sem.
Monday 20	Commencement of Classes - B. Tech. III Sem.
Wednesday 01 to Saturday 04	Orientation programme-B. Tech. VII Sem.
Monday 20 to Saturday 25	Orientation programme-B. Tech. V & III Sem.
Sunday 05	Faculty Felicitation Program, Celebration of Teachers' Day, Blood Donation Camp & activities under WISE
Wednesday 15	Engineers' Day • Manthan- Inter-college Debate Competition

OCTOBER 2021

Saturday 02	Annual Day KALANIDHI 2020 & Prize distribution ceremony
Monday 18 to Thursday 21	Department Day (PCE)
Friday 22 to Saturday 23	Department Day (PIET)
Monday 25 to Saturday 30	I - Mid Term Theory & Practical Exam for B.Tech VII Sem

NOVEMBER 2021

Thursday 11 to Wednesday 17	I - Mid Term Theory & Practical Exam for B.Tech V & III Sem

DECEMBER 2021

Saturday 18 to Friday 24	II - Mid-Term Theory & Practical Exam for B.Tech VII Sem
Saturday 25	Last Teaching Day for B.Tech VII Sem

JANUARY 2022

Monday 03 to Wednesday 05	End-Term Practical Exams for B.Tech VII Sem
Monday 03 to Saturday 08	II - Mid Term Theory & Practical Exam for B.Tech V & III Sem
Saturday 15	Last Teaching Day for B.Tech V & III Sem
Thursday 20 Saturday 22	End-Term Practical Examination for B. Tech V & III Sem

HOLIDAYS IN ODD SEMESTER 2021-22

1	Bakrid / Eid-ul-Adha	Wednesday, July 21, 2021
2	Raksha Bandhan	Sunday, August 22, 2021
3	Vijay Dashmi	Friday, October 15, 2021
4	Diwali Break	Monday, November 01 to Saturday, 06, 2021

HOLIDAYS IN EVEN SEMESTER 2021-22

1	Winter Break	As per RTU Examination Schedule
2	Makar Sankranti	Friday, January 14, 2022
3	Celebration of Republic Day	Wednesday, January 26, 2022
4	Holi	Saturday, March 19 to Sunday, March 20, 2022
5	Ramzan Id/Eid-ul-Fitar	Tuesday, May 3, 2022
6	Summer Break	As per RTU Examination Schedule

*Subject to revision as per RTU notifications

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6 Department Activity Calendar

Poornima College of Engineering, Jaipur

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

(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	Yet to be decided as per RTU calendar	Monday 20, September 2021	Monday 20, September 2021	Wednesday 01, September 2021
2	Orientation programme	Yet to be decided as per RTU calendar	Monday 20 to Saturday 25, September 2021	Monday 20 to Saturday 25, September 2021	Wednesday 01 to Saturday 04, September 2021
3	Date of submission of question papers by faculty members to secrecy for 1st Mid-term		Saturday 30, October 2021	Saturday 30, October 2021	Monday 18, October 2021
4	I Mid Term Theory & Practical Exam	Yet to be decided as per RTU calendar	Thursday 11 to Wednesday 17, November 2021	Thursday 11 to Wednesday 17, November 2021	Monday 25 to Saturday 30, October 2021
5	Showing evaluated answer books of 1st Mid-term exam to students in respective classes		Wednesday 24, November 2021	Wednesday 24, November 2021	Wednesday 10, November 2021
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 29, November 2021	Monday 29, November 2021	Monday 15, November 2021
7	Date of submission of question papers by faculty members to secrecy for 2nd Mid-term		Monday 27, December 2021	Monday 27, December 2021	Saturday 11, December 2021
8	Revision classes	To be declared later according to RTU Exam Schedule			
9	Last Teaching Day	Yet to be decided as per RTU calendar	Saturday 15, January 2022	Saturday 15, January 2022	Saturday 25, December 2021
10	2nd Mid-term theory & Practical Exams	Yet to be decided as per RTU calendar	Monday 03 to Saturday 08, January 2022	Monday 03 to Saturday 08, January 2022	Saturday 18 to Friday 24, December

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					2021
11	End-Term Practical Exams	Yet to be decided as per RTU calendar	Thursday 20 Saturday 22, January 2022	Thursday 20 Saturday 22, January 2022	Monday 03 to Wednesday 05, January 2022
(B) Events and Activities					
12	Career Prospects for Engineering Students in New Era of Atmanirbhar Bharat	Thursday,September 15,2021			
13	Importance of Software approach in Civil Engineering	Monday , September 20,2021			
14	Alumni Session Report'	Monday, September 20,2021			
15	Career opportunities in Civil Engineering'	Tuesday, September 21,2021			
16	AMAZING WATER: THRIVING TOWARDS SUSTAINABILITY	Wednesday, November 03,2021			
17	Presentation Preparation MS Point	Tuesday, November 16,2021			
18	Webinar on Road & Safety Audit	Wednesday, December 15,2021			
19	One day Workshop on Application of Total Station in Civil Engineering	Thursday, December 30,2021			
20	Introduction of REVIT Architeture	Wednesday, January 19,2022			
(C) Holidays					
21	Eid-ul-Fitar	Wednesday, July 21, 2021			
22	Raksha Bandhan	Sunday, August 22, 2021			
23	Vijay Dashmi	Friday, October 15, 2021			
24	Diwali Break	Monday, November 01 to Saturday, 06, 2021			

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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

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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
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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**

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8 PCE Teaching Scheme

Year	Sem	Course Name	Subject Code	No. of Sec	No. of Batches	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	1	0	0	1	1	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	3	0	0	3	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	5CE5-	2	3	6	0	0	6	CIVIL	PEC

		Management/Town Planning	12/5CE 5-13								
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	1	0	0	1	1	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	2	3	6	0	0	6	CIVIL	OE
4	7	Road Material Testing Lab	7CE4-21	1	2	0	0	4	4	CIVIL	PCC
4	7	Professional Practices & Field Engineering Lab	7CE4-22	1	2	0	0	4	4	CIVIL	PCC
4	7	Soft Skills Lab	7CE4-23	1	2	0	0	4	4	English	PCC
4	7	EnvironmentalMonitoring and Design Lab	7CE4-24	1	2	0	0	4	4	CIVIL	PCC
4	7	Practical Training	7CE7-30	1	2	1	0	0	1	CIVIL	PSIT
4	7	Seminar	7CE7-40	1	2	0	0	4	4	CIVIL	PSIT
4	7	Project	7CE7-Project	1	2	0	0	6	6	CIVIL	PSIT
4	7	Social Outreach, Discipline & Extra Curricular Activities	7CE8-00	1	2	0	0	0	0	SODECA	SODECA

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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.

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9 Department Load Allocation

POORNIMA COLLEGE OF ENGINEERING,JAIPUR								
DEPARTMENT OF CIVIL ENGINEERING								
FACULTY SUBJECT WISE ALLOCATION SESSION 2021-22(ODD)								
S. No	**Faculty Name**	**Sec**	**SUB. CODE**	**SUBJECT NAME**	**L**	**T**	**P**	**Load**
1	Dr. Manoj Gattani	A	7CE6-60.1	Environmental Impact Analysis	3	0	0	3
	Dr. Manoj Gattani	A	7CE4-40	Seminar	0	0	2	2
	Dr. Manoj Gattani	A	5CE7-30	Industrial training/NSP	2	0	0	2
	Dr. Manoj Gattani	A	7CEPR	Project (Coordinator)	0	0	2	2
					5	**0**	**4**	**9**
2	Dr. P. N. Dadhich	A	3CE3-08	Engineering Geology	3	0	0	3
	Dr. P. N. Dadhich	A	3CE4-25	Geology Lab	0	0	1	3
	Dr. P. N. Dadhich	A	7CEPR	Project	0	0	2	2
					3	**0**	**3**	**8**
3	Dr. Pooja Gupta	A	5CE4-04	Geotechnical Engineering	3	3	0	6
	Dr. Pooja Gupta	A	7CE4-40	Seminar (Coordinator)	0	0	2	2
	Dr. Pooja Gupta	A	3CE4-30	Industrial training/NSP	0	0	1	1
					3	**3**	**3**	**9**
4	Mr. SONU KUMAR	A	5CE4-05	Water Resource Engineering	3	0	0	3
	Mr. SONU KUMAR	A	7CEPR	Project	0	0	2	2
	Mr. SONU KUMAR	A	5CE7-30	Industrial training/NSP (Coordinator)	2	0	0	2
	Mr. SONU KUMAR	A	5CE4-23	Water Resource Engineering Design	0	0	2	6
					5	**0**	**4**	**13**
5	Mr. Balwan Sheshma	A	3CE4-30	Industrial training/NSP	0	0	1	1
	Mr. Balwan Sheshma	A	7CE4-40	Seminar	0	0	2	2
	Mr. Balwan Sheshma	A	5CE7-30	Industrial training/NSP	2	0	0	2
	Mr. Balwan Sheshma	A	5CE4-02	Structural Analysis-I	3	3	0	6
	Mr. Balwan Sheshma	A	7CEPR	Project	0	0	2	2
					5	**3**	**5**	**13**
6	Mr. Divya Vishnoi	A	3CE4-30	Industrial training/NSP	0	0	1	1
	Mr. Divya Vishnoi	A	5CE4-03	Design of Concrete Structures	3	0	0	3
	Mr. Divya Vishnoi	A	5CE4-21	Concrete Structures Design	0	0	6	6

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	Mr. Divya Vishnoi	A	7CE6-60.2	Disaster Management	3	0	0	3
					6	**0**	**7**	**13**
7	Mr. Laxmi kant Saini	A	5CE5-15	Repair and Rehabilitation of Structures	3	0	0	3
	Mr. Laxmi kant Saini	A	7CE4-22	Professional Practices & Field Engineering Lab	0	0	4	4
	Mr. Laxmi kant Saini	A	7CE4-21	Road Material Testing Lab	0	0	4	4
	Mr. Laxmi kant Saini	A	7CEPR	Project	0	0	2	2
					3	**0**	**10**	**13**
8	Mr. MAYANK GUPTA		1FY3-09	Basic Civil Engineering	3	0	0	3
	Mr. MAYANK GUPTA		1FY3-31	Basic Civil Engineering Lab	0	0	6	6
	Mr. MAYANK GUPTA	A	1FY3-12	Basic Civil Engineering	3	0	0	3
	Mr. MAYANK GUPTA	A	1FY3-13	Basic Civil Engineering	3	0	0	3
					9	**0**	**6**	**15**
9	Mr. AKASH PANWAR		1FY3-10	Basic Civil Engineering	3	0	0	3
	Mr. AKASH PANWAR		1FY3-30	Basic Civil Engineering Lab	0	0	6	6
	Mr. AKASH PANWAR	A	1FY3-28	Basic Civil Engineering Lab	0	0	6	6
					3	**0**	**12**	**15**
10	Mr. Prateek Sharma	A	3CE3-05	Surveying	3	0	0	3
	Mr. Prateek Sharma	A	3CE4-21	Surveying Lab	0	0	6	6
	Mr. Prateek Sharma	A	5CE7-30	Industrial training/NSP	2	0	0	2
	Mr. Prateek Sharma		7CEPR	Project	0	0	2	2
					5	**0**	**8**	**13**
11	Mr. JITENDRA KUMAR	A	5CE5-12	Disaster Management	3	0	0	3
	Mr. JITENDRA KUMAR		7CEPR	Project	0	0	2	2
	Mr. JITENDRA KUMAR	A	7CE4-40	Seminar	0	0	2	2
	Mr. JITENDRA KUMAR	A	7CE4-30	Industrial training/NSP (Coordinator)	0	0	1	1
	Mr. JITENDRA KUMAR	A	7CE4-40	Seminar	0	0	2	2
	Mr. JITENDRA KUMAR	A	5CE7-30	Industrial training/NSP	2	0	0	2
					5	**0**	**7**	**12**
12	Mr. LOKESH PRAJAPAT	A	7CEPR	Project	0	0	2	2
	Mr. LOKESH PRAJAPAT	A	3CE4-30	Industrial training/NSP	1	0	0	1
	Mr. LOKESH PRAJAPAT	A	5CE5-14	Town Planning	3	0	0	3
	Mr. LOKESH PRAJAPAT	A	7CE4-01	Transportation Engineering	3	0	0	3

	Mr. LOKESH PRAJAPAT	A	5CE7-30	Industrial training/NSP	2	0	0	2
	Mr. LOKESH PRAJAPAT	A	7CE4-30	Industrial training	0	0	1	1
	Mr. LOKESH PRAJAPAT	A	3CE3-07	Building Materials and Construction	3	0	0	3
	Mr. LOKESH PRAJAPAT	A	3CE4-24	Civil Engineering Materials Lab	0	0	6	6
					9	**0**	**3**	**12**
13	Mr. YOGESH KHATRI	A	1FY3-11	Basic Civil Engineering	3	0	0	3
	Mr. YOGESH KHATRI	A	1FY3-29	Basic Civil Engineering Lab	0	0	6	6
	Mr. YOGESH KHATRI		1FY3-27	Basic Civil Engineering Lab	0	0	6	6
					3	**0**	**12**	**15**
					5	**0**	**9**	**14**
14	MR. PANKAJ DHEMLA	A	5CE5-13	Ground Improvement Techniques	3	0	0	3
	MR. PANKAJ DHEMLA	A	3CE4-31	Industrial training/NSP (Coordinator)	1	0	0	1
	MR. PANKAJ DHEMLA	A	7CEPR	Project	0	0	2	2
					4	**0**	**2**	**6**
15	MR. ARPIT SINGH BHADORIYA	A	3CE3-04	Engineering Mechanics	2	3	0	5
	MR. ARPIT SINGH BHADORIYA	A	3CE4-23	Computer Aided Civil Engineering Drawing	0	0	6	6
	MR. ARPIT SINGH BHADORIYA	A	7CE4-40	Seminar	0	0	2	2
					2	**3**	**8**	**13**
16	Mr. VISHAL KUMAR CHAURASIA	A	3CE3-06	Fluid Mechanics	3	0	0	3
	Mr. VISHAL KUMAR CHAURASIA	A	3CE4-22	Fluid Mechanics Lab	0	0	6	6
	Mr. VISHAL KUMAR CHAURASIA	A	7CE4-40	Seminar	0	0	2	2
	Mr. VISHAL KUMAR CHAURASIA	A	7CEPR	Project	0	0	2	2
					3	**0**	**10**	**13**
17	Ms. JIGISHA VANJANI	A	5CE3-01	Construction Technology & Equipments	2	0	0	2
	Ms. JIGISHA VANJANI	A	7CE4-24	Environmental Monitoring and Design Lab	0	0	4	4
	Ms. JIGISHA VANJANI	A	7CE4-30	Industrial training	0	0	1	1
	Ms. JIGISHA VANJANI	A	5CE4-22	Geotechnical Engineering Lab	0	0	6	6
					2	**0**	**11**	**13**

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10 Time Table

10.1 Orientation Time Table

POORNIMA COLLEGE OF ENGINEERING							
DEPARTMENT OF CIVIL ENGINEERING							
III SEM TIME TABLE (2021-2022)							
DAY	**BATCH**	**9:00-10:00 am**	**10:00-11:00 am**	**11:00-12:00 noon**	**L U N C H**	**12:30-1:30 pm**	**1:30-2:30 pm**
MON	**B1**	Tutor Interaction		Alumni Interaction	**12:00 - 12:30**	Seminar on Importance of Software approach in Civil Engineering	
	B2						
	B3						
TUES	**B1**	Internship (BS)		Alumni Interaction		Seminar on Career opportunities	
	B2						
	B3						
WED	**B1**	Placement Interaction	HoD Interaction			NSP	
	B2						
	B3						
THURS	**B1**	EM (3CE3-04) Zero Lecture	Seminar on Building Construction			Seminar on Building Construction	TC (3CE1-02) Zero Lecture
	B2						
	B3						
FRI	**B1**	FM (3CE3-06) Zero Lecture	BMC (3CE3-07) Zero Lecture	AEM-I (3CE-01) Zero Lecture		SURVEYING (3CE3-05)	EG LAB (3CE3-08) Zero Lecture
	B2						
	B3						
SAT	**B1**	**i3 day**				**i3 day**	
	B2						
	B3						

V SEM

POORNIMA COLLEGE OF ENGINEERING							
DEPARTMENT OF CIVIL ENGINEERING							
V SEM TIME TABLE (2021-2022)							
DAY	**BATCH**	**9:00-10:00 am**	**10:00-11:00 am**	**11:00-12:00 noon**	**L U N C H**	**12:30-1:30 pm**	**1:30-2:30 pm**
MON	**B1**	Tutor Interaction		Alumni Interaction	**12:00 - 12:30**	Seminar on Importance of Software approach in Civil Engineering	
	B2						
	B3						

TUES	**B1**	HoD Interaction		Alumni Interaction		Seminar on Career opportunities	
	B2						
	B3						
WED	**B1**	Placement Interaction)	Internship			NSP	
	B2						
	B3						
THURS	**B1**	DCS (5CE4-03) Zero Lecture	Seminar on Building Construction			Seminar on Building Construction	SA-I (5CE4-02) Zero Lecture
	B2						
	B3						
FRI	**B1**	GE LAB (5CE4-22) Zero Lecture	CSD (5CE4-21) Zero Lecture	GE (5CE4-04) Zero Lecture		CTE (5CE3-01) Lecture	
	B2						
	B3						
SAT	**B1**	**i3 day**				**i3 day**	
	B2						
	B3						

VII SEM

POORNIMA COLLEGE OF ENGINEERING							
DEPARTMENT OF CIVIL ENGINEERING							
VII SEM TIME TABLE (2021-2022)							
DAY	**BATCH**	**9:00-10:00**	**10:00-11:00**	**11:00-12:00**	**L U N C H**	**12:30-1:30**	**1:30-2:30**
MON	**B1**	OE-I/OE-II	SM			TE (AP)	SS lab
	B2						SS lab
TUES	**B1**	OE-I/OE-II	PT			TE (AP)	EM&D lab
	B2						EM&D lab
WED	**B1**	OE-I/OE-II	PR			TE (AP)	PPE lab
	B2						PPE lab
THURS	**B1**	RMT lab	Add on ABCD	Add on ABCD		Add on ABCD	
	B2	RMT lab					
FRI	**B1**	i3 day				i3 day	
	B2						
SAT	**B1**	**OFF**				**OFF**	
	B2						

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10.2 Academic Time Table

III SEM Time Table Effective from Sep, 6, 2021

POORNIMA COLLEGE OF ENGINEERING							
DEPARTMENT OF CIVIL ENGINEERING							
III SEM TIME TABLE (2021-2022)							
DAY	BATCH	9:10-10:00 am	10:00-11:00 am	11:00-12:00 noon	LUNCH	12:30-1:30 pm	1:30-2:30 pm
MON	B1	FM (3CE3-06) VC	BMC (3CE3-07) SS	SURVEYING (3CE3-05) PS	12:00 - 12:30	EG (3CE3-08) PN	BMC (3CE3-07) SS
	B2						
	B3						
TUES	B1	EM (3CE3-04) ASB	BMC (3CE3-07) SS	TC (3CE1-02) KS		AEM-I (3CE-01) SJ	SURVEYING (3CE3-05) PS
	B2						
	B3						
WED	B1	EM (3CE3-04) ASB	EG LAB (3CE4-25) PN	SURVEYING (3CE3-05) PS		AEM-I (3CE-01) SJ	IT/NSP (3CE4-30) PD+LP
	B2						
	B3						
THURS	B1	EM (3CE3-04) ASB	AEM-I (3CE-01) SJ	EG (3CE3-08) PN		FM (3CE3-06) VC	CACED (3CE4-23) ASB
	B2						
	B3						
FRI	B1	FM (3CE3-06) VC	BMC (3CE3-07) SS	TC (3CE1-02) KS		SURVEYING (3CE3-05) PS	FM (3CE3-06) VC
	B2						
	B3						
SAT	B1	i3 day				i3 day	
	B2						
	B3						

V SEM Time Table Effective from Sep, 6, 2021

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POORNIMA COLLEGE OF ENGINEERING							
DEPARTMENT OF CIVIL ENGINEERING							
V SEM TIME TABLE (2021-2022)							
DAY	**BATCH**	**9:10-10:00 am**	**10:00-11:00 am**	**11:00-12:00 noon**	**L U N C H**	**12:30-1:30 pm**	**1:30-2:30 pm**
MON	**B1**	WRE (5CE4-05) SK	GE (5CE4-04) PG	DCS (5CE4-03) DV		SA-I (5CE4-02) BS	CTE (5CE3-01) (JV)
	B2						
	B3						
TUES	**B1**	WRE (5CE4-05) SK	DCS (5CE4-03) DV	GE (5CE4-04) PG		SA-I (TUT) (5CE4-02) BS	CTE (5CE3-01) (JV)
	B2						
	B3						
WED	**B1**	WRE (5CE4-05) SK	CTE (5CE3-01) (JV)	DM (5CE5-12) JK/ TP (5CE5-13) PD		SA-I (5CE4-02) BS	GE (5CE4-04) PG
	B2						
	B3						
THURS	**B1**	WRE (5CE4-23) SK	GIT (5CE5-14) LP/ RRS (5CE5-15) LKS	GE (5CE4-04) PG	**12:00 - 12:30**	SA-I (5CE4-02) BS	IT/NSP (5CE7-30) BS+SK
	B2	WRE (5CE4-23) SK					
	B3	WRE (5CE4-23) SK					
FRI	**B1**	GIT (5CE5-14) LP/ RRS (5CE5-15) LKS	DCS (5CE4-03) DV	GE LAB (5CE4-22) (JV)		DM (5CE5-12) JK/ TP (5CE5-13) PD	CSD (5CE4-21) (DV)
	B2						
	B3						
SAT	**B1**	**i3 day**				**i3 day**	
	B2						
	B3						

VII SEM Time Table Effective from Sep, 6, 2021

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POORNIMA COLLEGE OF ENGINEERING

DEPARTMENT OF CIVIL ENGINEERING

VII SEM TIME TABLE (2021-2022)

DAY	BATCH	9:10-10:00 am	10:00-11:00	11:00-12:00	L U N C H	12:30-1:30	1:30-2:30
MON	B1	OE-I/OE-II	SM (PG/BS)		12:00 - 12:30	TE (7CE4-01) (LP)	PPE LAB (7CE4-22) (LKS)
	B2						PPE LAB (7CE4-22) (LKS)
TUES	B1	OE-I/OE-II	PT (JK/LP)			EM&D lab (7CE4-24) (JV)	TE (7CE4-01) (LP)
	B2					EM&D lab (7CE4-24) (JV)	
WED	B1	OE-I/OE-II	SS lab (7CE4- 23) (KS)	TE (7CE4-01) (LP)		PR (MG/PN)	
	B2		SS lab (7CE4- 23) (KS)				
THURS	B1	RMT LAB (7CE4-21) (LKS)	ABCD (RF)	ABCD (RF)		ABCD (RF)	
	B2	RMT LAB (7CE4-21) (LKS)					
FRI	B1	i3 day				i3 day	
	B2						
SAT	B1	OFF				OFF	
	B2						

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III SEM Time Table Effective from Oct, 4, 2021

POORNIMA COLLEGE OF ENGINEERING

DEPARTMENT OF CIVIL ENGINEERING

III SEM TIME TABLE (2021-2022)

DAY	BATCH	9:10-10:00 am	10:00-11:00 am	11:00-12:00 noon	L U N C H	12:30-1:30 pm	1:30-2:30 pm	2:30-3:30 pm
MON	B1	FM LAB (3CE4-22) (AB-10) (VC)		AEM-I (3CE-01) (Tute) (CG-16 B) SJ		EM (3CE3-04) (Tute) (CG-16 B) ASB	SUR LAB (CG-16 B) (3CE4-21) PS	
	B2							
	B3							
TUES	B1	CACED (3CE4-23) (AB-20) (ASB)		FM (3CE3-06) (Tute) (CG-16 B) VC		EG LAB (3CE4-25) (CG-16 A) PN	CEM LAB (3CE4-24) (WL-10B) SS	
	B2							
	B3							
WED	B1	SURVEYING (3CE3-05) PS	TC (3CE1-02) KS	BMC (3CE3-07) SS		AEM-I (3CE-01) SJ	EM (3CE3-04) ASB	
	B2							
	B3							
THURS	B1	SURVEYING (3CE3-05) PS	AEM-I (3CE-01) SJ	TC (3CE1-02) KS		EM (3CE3-04) ASB	EG (3CE3-08) PN	
	B2							
	B3							
FRI	B1	FM (3CE3-06) VC	BMC (3CE3-07) SS	EG (3CE3-08) PN		FM (3CE3-06) VC	SURVEYING (3CE3-05) PS	
	B2							
	B3							
SAT	B1	i3 day			12:00Noon - 12:30 pm	i3 day		
	B2							
	B3							

V SEM Time Table Effective from Oct, 4, 2021

POORNIMA COLLEGE OF ENGINEERING

DEPARTMENT OF CIVIL ENGINEERING

V SEM TIME TABLE (2021-2022)

DAY	BATCH	9:10-10:00 am	10:00-11:00 am	11:00-12:00 noon	L U N C H	12:30-1:30 pm	1:30-2:30 pm	2:30-3:30 pm
MON	B1	WRE (5CE4-05) SK	DM (5CE5-12) JK/ TP (5CE5-13) PD	GE (5CE4-04) PG		SA-I (5CE4-02) BS	CTE (5CE3-01) (JV)	
	B2							
	B3							
TUES	B1	WRE (5CE4-05) SK	DCS (5CE4-03) DV	CTE (5CE3-01) (JV)		GIT (5CE5-14) LP/ RRS (5CE5-15) LKS	GE (5CE4-04) PG	
	B2							
	B3							
WED	B1	SA-I (TUT) (5CE4-02) (CB-20) BS	GE LAB (5CE4-22) (CB-20) (JV)			IT/NSP (5CE7-30) (CG-04) BS+SK		
	B2							
	B3							
THURS	B1	CSD (5CE4-21) (CG-03) DV		GE Tute (5CE4-04) (CG-03) PG		IT/NSP (5CE7-30) (CG-04) BS+SK		
	B2							
	B3							
FRI	B1	WRE LAB (5CE4-23) SK	GIT (5CE5-14) LP/ RRS (5CE5-15) LKS	SA-I (5CE4-02) BS		DM (5CE5-12) JK/ TP (5CE5-13) PD	DCS (5CE4-03) DV	
	B2							
	B3							
SAT	B1	i3 day			12:00Noon - 12:30 pm	i3 day		
	B2							
	B3							

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VII SEM Time Table Effective from Oct, 4, 2021

POORNIMA COLLEGE OF ENGINEERING

DEPARTMENT OF CIVIL ENGINEERING

VII SEM TIME TABLE (2021-2022)

DAY	BATCH	9:10-10:00 am	10:00-11:00 am	11:00-12:00 noon	L U N C H	12:30-1:30 pm	1:30-2:30 pm	2:30-3:30 pm
MON	B1	OE-I/OE-II	PPE LAB (7CE4-22) (LKS)	TE (7CE4-01) (LP)		TE (7CE4-01) (LP)	PR (MG/PN)	
	B2							
TUES	B1	OE-I/OE-II	ABCD (RF)	ABCD (RF)		ABCD (RF)	TE (7CE4-01) (LP)	
	B2							
WED	B1	OE-I/OE-II	OFF			OFF		
	B2							
THURS	B1	OFF				OFF		
	B2							
FRI	B1	PPE LAB (7CE4-22) (CG-16A) (LKS)	SS LAB (7CE4-23) (CG-16A) (KS)			PT (JK/LP) (CG-03)		SM (PG/BS) (CG-03)
	B2							
SAT	B1	RMT LAB (7CE4-21) (WL-10A) (LKS)		PT (JK/LP) (CG-03)	12:00Noon - 12:30 pm	PT (JK/LP) (CG-03)	EM&D lab (7CE4-24) (MF-13) (JV)	
	B2							

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III Sem Time Table Effective from Nov,8, 2021

POORNIMA COLLEGE OF ENGINEERING

DEPARTMENT OF CIVIL ENGINEERING

III SEM TIME TABLE

DAY/TIME	8:00 - 9:00	9:00 - 10:00	10:00 - 11:00	LUNCH	11:50 - 12:50	12:50 - 13:50	13:50 - 14:50	14:50 - 15:50
Mon	3CE1-02 TC CG-9 KS	3CE3-04 EM CG-9 ASB	3CE4-07 BMC CG-9 SS	11:00 - 11:50	3CE4-08 EG CG-9 Dr.P.N.D	3CE4-30 Industrial Training CG-9 PD	3CE4-06 FM CG-9 VC	
Tue	3CE4-06 FM CG-9 VC	3CE4-08 EG CG-9 Dr.P.N.D	3CE4-07 BMC CG-9 SS		3CE4-24 CEM LAB B1 SS 3CE4-21 SURVEYING LAB B2 PS 3CE4-25 GEOLOGY LAB Dr.P.N.D		3CE2-01 AEM - I Tut. CG-9 SJ	
Wed	3CE4-07 BMC CG-9 SS	3CE3-04 EM CG-9 ASB	3CE2-01 AEM - I CG-9 SJ		3CE4-23 CACED B1 ASB 3CE4-25 GEOLOGY LAB Dr.P.N.D 3CE4-21 SURVEYING LAB B3 PS		3CE1-02 TC CG-9 KS	
Thur	3CE2-01 AEM - I CG-9 SJ	3CE3-04 EM Tut. CG-9 ASB	3CE4-05 SURVEYING CG-9 PS		3CE4-25 GEOLOGY LAB Dr.P.N.D 3CE4-23 CACED B2 ASB 3CE4-22 FM LAB B3 VC		3CE4-05 SURVEYING CG-9 PS	
Fri	3CE4-21 SURVEYING LAB B1 PS 3CE4-22 FM LAB B2 VC 3CE4-24 CEM LAB B3 SS		3CE4-05 SURVEYING CG-9 PS		3CE4-06 FM CG-9 VC	3CE4-22 FM LAB B1 VC 3CE4-24 CEM LAB B2 SS 3CE4-23 CACED B3 ASB		
Sat								

V Sem Time Table Effective from Nov,8, 2021

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POORNIMA COLLEGE OF ENGINEERING

DEPARTMENT OF CIVIL ENGINEERING

V SEM TIME TABLE

DAY/TIME	8:00 - 9:00	9:00 - 10:00	10:00 - 11:00	L U N C H	11:50 - 12:50	12:50 - 13:50	13:50 - 14:50	14:50 - 15:50
Mon	5CE4-21 CSD B 1 DV 5CE4-23 WRED AB B 2 SK 5CE4-22 GE LAB B 3 JV		5CE4-02 SA - I CG-03 BS		5CE5-14 TP CG-03 LP	5CE5-12 DM CG-03 JK	5CE5-15 RRS CG-03 LKS	
Tue	5CE5-12 DM CG-03 JK	5CE4-04 GE CG-03 PG	5CE5-15 RRS CG-03 LKS		5CE4-04 GE CG-03 PG	5CE4-03 DCS CG-03 DV	5CE4-05 WRE CG-03 SK	
We	5CE4-02 SA -I Tut. CG-03 BS	5CE4-22 GE LAB B1 JV 5CE4-21 CSD B2 DV 5CE4-23 WRED B 3 SK		**11:00 - 11:50**	5CE4-03 DCS CG-03 DV	5CE5-14 TP CG-03 LP	5CE5-15 RRS CG-03 LKS	
Th	5CE4-04 GE CG-03 PG	5CE4-02 SA-I CG-03 BS	5CE5-13 GIT CG-03 PD		5CE4-03 DCS CG-03 DV	5CE5-15 RRS CG-03 LKS	5CE4-05 WRE CG-03 SK	
Fr	5CE4-23 WRED B 1 SK 5CE4-22 GE LAB B2 JV 5CE4-21 CSD B3 DV		5CE4-05 WRE CG-03 SK		5CE5-12 DM CG-03 JK	Industrial Training CG-03 BS	5CE5-13 GIT CG-03 PD	
Sa								

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VII Sem Time Table Effective from Nov,8, 2021

POORNIMA COLLEGE OF ENGINEERING								
DEPARTMENT OF CIVIL ENGINEERING								
VII SEM TIME TABLE								
DAY/TIME	**8:00 - 9:00**	**9:00 - 10:00**	**10:00 - 11:00**	**L U N C H**	**11:50 - 12:50**	**12:50 - 13:50**	**13:50 - 14:50**	**14:50 - 15:50**
Mon	7CE4-01 TE LP	7CE4-21 RMT LAB B1 LKS			7CE4-23 SS LAB B1 KS			
		7CE7-40 Seminar B2 PG			7CE4-21 RMT LAB B2 LKS		7CE6-60.2 DM DV	
		7CEPR Project B3 MG			7CE4-24 EMAD LAB B3 JV			
Tue	7CEPR Project B1 MG		7CE4-01 TE LP		7CE7-30 Practical Training JK	7CE4-22 PPAFE LAB B1 LKS		
	7CE4-24 EMAD LAB B2 JV					7CE4-23 SS LAB B2 KS		
	7CE4-22 PPAFE LAB B3 LKS					7CE7-40 Seminar B3 PG		
Wed	7CE7-40 Seminar B1 PG		7CE6-60.1 EIA MG		7CE4-24 EMAD LAB B1 JV			
	7CE4-22 PPAFE LAB B2 LKS				7CEPR Project B2 MG		7CE6-60.2 DM DV	
	7CE4-23 SS LAB B3 KS				7CE4-21 RMT LAB B3 LKS			
Thur								
Fri								
Sat								

11:00 - 11:50

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11 Course Outcome Attainment Process:

11.1 Course Outcome Attainment Process

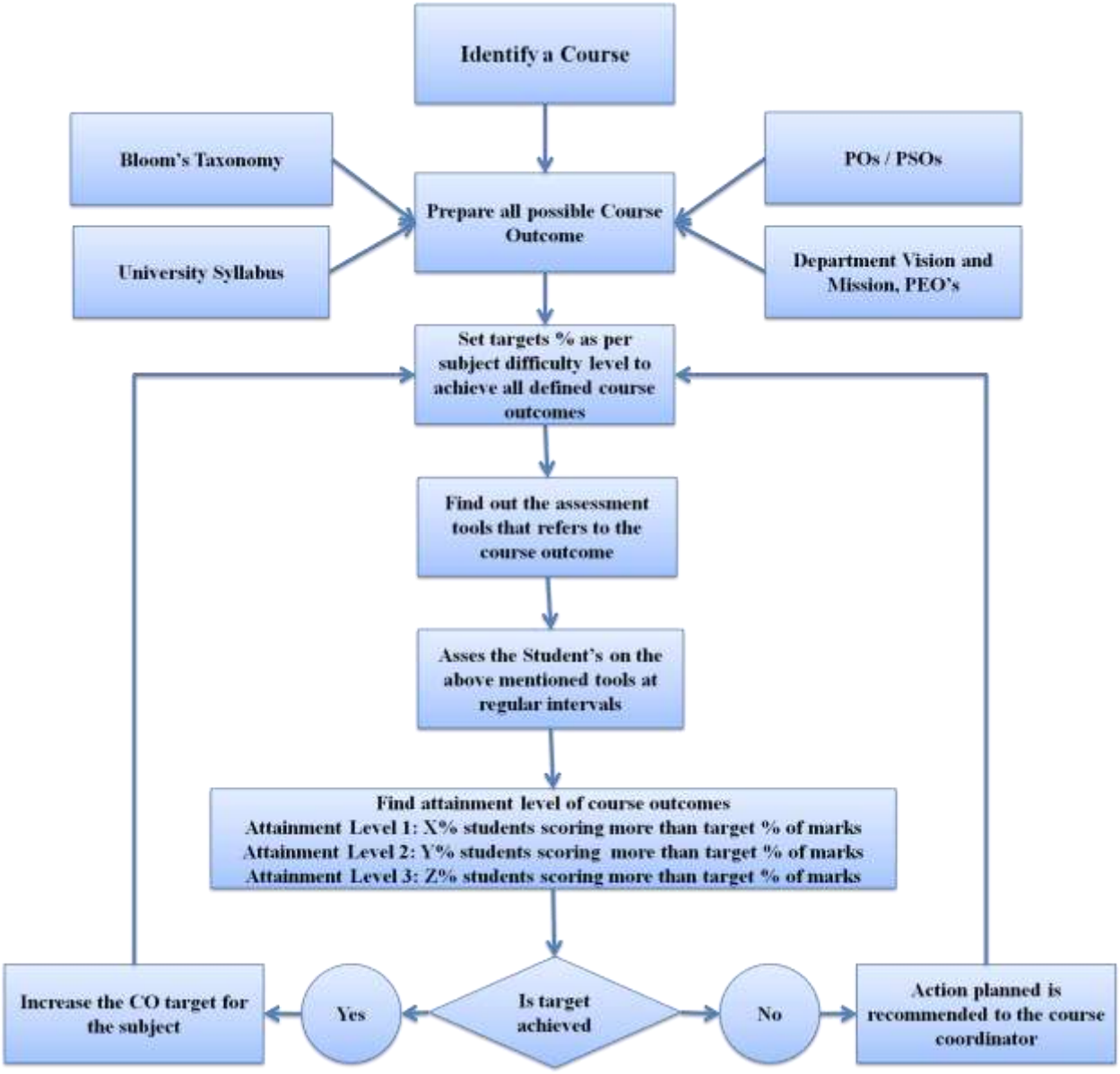

Figure. Course Outcome Attainment Process

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	CO 2	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	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO 3	Use C programs to implement operations related to Array, Macros and inline functions, Dynamic memory allocations, concept of Structure, Unions and Pointers	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO 4	Students will show an ability to communicate effectively and work ethically	-	-	-	-	-	-	-	2	-	2	-	-	-	-	-
					2	**-**	**-**	**-**	**-**	**-**	**-**	**2**	**-**	**2**	**-**	**-**	**-**	**-**	**-**
9	1F Y3-27	Basic Civil Engineering Lab	CO 1	Describe various sanitary fittings and water supply fittings	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO 2	Examine pH, Turbidity, Hardness and Total solids of given water sample	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO 3	Use of EDM and Total Station in the field	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO 4	Investigate the linear and angular measurements of the points on the ground and leveling	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO 5	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	1F Y3-28	Computer Aided Engineering Graphics	CO 1	Describe engineering drawing terminology, concept of scales and conic sections.	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-
			CO 2	Draw Projection of Points, lines, planes, solids and section of solids	-	1	-	-	-	-	-	-	-	-	-	-	2	-	-
			CO 3	Draft 2D engineering problems on CAD software.	-	-	-	-	3	-	-	-	-	-	-	-	-	1	1
			CO 4	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**	**1.00**	**1.00**

1 1	2F Y2-01	Engineering Mathematics -II	CO 1	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	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO 2	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	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO 3	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	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO 4	Students will be able to effectively analyze and apply appropriate mathematical technique to solve linear and non-linear partial differential equations.	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO 5	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**	-	-	-	-	-	-	-	-	-	-	-	-	-
1 2	2F Y2-03	Engineering Chemistry	CO 1	Describe characteristics of water, fuel and Engineering materials	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO 2	Determine of hardness of water and calorific value of fuels for Industrial as well as domestic purposes	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO 3	Compare different techniques of water treatment, fuel analysis, Manufacturing of engineering materials and corrosion protection methods	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO 4	Prepare the generic drugs or medicines by understanding the applications of organic reaction mechanism and manufacturing of engineering materials	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-
					2.00	**2.00**	-	-	-	-	-	-	-	-	-	-	-	-	-
1 3	2F Y1-04	Communication Skills	CO 1	Describe the process of communication, basics of Grammar and Writing and Literary Aspects	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
			CO 2	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																		
			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		2	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	-	-	-	-	-	-	-	-	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	**2.000**	**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.																
			LO 3	Create drawing of building masonry.	1	1	-	-		1	-	-	2	2	2	3	3	2	1
			LO 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	LO 1	Identify the instruments required for a particular survey problem	3	3	2										1	2	
			LO 2	Determine the height of an object by theodolite.	3	3	2										1	2	1
			LO 3	Prepare the map of area by Plane Table Surveying.	3	2	2	1									2		1
			LO 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	CO 1	Evaluate and analyze the Engineering Economy in Construction Field	2	3	2	-	-	-	-	-	-	-	-	-	1	2	-
			CO 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
					2.000	**2.400**	**2.600**	**1.000**	**1.000**	**2.000**	**1.000**	-	-	-	-	-	**1.400**	**1.500**	**1.250**
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	**2.333**	**3.000**	-	-	-	-	-	-	-	-	-	-	**1.75**	**1.75**	**2.500**
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**	-	-	-	-	-	-	-	-	-	**2.50**	**2.00**	-
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	-	-
					3.00	**1.60**	**2.00**	**1.33**	-	-	**1.00**	-	-	-	-	-	**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	2	-	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 Discover town 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																		
			CO 3	Apply the learned principles in planning, designing and management of traffic and traffic aids.	1	3	1	-	-	-	-	-	-	-	-	-	-	2	2	1
			CO 4	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**
3 1	6CE5-14	Bridge Engineering	CO 1	Explain different types of bridges, components and loadings as per Indian standards provisions.	1	-	-	-	-	**1**	**1**	-	-	-	-	-	-	1	-	-
			CO 2	Apply the fundamental concept of bridge loadings on Steel and RCC bridges.	2	-	-	-	-	-	-	-	-	-	-	-	-	1	2	-
			CO 3	Analyze the RCC and steel bridges using Courbons and Hendry-Jaegar method.	-	2	2	-	-	-	-	-	-	-	-	-	-	2	2	-
			CO 4	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**	-
3 2	6CE5-15	Rock Engineering (paper not found)	CO 1	Define the use of rock mass classification systems (RMR & Q)	3	1	-	-	-	-	-	-	-	-	-	-	-	1	1	1
			CO 2	Explain methods for in situ investigation and laboratory testing of rock matrix and discontinuities.	3	2		-	-	-	-	-	-	-	-	-	-	2	-	1
			CO 3	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
			CO 4	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**

33	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**	-	-	-	**2.00**	**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				3	2	1
					1	**2**	**1**	**2**	-	-	-	1	1				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	—

			O3	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	CO2																	
			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**	**3.00**	-	**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	**2.250**	**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**	-	-	**2.00**	-	**3.00**	-	-	**2.00**

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**	**2.6**	**3.0**	**2.0**	**1.3**	**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**

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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. **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 POStronglyMapped:(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																

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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	ForCO
2.	Post-MidTerm1	Direct	Marks	10	ForCO
3.	Quiz1	Direct	Marks	10	ForCO
4.	Quiz2	Direct	Marks	10	ForCO
5.	PreMidTerm2	Direct	Marks	10	ForCO
6.	Post MidTerm2	Direct	Marks	10	ForCO
7.	MidTerm1	Direct	Marks	20	ForCO
8.	MidTerm2	Direct	Marks	20	ForCO
9.	Assignment 1	Direct	Marks	10	ForCO
10.	Assignment 2	Direct	Marks	10	ForCO
11.	Workshop	Indirect	Rubrics	5	ForLO
12.	Seminar/SPL	Indirect	Rubrics	5	ForCO/LO
13.	Project (Minior NSP)	Indirect	Rubrics	20	ForLO
14.	Discussion	Indirect	Rubrics	5	ForLO
15.	Training	Indirect	Rubrics	20	ForLO
16.	Industrial Visit	Indirect	Rubrics	20	ForLO
17.	Or any other activity	Direct/ Indirect	Marks/ Rubrics	any	ForLO
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

CO1:3CSA101.1: 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 Decidedto bridgethegap

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, find out 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).

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

_____

SESSION: 20___-___

NAME OF FACULTY: _____

DEPARTMENT: _____

CAMPUS: _____

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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	

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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**

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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

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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

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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

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

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

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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.

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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

I[st] 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).

II[nd] 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).

III[rd] 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

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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:

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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: .....

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14.7.2 Detailed Lecture Note Format-2

POORNIMA
COLLEGE OF ENGINEERING

DETAILED LECTURE NOTES

PAGE NO. .....

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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

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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			

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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

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

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				

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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**

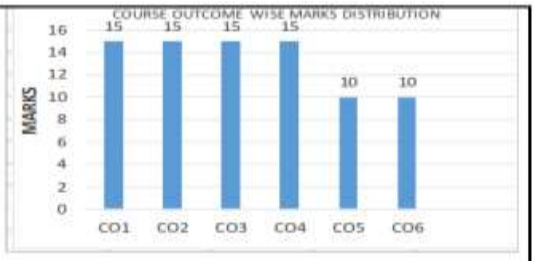
NOTE:- Read the guidelines given with each part carefully.

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

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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		

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POORNIMA
COLLEGE OF ENGINEERING

DEPARTMENT OF CIVIL ENGINEERING

CURRICULUM DELIVERY PLAN

OUTLINE-EVEN SEM-2021-22

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

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

• Website: www.poornima.org

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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.

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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	Prof Dr. Manoj Gattani , CE	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur
4	Faculty representative-2	Member	Prof Dr. Pooja Gupta , CE	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur
5	Final year student (Nominated by HoD)	Member	Anil Gupta	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur
6	Pre-Final year student (Nominated by HoD)	Member	Shruti Sharma	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur
7	Second year student (Nominated by HoD)	Member	Pooja Meena	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur
8	Industry Person	Member	Mr. Saurabh Sharma	Nakshatra Enviro Services
9	Recruiter	Member	Ms. Meenu Sahani	B.L. Kashyap & Sons Limited
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	AEN, Pollution Control Board,

			Agrawal,	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	Dr. Pooja Gupta Professor	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur
4	Member	Chairman, PAC-CE	Mr. Balwan Assistant Professor	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur
5	Member	Chairman, PAC-CE	Mr. Divya Vishnoi Assistant Professor	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur
6	Member	Chairman, PAC-CE	Mr. Laxmi Kant Saini Assistant Professor	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur
7	Member	Chairman, PAC-CE	Mr. Prateek Sharma Assistant Professor	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur
8	Member	Chairman, PAC-CE	Mr. Akash Panwar 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

List of Faculty Members

S. No.	College Emp. ID	Name of the Faculty Member	Mobile Phone	Email Address	Designation
1	1267	MR. PANKAJ DHEMLA	9460907039	pankajdhemla@poornima.org	ASSOCIATE PROFESSOR
2	3405	DR. PRAN NATH DADHICH	9460907039	pran.dadhich@poornima.org	PROFESSOR
3	3713	MR. LAXMIKANT SAINI	9829204127	laxmi.saini@poornima.org	ASST PROFESSOR
4	4307	MR. DIVYA VISHNOI	8769090442	divya.vishnoi@poornima.org	ASST PROFESSOR
5	5382	Mr. SONU KUMAR	8560058069	sonukumaryadav050@gmail.com	ASST PROFESSOR
6	5386	MR. JITENDRA KUMAR	8003666051	jitendra.kumar@poornima.org	ASST PROFESSOR
7	5405	MR. BALWAN	8769040200	sheshna077@gmail.com	ASST PROFESSOR
8	5772	Mr. AKASH PANWAR	8383010465	akashpanwar159@yahoo.com	ASST PROFESSOR
9	5978	DR. POOJA GUPTA	9828889752	pooja.gupta@poornima.org	PROFESSOR
10	6021	MR. ARPIT SINGH BHADORIYA	8871467631	arpit.bhadoriya@poornima.org	ASST PROFESSOR
11	6358	DR. MANOJ GATTANI	7058368351	manoj.gattani@poornima.org	PROFESSOR
12	6904	Mr. PRATEEK SHARMA	7014337097	sharmaprateek63@gmail.com	ASST PROFESSOR
13	6962	Mr. MAYANK GUPTA	7007329509	mayank40gupta@gmail.com	ASST PROFESSOR
14	5913	Mr. VISHAL KUMAR CHAURASIA	8468814374	vishal.chaurasia@poornima.org	ASST PROFESSOR
15	5228	Ms. JIGISHA VANJANI	9785039079	jigisha.vanjani@poornima.org	ASST PROFESSOR
16	6366	Mr. LOKESH PRAJAPAT	8740867173	lokesh.prajapat@poornima.org	ASST PROFESSOR
17	6147	Mr. YOGESH KHATRI	9024756869	kyogesh9191@gmail.com	ASST PROFESSOR

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4 Institute Academic Calendar

JANUARY 2022

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

FEBRUARY 2022

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					

MARCH 2022

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		

APRIL 2022

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 2022

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 2022

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		

JULY 2022

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

POORNIMA
COLLEGE OF ENGINEERING

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

ACADEMIC CALENDAR 2021-22*#

EVEN SEMESTER

January 2022

Saturday, 08	Annual Alumni Meet [VIRTUAL MODE]
Thursday, 20	First Day, B. Tech. VI and VIII Sem.
Thursday, 27	First Day, B. Tech. IV Sem.
Wednesday, 26	Republic Day Celebration

February 2022

Wednesday, 23 to Saturday, 26	Aarohan - 2022

March 2022

Friday, 11 to Saturday, 12	Wise Activity
Friday, 25 to Sunday, 27	Hostel Fest (AAYAM, TATVA TORQUE,PARAM, AADHYAY)

April 2022

Friday, 01	First Day, B. Tech. II Sem.
Monday, 04 to Saturday, 09	First Mid Term Examination for B.Tech VI & VIII Sem
Monday, 25 to Saturday, 30	First Mid Term Examination for B.Tech IV Sem

May 2022

Friday, 06 to Sunday, 08	Mentorship Summit / Students' Council Meet
Saturday, 14	Last Teaching Day for B.Tech VI & VIII Sem
Monday, 16 to Saturday, 21	Second Mid-Term Examination for B.Tech VI & VIII Sem
Monday, 23 to Saturday, 28	First Mid Term Examination for B.Tech II Sem
Monday, 23 to Wednesday, 25	End-Term Practical Exams for B.Tech VI & VIII Sem

June 2022

Monday, 06 to Saturday, 11	Second Mid-Term Examination for B.Tech IV Sem
Monday, 13 to Wednesday, 15	End-Term Practical Examination for B.Tech IV Sem

July 2022

Monday, 04 to Saturday, 09	Second Mid-Term Examination for B.Tech II Sem
Monday, 11 to Wednesday, 13	End-Term Practical Examination for B.Tech II Sem

HOLIDAYS IN EVEN SEMESTER 2021-22

1	Winter Break	As per RTU Examination Schedule
2	Makar Sankranti	Friday, January 14 to Saturday, January 15, 2022
3	Celebration of Republic Day	Wednesday, January 26, 2022
4	Holi	Friday, March 18 to Saturday, March 19, 2022
5	Ramzan Id/Eid-ul-Fitar	Tuesday, May 03, 2022
6	Summer Break	As per RTU Examination Schedule

*Subject to revision as per RTU notifications
*For all Engineering Faculty and Students of PCE

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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	Friday,01, April 2022	Thursday, 27, January 2022	Thursday, 20, January 2022	Thursday, 20, January 2022
2	Orientation programme	Friday, 01 to Thursday, 07, April 2022	Thursday, 27 January to 04 February, 2022	Thursday, 27 January to 04 February, 2022	Thursday, 27 January to 04 February, 2022
3	Date of submission of question papers by faculty members to secrecy for 1st Mid-term	Monday 9, May 2022	Monday 11, April 2022	Monday 11, April 2022	Monday 11, April 2022
4	I Mid Term Theory & Practical Exam	Monday, 23 to Saturday, 28, May 2022	Monday, 25 to Saturday, 30, April 2022	Monday, 04 to Saturday, 09, April 2022	Monday, 04 to Saturday, 09, April 2022
5	Showing evaluated answer books of 1st Mid-term exam to students in respective classes	Monday, 06/06/2022	Saturday, 07/05/2022	Saturday, 16-04-2022	Saturday, 16-04-2022
6	Last date of submission of Evaluated Answer Books and Mark of First Mid-term Theory & Practical exam to Exam and Secrecy Cell respectively	Saturday, 4 June 2022	Thursady, 5 May 2022	Saturday, 16 April 2022	Saturday, 16 April 2022
7	Date of submission of question papers by faculty members to secrecy for 2nd Mid-term	Monday, 27 June 2022	Monday, 30 May 2022	Monday, 2 May 2022	Monday, 2 May 2022
8	Revision classes				
9	Last Teaching Day*	Thursday, 30 June 2022	Friday 3 June 2022	Saturday, 14, May 2022	Saturday, 14, May 2022
10	2nd Mid-term theory & Practical Exams*	Monday, 04 to Saturday, 09, July 2022	Monday, 06 to Saturday, 11, June 2022	Monday, 16 to Saturday, 21, May 2022	Monday, 16 to Saturday, 21, May 2022

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11	End-Term Practical Exams	Monday, 11 to Wednesday, 13, July 2022	Monday, 13 to Wednesday, 15, June 2022	Monday, 23 to Wednesday, 25, May 2022	Monday, 23 to Wednesday, 25, May 2022
(B) Events and Activities					
12	Workshop on "Basics of Cost Estimation and Cost Analysis of Building"	Wednesday, February 09, 2022			
13	Webinar on Road & Safety Audit	Tuesday, February 15, 2022			
14	Survey Camp	Wednesday-Friday,23-25 February 2022			
15	AMAZING WATER: THRIVING TOWARDS SUSTAINABILITY	Friday, March 11, 2022			
16	Earth Day	Friday, April 22, 2022			
17	World Environment Day	Sunday, June 05, 2022			
18	2nd International Conference on Sustainable Energy, Environment and Green Technologies (ICSEEGT 2022)	Friday-Saterday,June 24-25, 2022			

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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*

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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

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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*

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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	Hydraulics Engineering	4CE4-06	T	1	1	3	H	0	3	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 Engineeri	4CE4-22	P	2	1	3	T	0	0	6	6	CIVIL	PCC

		ng Lab												
2	4	Building Drawing	4CE4-23	P	2	1	3	T	0	0	6	6	CIVIL	PCC
2	4	Advanced Surveying Lab	4CE4-24	P	2	1	3	T	0	0	6	6	CIVIL	PCC
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	4	1	3	F	4	0	0	4	CIVIL	NA
3	6	Design of Steel Structures	6CE4-04	L	4	1	3	F	4	0	0	4	CIVIL	NA
3	6	Design of Steel Structures	6CE4-04	T	0	1	3	T	0	0	0	0	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	Bridge Engineering	6CE5-14	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 Earth Retaining Structures Design	6CE4-24	P	2	1	3	T	0	0	6	6	CIVIL	NA
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

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7.1 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.

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8 Department Load Allocation

POORNIMA COLLEGE OF ENGINEERING											
DEPARTMENT OF CIVIL ENGINEERING											
LOAD DISTRIBUTION											
EVEN SEM 2021-22											
S. No.	**Name of Faculty**	**Designation**	**L/T/P**	**Sec**	**Name of Subject/Lab**	**Subject/Lab Code**	**Lecture**	**Tutorial**	**Practical**	**Total Load**	**Grand Total**
1	**Divya Vishnoi**	Assistant Professor	L	A	Structural Analysis-II	6CE4-02	3			3	**14**
			L	A	Structural Analysis-II	6CE4-02		3		3	
			P	A	Project Planning & Construction Management Lab	8CE4-21			4	4	
			P	A	Project Stage - II	8CE7-50			4	4	
2	**Balwan Sheshma**	Assistant Professor	L	A	Design of Steel Structures	6CE4-04	4			4	**14**
			P	A	NSP	6CENSP			4	4	
			P	A	Steel Structures Design	6CE4-22			6	6	
3	**Dr. Pooja Gupta**	Professor	L	A	Project Planning & Construction Management	8CE4-01	3			3	**11**
			P	A	Foundation Engineering	6CE4-25			6	6	
			P	A	Project Stage - II	8CE7-50			2	2	
4	**Mr. LOKESH PRAJAPAT**	Assistant Professor	P	A	Water And Earth Retaining Structures Design	6CE4-24			6	6	**14**
			L	A	Strength of Materials	4CE4-05	3	3		6	
			P	A	Project Stage - II	8CE7-50			2	2	
5	**Ms. JIGISHA VANJANI**	Assistant Professor	L	A	Estimating & Costing	6CE4-05	3		3	3	**15**
			P	A	Quantity Surveying And Valuation	6CE4-23			6	6	
			P	A	Hydraulics Engineering Lab	4CE4-22			6	6	
6	**Prateek Sharma**	Assistant Professor	L	A	Building Planning	4CE4-07	3			3	**13**
			L	A	Traffic Engineering & Management	6CE5-13	2			2	
			P	A	Advanced Surveying	4CE4-			6	6	

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					Lab	24					
			P	A	Project Stage - II	8CE7-50			2	2	
7	**Laxmikant Saini**	Assistant Professor	L	A	Wind And Seismic Analysis	6CE3-01	3		3	3	**15**
			P	A	Concrete Lab	4CE4-25			6	6	
			P	A	NSP	4CENSP			4	4	
			P	A	Project Stage - II	8CE7-50			2	2	
8	**Sonu Kumar**	Assistant Professor	L	A	Bridge Engineering	6CE5-14	2			2	**16**
			P	A	Material Testing Lab	4CE4-21			6	6	
			P	A	NSP	4CENSP			4	4	
			P	A	Project Stage - II	8CE7-50			4	4	
9	**Dr. Manoj Gattani**	Professor	L	A	Environmental Engineering	6CE4-03	4			4	**10**
			P	A	Project Stage - II Cordinator	8CE7-50			6	6	
10	**Dr. Pran N Dadhich**	Professor	L	A	GIS-RS	6CE5-15	2		2	2	**8**
			P	A	Project Stage - II Co-Cordinator	8CE7-50			6	6	
11	**MR. ARPIT SINGH BHADORIYA**	Assistant Professor	P	A	Pavement Design Lab	8CE4-22			4	4	**16**
			P	A	Building Drawing	4CE4-23			6	6	
			P	A	Project Stage - II	8CE7-50			4	4	
			L	A	Solid And Hazardous Waste Management	6CE5-12	2			2	
12	**MR. PANKAJ DHEMLA**	Assistant Professor	L	A	Concrete Technology	4CE4-08	3			3	**7**
			P	A	Project Stage - II	8CE7-50			4	4	
13	**Mr. VISHAL KUMAR CHAURASIA**	Assistant Professor	L	A	Composite Material	8CE6-60.1	3			3	**16**
			L	A	Fire and Safety Engineering	8CE6-60.2	3			3	
			P	A	Environmental Engineering Design And Lab	6CE4-21			6	6	
			P	A	Project Stage - II Co-Cordinator	8CE7-50			6	4	
14	**Mr.**	Assist	L	A	Hydraulics	4CE4-	3			3	**16**

	JITENDRA KUMAR	ant Professor			Engineering	06					
			L	A	Hydraulics Engineering	4CE4-06		3		3	
			P	A	Project Stage - II Co-Cordinator	8CE7-50			6	6	
			P	A	NSP	6CENSP			4	4	
15	**Mr. YOGESH KHATRI**	Assistant Professor	L		Basic Civil Engineering	1FY3-11	3	0	0	3	**15**
			L		Basic Civil Engineering	1FY3-09	3	0	0	3	
			L		Basic Civil Engineering	1FY3-10	3	0	0	3	
			P		Basic Civil Engineering Lab	1FY3-29	0	0	6	6	
16	**Mr. AKASH PANWAR**	Assistant Professor	L		Basic Civil Engineering	1FY3-13	3	0	0	3	**15**
			P		Basic Civil Engineering Lab	1FY3-27	0	0	6	6	
			P		Basic Civil Engineering Lab	1FY3-30	0	0	6	6	
17	**Mr. MAYANK GUPTA**	Assistant Professor	L		Basic Civil Engineering	1FY3-12	3	0	0	3	**15**
			P		Basic Civil Engineering Lab	1FY3-28	0	0	6	6	
			P		Basic Civil Engineering Lab	1FY3-31	0	0	6	6	

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9 Time Table

9.1 Orientation Time Table

POORNIMA COLLEGE OF ENGINEERING								
DEPARTMENT OF CIVIL ENGINEERING								
IV SEM TIME TABLE (2021-2022)								
DAY	**BATCH**	**8:30-9:30 AM**	**9:30-10:30 AM**	**10:30-11:30 AM**		**12:10-1:10 PM**	**1:10-2:10 PM**	**2:10-3:10 PM**
THURS	**B1**	Tutor Interaction	HE (4CE4-06) (CB-04)	MT (4CE4-21) (CB-04)	**LUNCH**	CL (4CE4-25) (CB-04)		CT (4CE4-08) (CG-04)
	B2							
	B3							
FRI	**B1**	SOM (4CE4-05) (ONLINE)	HoD Interation (ONLINE)	BP (4CE4-07) (ONLINE)		BD (4CE4-23) (ONLINE)		MT (4CE4-21) (CB-04)
	B2							
	B3							
SAT	**B1**	**i3 day**				**i3 day**		
	B2							
	B3							

VI SEM

POORNIMA COLLEGE OF ENGINEERING								
DEPARTMENT OF CIVIL ENGINEERING								
VI SEM TIME TABLE (2021-2022)								
DAY	**BATCH**	**8:30-9:30 AM**	**9:30-10:30 AM**	**10:30-11:30 AM**		**12:10-1:10 PM**	**1:10-2:10 PM**	**2:10-3:10 PM**
THURS	**B1**	Tutor Interaction	DSS (6CE4-22) (CG-04)	QSVL (6CE4-23) (CG-04)	**LUNCH**	WERSDL (6CE4-24) (CG-04)	WERSDL (6CE4-24) (CG-04)	FEL (6CE4-25) (CG-04)
	B2							
	B3							
FRI	**B1**	DSS (6CE4-02) (ONLINE)	HoD Interation (ONLINE)	SA-II (6CE4-02) (ONLINE)		WSA (6CE3-01) (ONLINE)	EE (6CE4-03) (ONLINE)	EC (6CE4-05) (ONLINE)
	B2							
	B3							
SAT	**B1**	**i3 day**				**i3 day**		
	B2							
	B3							

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VIII SEM

POORNIMA COLLEGE OF ENGINEERING

DEPARTMENT OF CIVIL ENGINEERING

VIII SEM TIME TABLE (2021-2022)

DAY	BATCH	8:30-9:30 AM	9:30-10:30 AM	10:30-11:30 AM		12:10-1:10 PM	1:10-2:10 PM	2:10-3:10 PM
THURS	**B1**	OE-I/OE-II (ONLINE)	Tutor Interaction (ONLINE)	PPCM (8CE4-01) (ONLINE)				
	B2							
FRI	**B1**	PPCM Lab (8CE4-21)		Project Orientation CG-04	**L U N C H**	Project (AG-14 & CB- 20)	Project (WL-10A &B)	
	B2	Project (CB-20)					PD Lab (CG-04)	
SAT	**B1**	Project (CB-20)		Project (AG-14 & CB-20)		Project (PS) (WL-10 A& B)	PD Lab (CG-04)	
	B2	PPCM Lab (8CE4-21) AB-14					Project (WL-10A &B)	

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9.2 Academic Time Table

IV SEM Time Table Effective From Jan, 27, 2022

POORNIMA COLLEGE OF ENGINEERING
DEPARTMENT OF CIVIL ENGINEERING
IV SEM (PCE) TIME TABLE (2021-2022)

DAY/TIME	8:00 - 9:00	9:00 - 10:00	10:00 - 11:00	LUNCH 11:00 - 11:40	11:40 - 12:40	12:40 - 13:40	13:40 - 14:30	14:30 - 15:30
Mon	(4CE1-03) MEFA CG-11 KS	(4CE4-23) BPL AB-14 B1 ASB			(4CE4-05) SOM CG-11 LP	(4CE4-25) CTL WL-10 (B) B1 LKS		
		(4CE4-21) MTL AB-01 B2 SK				(4CE4-24) ASL CG-16 (B) B2 PS		
		(4CE4-25) CTL WL-10 (B) B3 LKS				(4CE4-21) MTL AB-01 B3 SK		
Tu	(4CE4-08) CT CG-11 PD	(4CE4-05) HE CG-11 JK	(4CE3-04) BEFCE A CG-11		(4CE4-07) BP CG-11 PS	(4CE4-05) SOM CG-11 LP	(4CE2-01) AEM CG-11 SJ	
We	(4CE1-03) MEFA CG-11 KS	(4CE4-06) HE CG-11 JK	(4CE4-07) BP CG-11 PS		(4CE3-04) BEFCE A CG-11	(4CE2-01) AEM CG-11 SJ	(4CE4-08) CT CG-11 PD	
Th	(4CE4-06) HE TUTE B1 JK CB-20	(4CE4-24) ASL CG-16 (B) B1 PS			(4CE2-01) AEM CG-11 SJ	(4CE4-05) SOM CG-11 LP	(4CE4-06) HE CG-11 JK	
	(4CE4-23) BPL AB-14 B2 ASB		(4CE4-05) SOM TUTE CG-16 (A) B2 LP					
	(4CE4-22) HEL AB-10 B3 JV		(4CE4-06) HE TUTE B3 JK CB-20					
Fr	(4CE4-21) MTL AB-01 B1 SK		(4CE4-08) CT CG-11 PD		(4CE4-05) SOM TUTE B1 LP CG-11	(4CE4-22) HEL AB-10 B1 JV		
	(4CE4-22) HEL AB-10 B2 JV				(4CE4-06) HE TUTE B2 JK CB-20	(4CE4-25) CTL WL-10 (B) B2 LKS		
	(4CE4-23) BPL AB-14 B3 ASB				(4CE4-24) ASL CG-16 (B) B3 PS		(4CE4-05) SOM TUTE CG-16 (A) B3 LP	
Sa	(4CE4-05) SOM CG-11 LP	(4CE4-08) CT CG-11 PD	(4CE4-06) HE CG-11 JK		(4CE2-01) AEM CG-11 SJ	(4CE3-04) BEFCE A CG-11	(4CE4-07) BP CG-11 PS	

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VI SEM Time Table Effective From Jan, 20, 2022

POORNIMA COLLEGE OF ENGINEERING
DEPARTMENT OF CIVIL ENGINEERING
VI SEM (PCE) TIME TABLE (2021-2022)

DAY/TIME	8:00 - 9:00	9:00 - 10:00	10:00 - 11:00	LUNCH 11:00 - 11:40	11:40 - 12:40	12:40 - 13:40	13:40 - 14:30	14:30 - 15:30
Mon	(6CE5-12) SHWM ASB CB-22 (6CE5-13) TEM CB-22 PS	(6CE4-02) SA-II CG-04 DV	(6CE4-04) DSS CG-04 BS		(6CE4-03) EE CG-04 MG	(6CE4-24) WERSDL CG-16(A) B1 LP (6CE4-22) DSSL CG-03 B2 BS (6CE4-23) QSVL CG-04 B3 JV		
Tu	(6CE3-01) WASA CG-04 LKS	(6CE4-04) DSS CG-04 BS	(6CE4-03) EE CG-04 MG		(6CE4-02) SA-II CG-04 DV	(6CE4-23) QSVL CG-16 (A) B1 JV (6CE4-25) FEL CG-04 B2 PG (6CE4-21) EDL MF-03 B3 VC		
We	(6CE5-12) SHWM ASB CB-22 (6CE5-13) TEM CG-04 PS	(6CE5-15) GIS & RS CB-15 PN (6CE5-14) BE CG-04 SKY	(6CE4-04) DSS CG-04 BS		(6CE4-05) E&C CG-04 JV	(6CE3-01) WASA CG-04 LKS	(6CE4-03) EE CG-04 MG	
Th	(6CE4-25) FEL CB-15 B1 PG (6CE4-21) EDL MF-03 B2 VC (6CE4-24) WERSDL CG-04 B3 LP	(6CE4-04) DSS CG-04 BS			(6CE4-22) DSSL CG-04 B1 BS (6CE4-23) QSVL CG-16 (A) B2 JV (6CE4-25) FEL CB-15 B3 PG		(6CE4-02) SA-II CG-04 DV	
Fr	(6CE4-21) EDL MF-03 B1 VC (6CE4-24) WERSDL CG-16(A) B2 LP (6CE4-22) DSSL CG-04 B3 BS	(6CE4-05) E&C CG-04 JV			(6CE4-02) SA-II CG-04 DV	(6CE5-15) GIS & RS CG-11 PN (6CE5-14) BE CG-03 SKY	(6CE4-03) EE CG-04 MG	
Sa	(6CE5-12) SHWM ASB CB-22 (6CE5-13) TEM CG-04 PS	(6CE4-02) SA-II CG-04 DV	(6CE5-16) GIS & RS CG-03 PN (6CE5-14) BE CG-04 SKY		(6CE4-04) DSS CG-04 BS	(6CE3-01) WASA CG-04 LKS	(6CE4-03) EE CG-04 MG	

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VIII SEM Time Table Effective From Jan, 20, 2022

POORNIMA COLLEGE OF ENGINEERING
DEPARTMENT OF CIVIL ENGINEERING
VIII SEM (PCE) TIME TABLE (2021-2022)

DAY/TIME	8:00 - 9:00	9:00 - 10:00	10:00 - 11:00	LUNCH 11:00 - 11:40	11:40 - 12:40	12:40 - 13:40	13:40 - 14:30	14:30 - 15:30
Mon	OE VC CB-15	(8CE7-50) PR MG/PN CB-20 B1 / (8CE7-50) PR MG/PN CG-16 (A) B2			(8CE4-01) PPCM CG-03 PG	(8CE7-50) PR MG/PN WL-10 B1,B2		
Tu	OE VC CB-15	(8CE7-50) PR CB-20 B1 MG/PN / (8CE4-22) PDL CG-16(A) B2 ASB			(8CE4-01) PPCM CG-03 PG	(8CE4-21) PPCML AB-14 DV		
We	OE VC CB-15	(8CE7-50) PR MG/PN WL-10(A) B1,B2			(8CE4-01) PPCM CG-03 PG	(8CE4-22) PDL CG-16(A) B1 ASB / (8CE4-21) PPCML AB-14 DV B2		
Th								
Fr								
Sa								

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10 Course Outcome Attainment Process:

10.1 Course Outcome Attainment Process

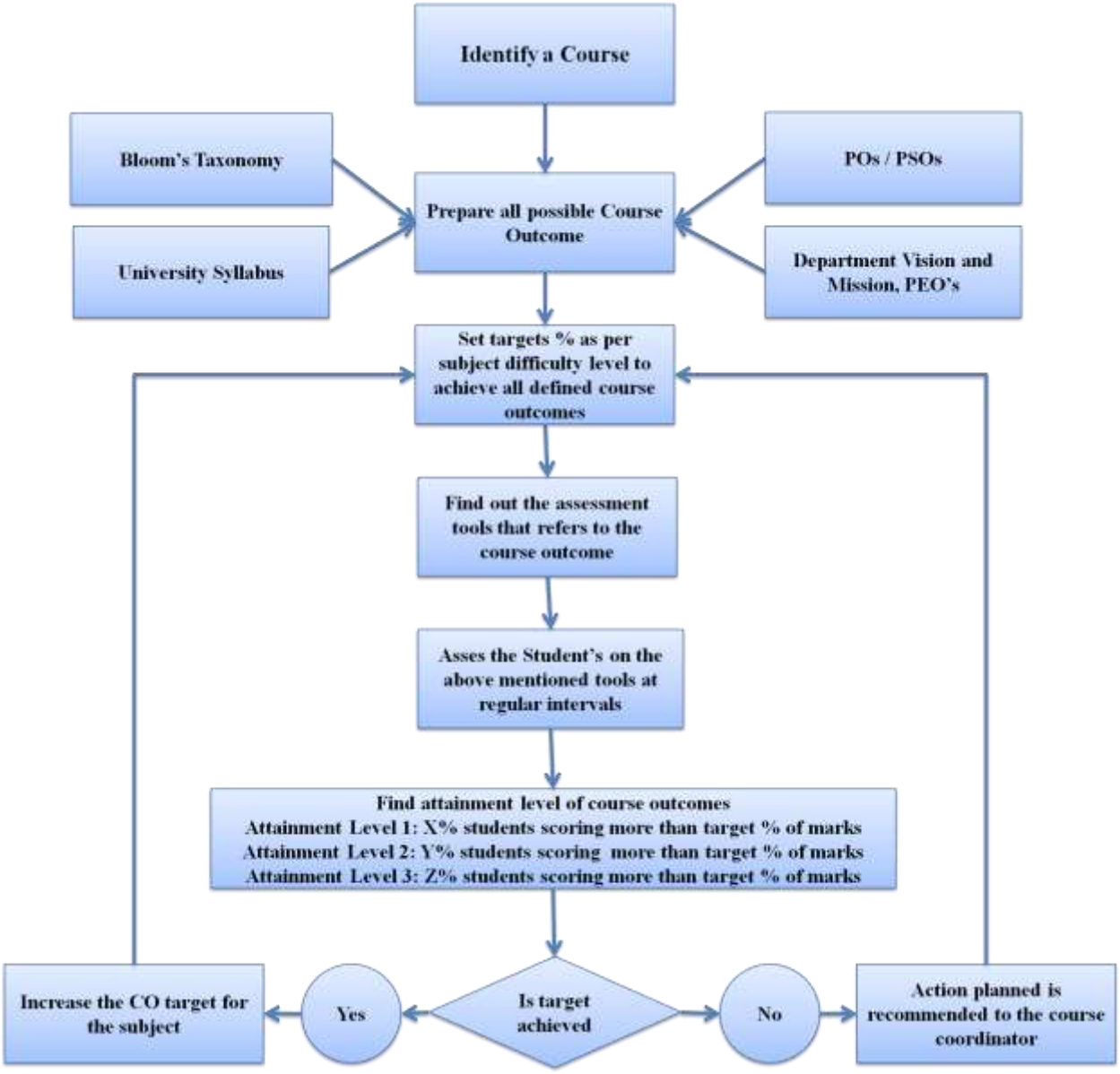

Figure. Course Outcome Attainment Process

10.2 List of CO & CO mapping with PO

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**	**1.00**	**1.00**

1 1	2F Y2-01	Engineering Mathematics -II	CO 1	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	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO 2	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	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO 3	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	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO 4	Students will be able to effectively analyze and apply appropriate mathematical technique to solve linear and non-linear partial differential equations.	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO 5	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**	-	-	-	-	-	-	-	-	-	-	-	-	-
1 2	2F Y2-03	Engineering Chemistry	CO 1	Describe characteristics of water, fuel and Engineering materials	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO 2	Determine of hardness of water and calorific value of fuels for Industrial as well as domestic purposes	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO 3	Compare different techniques of water treatment, fuel analysis, Manufacturing of engineering materials and corrosion protection methods	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO 4	Prepare the generic drugs or medicines by understanding the applications of organic reaction mechanism and manufacturing of engineering materials	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-
					2.00	**2.00**	-	-	-	-	-	-	-	-	-	-	-	-	-
1 3	2F Y1-04	Communication Skills	CO 1	Describe the process of communication, basics of Grammar and Writing and Literary Aspects	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
			CO 2	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																		
			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 Constr uction	CO 2	Understand about the types, properties, tests and uses of construction material.	2	-	-	-	-	2	-	-	-	-	-	1	2	-	1
			CO 3	Apply and differentiate about the foundation types with layout plan, temporary structure details with joints, and safety concerns.	2	-	-	-	-	-	2	-	-	-	-	1	1	2	2
			CO 4	Implement and analyze the flooring besides various attributes of masonry types with its merits and demerits.	-	-	2	-	1	-	-	-	-	-	-	1	1	2	-
			CO 5	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	CO 1	Understand the basic concept of geology for civil engineering.	3	2	2	1	-	-	-	-	-	-	-	-	2		2
			CO 2	Implementation process geological investigation process and their significance in civil engineering	3	2	2	2	-	-	-	-	-	-	-	-	1		2
			CO 3	Analyze the properties, behavior and engineering significance of rocks, mineral and geological features.	3	2	2	2	-	-	-	-	-	-	-	-	1	2	1
			CO 4	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	LO 1	Understand working of different type of surveying equipment's.	3	3											1	2	
			LO 2	An ability to determine the areas by using linear measurement methods.	2	3	2										1	2	1
			LO 3	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 Marerials 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		2	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	-	-	-	-	-	-	-	-	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**	**2.000**	**1.000**	-
	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**	-	-	-	-	-	-	-	-	-	**1.500**	**1.667**	**1.000**
	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					
					2.000	**2.000**	**2.000**	**2.000**	-	-	-	-	**1.67**	**2.000**	-	-	-	-	-
	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.																	
			LO 3	Create drawing of building masonry.	1	1	-	-		1	-	-	2	2	2	3	3	2	1
			LO 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	LO 1	Identify the instruments required for a particular survey problem	3	3	2										1	2	
			LO 2	Determine the height of an object by theodolite.	3	3	2										1	2	1
			LO 3	Prepare the map of area by Plane Table Surveying.	3	2	2	1									2		1
			LO 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	CO 1	Evaluate and analyze the Engineering Economy in Construction Field	2	3	2	-	-	-	-	-	-	-	-	-	1	2	-
			CO 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
					2.000	**2.400**	**2.600**	**1.000**	**1.000**	**2.000**	**1.000**	-	-	-	-	-	**1.400**	**1.500**	**1.250**
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	**2.333**	**3.000**	-	-	-	-	-	-	-	-	-	-	**1.75**	**1.75**	**2.500**
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**	-	-	-	-	-	-	-	-	-	**2.50**	**2.00**	-
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	-	-
					3.00	**1.60**	**2.00**	**1.33**	-	-	**1.00**	-	-	-	-	-	**3.00**	**2.00**	**1.00**
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	2	-	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 Discover town 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**
3 1	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**	-
3 2	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**

33	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**	-	-	-	**2.00**	**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				3	2	1
					1	**2**	**1**	**2**	-	-	-	1	1				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	CO2																	
			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**	**3.00**	-	**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**	**2.880**
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	**2.250**	**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**	-	-	**2.00**	-	**3.00**	-	-	**2.00**

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**	**2.6**	**3.0**	**2.0**	**1.5**	**1.0**	**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**

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**

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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 POStronglyMapped:(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																

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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	ForCO
2.	Post-MidTerm1	Direct	Marks	10	ForCO
3.	Quiz1	Direct	Marks	10	ForCO
4.	Quiz2	Direct	Marks	10	ForCO
5.	PreMidTerm2	Direct	Marks	10	ForCO
6.	Post MidTerm2	Direct	Marks	10	ForCO
7.	MidTerm1	Direct	Marks	20	ForCO
8.	MidTerm2	Direct	Marks	20	ForCO
9.	Assignment 1	Direct	Marks	10	ForCO
10.	Assignment 2	Direct	Marks	10	ForCO
11.	Workshop	Indirect	Rubrics	5	ForLO
12.	Seminar/SPL	Indirect	Rubrics	5	ForCO/LO
13.	Project (Minior NSP)	Indirect	Rubrics	20	ForLO
14.	Discussion	Indirect	Rubrics	5	ForLO
15.	Training	Indirect	Rubrics	20	ForLO
16.	Industrial Visit	Indirect	Rubrics	20	ForLO
17.	Or any other activity	Direct/ Indirect	Marks/ Rubrics	any	ForLO
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

CO1:3CSA101.1: 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 Decidedto bridgethegap

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).

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

_____

SESSION: 20___-___

NAME OF FACULTY: _____

DEPARTMENT: _____

CAMPUS: _____

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13.3 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	

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13.4 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

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13.5 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.

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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

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

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

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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.

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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

I[st] 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).

II[nd] 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).

III[rd] 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

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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:

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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: .....

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13.7.2 Detailed Lecture Note Format-2

POORNIMA
COLLEGE OF ENGINEERING

DETAILED LECTURE NOTES

PAGE NO. .....

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13.8 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, 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

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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			

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13.10 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

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

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				

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13.11 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**

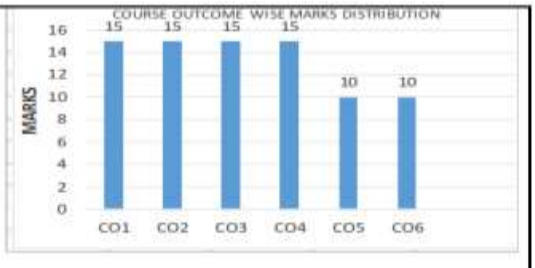
NOTE:- Read the guidelines given with each part carefully.

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

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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		

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POORNIMA
COLLEGE OF ENGINEERING

DEPARTMENT OF CIVIL ENGINEERING

CURRICULUM DELIVERY PLAN

OUTLINE-ODD SEM-2022-23

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

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

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Table of Contents

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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	Mr. Divya Vishnoi Assistant Professor , CE	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur
5	Final year student (Nominated by HoD)	Member	Shruti Sharma	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur
6	Pre-Final year student (Nominated by HoD)	Member	Pooja Meena	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur
7	Second year student (Nominated by HoD)	Member	Shreya Sharma	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

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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	Mr. Divya Vishnoi Assistant Professor	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur
5	Member	Chairman, PAC-CE	Mr. Laxmi Kant Saini Assistant Professor	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur
6	Member	Chairman, PAC-CE	Mr. Prateek Sharma Assistant Professor	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur
7	Member	Chairman, PAC-CE	Mr. Sonu Kumar Assistant Professor	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur
8	Member	Chairman, PAC-CE	Mr. Mayank Gupta 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	● Inclusion of suggestions for revising gaps

		Last Week	● 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	3713	MR. LAXMIKANT SAINI	9829204127	laxmi.saini@poornima.org	ASST PROFESSOR
3	4307	MR. DIVYA VISHNOI	8769090442	divya.vishnoi@poornima.org	ASST PROFESSOR
4	5382	Mr. SONU KUMAR	8560058069	sonukumaryadav050@gmail.com	ASST PROFESSOR
5	5386	MR. JITENDRA KUMAR	8003666051	jitendra.kumar@poornima.org	ASST PROFESSOR
6	5405	MR. BALWAN	8769040200	sheshna077@gmail.com	ASST PROFESSOR
7	5772	Mr. AKASH PANWAR	8383010465	akashpanwar159@yahoo.com	ASST PROFESSOR
8	5958	Mr. VISHAL SAIN	8952000292	vishal.sain@poornima.org	ASST PROFESSOR
9	6136	Ms. SUPRIYA BANSAL	8432947266	supriya.bansal@poornima.org	ASST PROFESSOR
10	6358	DR. MANOJ GATTANI	7058368351	manoj.gattani@poornima.org	PROFESSOR
11	6904	Mr. PRATEEK SHARMA	7014337097	sharmaprateek63@gmail.com	ASST 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
15	4752	MR. MUKUL NAMA	9784032091	mukul.nama@poornima.org	ASST PROFESSOR
16	4642	MR. RITURAJ SINGH RATHORE	9406871872	rituraj.rathore@poornima.org	ASST PROFESSOR
17	3405	DR. PRAN NATH DADHICH	9460907039	pran.dadhich@poornima.org	PROFESSOR & Head

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5 Institute Academic Calendar

JULY 2022

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

AUGUST 2022

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 2022

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 2022

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

NOVEMBER 2022

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 2022

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) • Accredited by NBA

ACADEMIC CALENDAR 2022-23*#

ODD SEMESTER

JULY 2022

Practical Training [After VI Sem.]
Practical Training [After IV Sem.]
RTU THEORY EXAMINATION OF FIRST YEAR [EVEN SEM 2021-22]
Practical Training [After II Sem.]

AUGUST 2022

RTU THEORY EXAMINATION OF SECOND YEAR [EVEN SEM 2021-22]

Tuesday 16	Commencement of Classes-Odd Semesters B.Tech III Sem.
Wednesday 17	Commencement of Classes-Odd Semesters B.Tech VII Sem.
Monday 15	Celebration of Independence Day
Tuesday 16 to Thursday 18	Orientation programme-B.Tech. III Sem.
Wednesday 17 to Saturday 20	Orientation programme-B.Tech. VII Sem.

SEPTEMBER 2022

Thursday 01	Commencement of Classes-Odd Semesters V Sem.
Thursday 01 to Saturday 03	Orientation programme-B. Tech. V Sem.
Monday 05	Faculty Felicitation Program, Celebration of Teachers' Day, Blood Donation Camp & activities under WISE
Thursday 15	Engineers' Day
Monday 19 to Saturday 24	First Mid Term Theory & Practical Exam for B.Tech III Sem

OCTOBER 2022

Thursday 06	Commencement of Classes-Odd Semesters I Sem.
Thursday 06 to Monday 31	Orientation programme-B. Tech. I Sem.
Sunday 02	Annual Day 'KALANIDHI' & Prize distribution ceremony
Wednesday 05	Manthan- Inter-college Debate Competition
Friday 14 to Thursday 20	First Mid Term Theory & Practical Exam for B.Tech V & VII Sem

NOVEMBER 2022

Saturday 12	Last Teaching Day for B.Tech III Sem
Monday 14 to Saturday 19	Second Mid-Term Theory & Practical Exam for B.Tech III Sem
Monday 21 to Wednesday 23	End-Term Practical Exams for B.Tech III Sem

DECEMBER 2022

Saturday 03	Last Teaching Day for B.Tech V & VII Sem
Monday 05 to Saturday 10	Second Mid-Term Theory & Practical Exam for B.Tech V & VII Sem
Monday 12 to Wednesday 14	End-Term Practical Exams for B.Tech V & VII Sem
As per RTU Notification	End-Term Theory Exams for B.Tech III, V & VII Sem
Monday 12 to Saturday 17	First Mid Term Theory & Practical Exam for B.Tech I Sem

JANUARY 2023

Saturday, January 28	Last Teaching Day for B.Tech I Sem
Monday 30 to Saturday 04	Second Mid Term Theory & Practical Exam for B.Tech I Sem

FEBRUARY 2023

Monday 06 to Wednesday 08	End-Term Practical Exams for B.Tech I Sem
As per RTU Notification	End-Term Theory Exams for B.Tech I Sem

HOLIDAYS IN ODD SEMESTER

Bakrid / Eid ul-Adha*	Sunday, July 10, 2022
Raksha Bandhan	Thursday, August 11, 2022
Shri Krishna Janmashtami	Friday, August 19, 2022
Vijay Dashmi	Wednesday, October 5, 2022
Diwali Break	Saturday, October 22 to Wednesday, October 26
Guru Nanak Jayanti	Tuesday, November 8, 2022
Christmas	Sunday, December 25, 2022
Winter Break	As per RTU Examination Schedule
New Year Day	December 31, 2022 to January 01, 2023

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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	Monday, October 31, 22	Tuesday, August 16, 22	Monday, September 19, 22	Wednesday, August 17, 22
2	Orientation programme	Monday, October 31, 22 to Saturday, October 29, 22	Tuesday, August 16, 22 to Thursday August18, 22	Monday, September 19, 22 to Wednesday, September 21, 22	Wednesday, August 17, 22 to Saturday, August 20, 22
3	Date of submission of question papers by faculty members to secrecy for 1st Mid-term	Tuesday, December 06, 22	Saturday, October 01, 22	Tuesday, November 01, 22	Friday, September 16, 22
4	I Mid Term Theory & Practical Exam	Monday, December 12, 22 to Saturday, December 17, 22	Monday, October 10, 22 to Saturday, October 15, 22	Monday, November 7, 22 to Saturday, November 12, 22	Monday, September 26, 22 to Friday, October 30, 22
5	Showing evaluated answer books of 1st Mid-term exam to students in respective classes	Upto Wednesday, December 21, 22	Upto Saturday, Octomber 22, 22	Upto Monday, November 21, 2022	Upto Saturday, November 5, 2022
6	Last date of submission of Evaluated Answer Books and Mark of First Mid-term Theory & Practical exam to Exam and Secrecy Cell respectively	Upto Monday, December 26, 22	Upto Saturday, November 12, 2022	Upto Saturday, November 26, 2022	Upto Monday, November 7, 2022

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7	Date of submission of question papers by faculty members to secrecy for 2nd Mid-term	Friday, December 09, 22	Thursday, November 17, 2022	Wednesday, November 30, 2022	Monday, October 17, 2022
8	Revision classes	To be declared later according to RTU Exam Schedule			
9	Last Teaching Day	Monday, January 09, 2023	Saturday, December 17, 22	Friday, December 30, 2022	Monday, November 28, 2022
10	2nd Mid-term theory & Practical Exams	Friday, February 10, 2023 to Friday 17, 2023	Monday - Saturday, Decmber 19-24 , 22	Monday-Saturday, January 02-07, 2023	Tuesday -Saturday, November 29-December 03, 2022
11	End-Term Practical Exams	Monday, February 20, 2023	Tuesday, January 03, 23	Wednesday, January 18, 2023	Monday, December 12, 2022
(B) Events and Activities					
12	Alumni Interaction 1	Tuesday, August 30, 2022			
13	Teachers Day	Monday, September 05, 2022			
14	Alumni Interaction 2	Monday, October 03, 2022			
15	Industrial Excursion	Friday-Wednesday,October 14-19 ,2022			
16	Workshop on Road Software for survey design	Monday-Wednesday,October 31-November 2 ,2022			
17	Site visit at JECC	Friday, November 11, 2022			
18	Visit at CEG GEOTECH LAB	Friday, December 02, 2022			
19	Visit At 'BISALPUR DAM'	Friday, December 09, 2022			
20	Teachers Day Celebration	Monday, September 05, 2022			
(C) Holidays					
21	Bakrid / Eid ul-Adha"	Sunday, July 10, 2022			
22	Raksha Bandhan	Thursday, August 11, 2022			

23	Shri Krishna Janmashtami	Friday, August 19, 2022
24	Vijay Dashmi	Wednesday, October 05, 2022
25	Diwali Break	Saturday, October 22 -26, 2022
26	Guru Nanak Jayanti	Tuesday, November 08, 2022
27	Christmas	Sunday, December 25, 2022
28	Winter Break	As per RTU examination schedule

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

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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
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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

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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	Environmental Monitoring 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

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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.

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9 Department Load Allocation

POORNIMA COLLEGE OF ENGINEERING,JAIPUR								
DEPARTMENT OF CIVIL ENGINEERING								
FACULTY SUBJECT WISE ALLOCATION SESSION 2022-23(ODD)								
Sr No.	**Faculty Name**	**Sec**	**SUB. CODE**	**SUBJECT NAME**	**L**	**T**	**P**	**Load**
1	Dr. Manoj Gattani	A	7CE6-60.1	Environmental Impact Analysis	3	0	0	3
	Dr. Manoj Gattani	A	7CE4-24	Environmental Monitoring and Design Lab	0	0	6	6
	Dr. Manoj Gattani	A	3CE4-30	Practical Training	0	0	1	1
	Dr. Manoj Gattani	A	7CEPR	Project	0	0	2	2
					3	**0**	**9**	**12**
2	Dr. P. N. Dadhich	A	3CE3-08	Engineering Geology	3	0	0	3
	Dr. P. N. Dadhich	A	3CE4-25	Geology Lab	0	0	6	6
					3	**0**	**6**	**9**
3	Mr. AKASH PANWAR	A	1FY3-13	Basic Civil Engineering	3	0	0	3
	Mr. AKASH PANWAR	A	1FY3-27	Basic Civil Engineering Lab	0	0	6	6
	Mr. AKASH PANWAR	A	1FY3-31	Basic Civil Engineering Lab	0	0	6	6
					3	**0**	**12**	**15**
4	Mr. Balwan Seshma	A	3CE3-07	Building Materials and Construction	3	0	0	3
	Mr. Balwan Seshma	A	3CE4-24	Civil Engineering Materials Lab	0	0	6	6
	Mr. Balwan Seshma	A	7CEPR	Project	0	0	1	1
	Mr. Balwan Seshma	A	3CE-NSP	NSP	0	0	2	2
	Mr. Balwan Seshma	A	PMTPO	I3 Day	1	0	0	1
	Mr. Balwan Seshma	A	3CE4-31	Industrial training	2	0	0	2

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					6	**0**	**9**	**15**
5	Mr. Divya Vishnoi	A	5CE4-03	Design of Concrete Structures	3	0	0	3
	Mr. Divya Vishnoi	A	5CE4-21	Concrete Structures Design	0	0	6	6
	Mr. Divya Vishnoi	A	PMTPO	Placement Coordinator	0	0	2	2
	Mr. Divya Vishnoi	A	7CEPR	Project	0	0	2	2
					3	**0**	**10**	**13**
6	Mr. MAYANK GUPTA	A	1FY3-09	Basic Civil Engineering	3	0	0	3
	Mr. MAYANK GUPTA	A	1FY3-29	Basic Civil Engineering Lab	0	0	6	6
	Mr. MAYANK GUPTA	A	1FY3-11	Basic Civil Engineering	3	0	0	3
	Mr. MAYANK GUPTA	A	1FY3-10	Basic Civil Engineering	3	0	0	3
					9	**0**	**6**	**15**
7	Ms. SUPRIYA BANSAL	A	3CE4-23	Computer Aided Civil Engineering Drawing	0	0	6	6
	Ms. SUPRIYA BANSAL	A	5CE4-05	Water Resource Engineering	3	0	0	3
	Ms. SUPRIYA BANSAL	A	5CE4-23	Water Resource Engineering Design	0	0	6	6
					3	**0**	**12**	**15**
8	Mr. VISHAL SAIN	A	5CE4-02	Structural Analysis-I	3	3	0	6
	Mr. VISHAL SAIN	A	7CE6-60.2	Disaster Management	3	0	0	3
	Mr. VISHAL SAIN	A	7CEPR	Project	0	0	1	1
	Mr. VISHAL SAIN	A	3CE4-30	Practical Training	0	0	1	1
	Mr. VISHAL SAIN	A	7CE4-40	Seminar	0	0	2	2
					6	**3**	**4**	**13**
9	Mr. Laxmi Kant Saini	A	3CE3-04	Engineering Mechanics	2	3	0	5
	Mr. Laxmi Kant Saini	A	7CEPR	Project	0	0	1	1

	Mr. Laxmi Kant Saini	A	7CE4-40	Seminar	0	0	2	2
	Mr. Laxmi Kant Saini	A	3CE4-21	Surveying Lab	0	0	6	6
					2	**3**	**9**	**14**
10	Mr. SONU KUMAR	A	NAAC	NAAC-COORDINATOR	0	0	4	4
	Mr. SONU KUMAR	A	5CE4-04	Geotechnical Engineering	4	0	0	4
	Mr. SONU KUMAR	A	5CE4-22	Geotechnical Engineering Lab	0	0	6	6
	Mr. SONU KUMAR	A	7CEPR	Project	0	0	1	1
					4	**0**	**11**	**15**
11	Prateek Sharma	A	3CE3-05	Surveying	3	0	0	3
	Prateek Sharma	A	7CE4-40	Seminar	0	0	2	2
	Prateek Sharma	A	7CEPR	Project	0	0	1	1
	Prateek Sharma	A	7CE7-30	Industrial training	2	0	0	2
	Prateek Sharma	A	3CE-NSP	NSP	0	0	2	2
	Prateek Sharma	A	5CE5-13	Ground Improvement Techniques	3	0	0	3
					3	**0**	**9**	**12**
12	Dr. SIDDHARTH	A	1FY3-12	Basic Civil Engineering	3	0	0	3
	Dr. SIDDHARTH	A	1FY3-28	Basic Civil Engineering Lab	0	0	6	6
	Dr. SIDDHARTH	A	1FY3-30	Basic Civil Engineering Lab	0	0	6	6
					3	**0**	**12**	**15**
13	DR. PANKAJ DHEMLA	A	7CE4-30	Practical Training	0	0	2	2
	DR. PANKAJ DHEMLA	A	7CEPR	Project	0	0	1	1
	DR. PANKAJ DHEMLA	A	5CE5-14	Town Planning	3	0	0	3
					3	**0**	**3**	**6**

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14	MR. JITENDRA KUMAR	A	7CE4-40	Seminar	0	0	2	2
	MR. JITENDRA KUMAR	A	7CE4-22	Professional Practices & Field Engineering Lab	0	0	6	6
	MR. JITENDRA KUMAR	A	3CE4-31	Industrial training	2	0	0	2
	MR. JITENDRA KUMAR	A	PMTPO	I3 Day	1	0	0	1
	MR. JITENDRA KUMAR	A	7CEPR	Project	0	0	1	1
					3	**0**	**9**	**12**
15	MR. AYUSH MEENA	A	7CE4-40	Seminar	0	0	2	2
	MR. AYUSH MEENA	A	5CE5-12	Disaster Management	3	0	0	3
	MR. AYUSH MEENA	A	5CE3-01	Construction Technology & Equipments	2	0	0	2
	MR. AYUSH MEENA	A	3CE-NSP	NSP	0	0	2	2
	MR. AYUSH MEENA	A	5CE7-30	Industrial training	0	0	2	2
	MR. AYUSH MEENA	A	7CEPR	Project	0	0	1	1
					5	**0**	**7**	**12**
16	MR. MUKUL NAMA	A	5CE5-15	Repair and Rehabilitation of Structures	2	0	0	2
	MR. MUKUL NAMA	A	7CE4-01	Transportation Engineering	3	0	0	3
	MR. MUKUL NAMA	A	7CE4-21	Road Material Testing Lab	0	0	6	6
	MR. MUKUL NAMA	A	7CE4-30	Practical Training	0	0	2	2
					5	**0**	**8**	**13**
17	MR. RITURAJ SINGH RATHORE	A	NAAC	ATTAINMENT-COORDINATOR	0	0	2	2
	MR. RITURAJ SINGH RATHORE	A	3CE4-22	Fluid Mechanics Lab	0	0	6	6
	MR. RITURAJ SINGH RATHORE	A	3CE3-06	Fluid Mechanics	3	0	0	3
	MR. RITURAJ SINGH RATHORE	A	7CE4-40	Seminar	0	0	2	2

		3	0	1 0	13

10 Time Table

10.1 Academic Time Table

POORNIMA COLLEGE OF ENGINEERING
DEPARTMENT OF CIVIL ENGINEERING
III SEM

Class Location: CG-09
WEF: 18.08.2022
Tutor Name: Mr. Prateek Sharma

	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	7 14:50 - 15:50
Mo	3CE1-02 TC CG-9 Shalini Shah	3CE4-08 EG CG-9 Pran Nath Dadhich	3CE4-07 BMC CG-9 Balwan		3CE4-05 SURVEYING CG-9 Prateek Sharma	3CE4-25 GEOLOGY LAB Batch 1 CB-22 Pran Nath Dadhich 3CE4-23 CACED Lab Batch 2 AB-14 Supriya Bansal 3CE4-22 FM LAB Batch 3 AB-10 Rituraj Singh Rathore		Add on Course Respective Faculty Member
Tu	3CE4-08 EG CG-9 Pran Nath Dadhich	3CE2-01 AEM - I CG-9 Shilpi Jain	3CE1-02 TC CG-9 Shalini Shah		3CE4-22 FM LAB Batch 1 AB-10 Rituraj Singh Rathore 3CE4-21 SURVEYING LAB Batch 2 CB-22 Laxmikant Saini 3CE4-25 GEOLOGY LAB Batch 3 CG-9 Pran Nath Dadhich	3CE4-06 FM CG-9 Rituraj Singh Rathore	Add on Course Respective Faculty Member	
We	3CE4-23 CACED Lab Batch 1 AB-14 Supriya Bansal 3CE3-04 EM tut Batch 2 CB-22 Laxmikant Saini 3CE4-24 CEM Batch 3 WL-10 LAB Balwan	3CE7-30 Industrial Training Batch 2 CB-22 Mahesh Kumar 3CE2-01 AEM - I Batch 3 CG-9 Tut. Shilpi Jain	3CE3-04 EM CG-9 Laxmikant Saini	LUNCH	3CE4-06 FM CG-9 Rituraj Singh Rathore	3CE2-01 AEM - I CG-9 Shilpi Jain	3CE4-07 BMC CG-9 Balwan	Add on Course Respective Faculty Member
Th	3CE2-01 AEM - I Batch 1 CG-9 Tut. Shilpi Jain 3CE4-22 FM LAB Batch 2 AB-10 Rituraj Singh Rathore 3CE4-21 SURVEYING LAB Batch 3 CB-22 Laxmikant Saini	3CE4-24 CEM Batch 1 WL-10 LAB Balwan	3CE4-07 BMC CG-9 Balwan		3CE7-30 Industrial Training Batch 1 CG-9 Laxmikant Saini 3CE2-01 AEM - I Batch 2 CB-22 Tut. Shilpi Jain 3CE3-04 EM tut Batch 3 CB20 Laxmikant Saini	3CE3-04 EM CG-9 Laxmikant Saini	3CE4-05 SURVEYING CG-9 Prateek Sharma	NSP Respective Faculty Member
Fr	3CE2-01 AEM - I CG-9 Shilpi Jain	3CE4-05 SURVEYING CG-9 Prateek Sharma	3CE3-04 EM tut Batch 1 CG-9 Laxmikant Saini 3CE4-24 CEM Batch 2 WL-10 LAB Balwan 3CE7-30 Industrial Training Batch 3 CB-22 Nikhil Gattani		3CE4-21 SURVEYING LAB Batch 1 CB-22 Laxmikant Saini 3CE4-25 GEOLOGY LAB Batch 2 CG-9 Pran Nath Dadhich 3CE4-23 CACED Lab Batch 3 AB-14 Supriya Bansal	3CE4-06 FM CG-9 Rituraj Singh Rathore	NSP Respective Faculty Member	
Sa	I3 Activity Prateek Sharma	I3 Activity			I3 Activity			

Time Table Coordinators , HOD, Vice Principal, Director PCE

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POORNIMA COLLEGE OF ENGINEERING
DEPARTMENT OF CIVIL ENGINEERING
V SEM

Class Location: CG-03
WEF: 20.09.2022
Tutor Name: Mr. Balwan Sheshma

	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	7 14:50 - 15:50
Mo	5CE5-12 DM (Group 1) CG-3 Divya Vishnoi 5CE5-13 TP (Group 2) CB-22 Sonu Kumar	5CE5-14 RARS (Group 1) CG-3 Pankaj Dhemla 5CE5-15 GIT (Group 2) CB20 Mukul Nama	5CE3-01 CTE CG-3 Rituraj Singh Rathore		5CE4-04 GE CG-3 Sonu Kumar	5CE7-30 Industrial Training CG-3 Ayush Meena	5CE4-03 DCS CG-3 Divya Vishnoi	Add on Course Respective Faculty Member
Tu	5CE5-12 DM (Group 1) CG-3 Divya Vishnoi 5CE5-13 TP (Group 2) CB20 Sonu Kumar	5CE4-03 DCS CG-3 Divya Vishnoi	5CE4-04 GE CG-3 Sonu Kumar		5CE4-04 GE CG-3 Sonu Kumar	5CE4-02 SA - I CG-3 Vishal Sain	5CE7-30 Industrial Training CG-3 Ayush Meena	Add on Course Respective Faculty Member
We	5CE5-12 DM (Group 1) CG-3 Divya Vishnoi 5CE5-13 TP (Group 2) CB20 Sonu Kumar	5CE4-04 GE CG-3 Sonu Kumar	5CE3-01 CTE CG-3 Rituraj Singh Rathore	LUNCH	5CE4-05 WRE CG-3 Supriya Bansal	5CE4-21 CSD Lab (Batch 1) CG-3 Divya Vishnoi 5CE4-22 GE LAB (Batch 2) CB20 Sonu Kumar 5CE4-23 WRED Lab (Batch 3) CB-22 Supriya Bansal		Add on Course Respective Faculty Member
Th	5CE4-05 WRE CG-3 Supriya Bansal	5CE5-14 RARS (Group 1) CG-3 Pankaj Dhemla 5CE5-15 GIT (Group 2) CB20 Mukul Nama	5CE4-02 SA - I CG-3 Vishal Sain		5CE4-03 DCS CG-3 Divya Vishnoi	5CE4-22 GE LAB (Batch 1) CB20 Sonu Kumar 5CE4-23 WRED Lab (Batch 2) CG-3 Supriya Bansal 5CE4-21 CSD Lab (Batch 3) CB-22 Divya Vishnoi		NSP Respective Faculty Member
Fr	5CE4-02 SA - I (Batch 1) CG-3 Tut. Vishal Sain 5CE4-21 CSD Lab (Batch 2) CB-22 Divya Vishnoi 5CE4-22 GE LAB (Batch 3) CB20 Sonu Kumar	5CE4-23 WRED Lab (Batch 1) CG-3 Supriya Bansal 5CE4-02 SA - I (Batch 3) CB-15 Tut. Vishal Sain	5CE4-02 SA - I (Batch 2) CG-4 Tut. Vishal Sain 5CE4-22 GE LAB (Batch 3) CB20 Sonu Kumar		5CE5-14 RARS (Group 1) CB20 Pankaj Dhemla 5CE5-15 GIT (Group 2) CG-3 Mukul Nama	5CE4-02 SA - I CG-3 Vishal Sain	5CE4-05 WRE CG-3 Supriya Bansal	NSP Respective Faculty Member
Sa	I3 Activity Mr. Balwan Sharma	I3 Activity			I3 Activity			

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POORNIMA COLLEGE OF ENGINEERING
DEPARTMENT OF CIVIL ENGINEERING
VII SEM

Class Location: CG-04
WEF: 18.08.2022
Tutor Name: Mr. Divya Vishnoi

	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	7 14:50 - 15:50
Mo	7CE4-01 TE CG-4 Mukul Nama	7CE4-23 SS LAB (Batch 1) CG-4 Shalini Shah 7CE7-40 Seminar (Batch 2) CG-5 Prateek Sharma / Jitendra Kumar 7CE4-24 EMAD LAB (Batch 3) MF-03 Manoj Gattani			7CE6-60.1 EIA (Group 1) CG-4 Manoj Gattani 7CE6-60.2 DM (Group 2) CB-3 Vishal Sain	7CE4-21 RMT LAB (Batch 1) WL-10 Mukul Nama 7CE4-23 SS LAB (Batch 2) CG-4 Shalini Shah 7CE4-22 PPAFE LAB (Batch 3) CB-3 Prateek Sharma		Add on Course Respective Faculty Member
Tu	7CE7-40 Seminar (Batch 1) CG-5 Vishal Sain / Laxmikant Saini 7CE4-22 PPAFE LAB (Batch 2) CB-3 Prateek Sharma 7CE4-21 RMT LAB (Batch 3) WL-10 Mukul Nama	7CE4-01 TE CG-4 Mukul Nama			7CE6-60.1 EIA (Group 1) CG-4 Manoj Gattani 7CE6-60.2 DM (Group 2) CB-3 Vishal Sain	7CE7-30 Practical Training (Batch 1) CG-4 Mukul Nama 7CE7-30 Practical Training (Batch 2) CB-3 Prateek Sharma 7CE7-30 Practical Training (Batch 3) CG-5 Prateek Sharma	7CE6-60.1 EIA (Group 1) CG-4 Manoj Gattani 7CE6-60.2 DM (Group 2) CB-3 Vishal Sain	Add on Course Respective Faculty Member
We	7CE4-24 EMAD LAB (Batch 1) MF-03 Manoj Gattani 7CE4-21 RMT LAB (Batch 2) CB-3 Mukul Nama 7CE7-40 Seminar (Batch 3) CG-5 Ayush Meena / Rituraj Singh Rathore	7CE4-01 TE CG-4 Mukul Nama			7CE4-22 PPAFE LAB (Batch 1) CB-3 Prateek Sharma 7CE4-24 EMAD LAB (Batch 2) MF-03 Manoj Gattani 7CE4-23 SS LAB (Batch 3) CG-4 Shalini Shah		PROJECT Respective Faculty Member	Add on Course Respective Faculty Member
Th								
Fr								
Sa								

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Sitapura, JAIPUR

11 Course Outcome Attainment Process:

11.1 Course Outcome Attainment Process

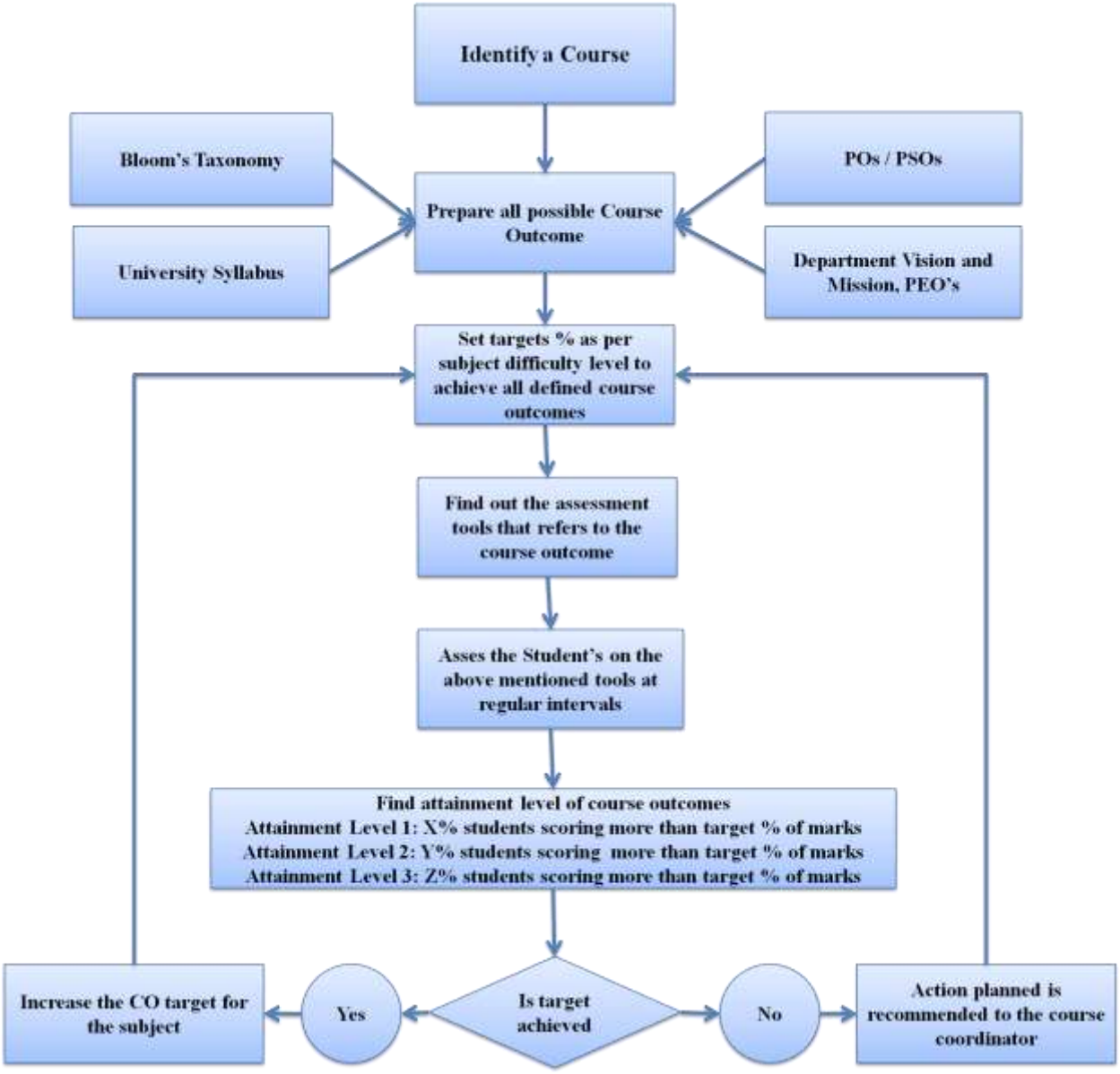

Figure. Course Outcome Attainment Process

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**	**1.00**	**1.00**

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																		
			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		2	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	-	-	-	-	-	-	-	-	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**	**2.000**	**1.000**	-
	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**	-	-	-	-	-	-	-	-	-	**1.500**	**1.667**	**1.000**
	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					
					2.000	**2.000**	**2.000**	**2.000**	-	-	-	-	**1.67**	**2.000**	-	-	-	-	-
	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
					2.000	**2.400**	**2.600**	**1.000**	**1.000**	**2.000**	**1.000**	-	-	-	-	-	**1.400**	**1.500**	**1.250**
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	**2.333**	**3.000**	-	-	-	-	-	-	-	-	-	-	**1.75**	**1.75**	**2.500**
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**

					8 0	**0 0**	**0 0**											**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		2	-	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 Discover town 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**
3 1	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**	-
3 2	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**

33	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				3	2	1
					1	**2**	**1**	**2**	-	-	-	1	1				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	—

			O 3	based on the geotechnical aspects.																	
					1.67	**1.00**	**2.33**	-	-	-	-	-	-	-	-	-	**1.33**	**2.00**	-
34	7CE4-01	Transportation Engineering	CO 1	understand the basics of highway construction, material and planning.	3	2	1			-	-	-	1	-	-	-	1	1	
			CO 2	Apply the concepts road construction in highway development	3	2	2		1	1	-	-	-	-	-	-	2	1	
			CO 3	Analyze the various equipment and advance technology used in road construction	2	2	3		3	-	-	-	-	-	-	-	2		
			CO 4	Evaluate the construction process for railway Engineering and airport Engineering	3	2	3		2	-	-	-	-	-	-	-	2	2	
			CO 5	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	CO 1	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
			CO 2	Apply the concepts to practical applications in telecommunication	3	2	-	-	-	-	-	-	3	-	-	-	-	-	2
			CO 3	Analyse communication systems in both the time and frequency domains.	3	2	3	-	-	-	-	-	3	-	-	-	-	-	2
			CO 4	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	LO 2																
			LO 3	Analysis of Estimation and Valuation methods of buildings and properties.	2	2	3										2		1
					2.00	**2.67**	**2.33**	-	-	-	-	-	-	-	-	-	**1.33**	**2.000**	**1.000**
	7CE4-23	Soft Skills Lab	LO 1	To develop formal communication skills in a work place.															
			LO 2	To Enhancing team building and time management skills by working in group activities															
			LO 3	To enable the ability of critical & lateral thinking to present themselves confidently in job interviews.															
					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7CE4-24	Environmental Monitoring and Design Lab	LO 1	Understanding water and waste water treatment plant process and design	2												2		
			LO 2	Apply various methods to measure air, noise, water and waste water pollution		3												3	
			LO 3	Apply various equipment, technology to demonstrate air , noise pollution, water and waste water treatment process	2	3												2	3
			LO 4	Examine and Analyze the quantification of air and noise pollutants, water and waste water pollution	2		3												2
			LO 5	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	LO 1	Participate in the projects in industries during his or her industrial training.	2	-	-	-		-					-		-	-	
			LO 2	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**	**3.00**	-	**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	**2.250**	**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**	-	-	**2.00**	-	**3.00**	-	-	**2.00**

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**	**2.6**	**3.0**	**2.0**	**1.5**	**1.0**	**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. **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** 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.

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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																

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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	ForCO
2.	Post-MidTerm1	Direct	Marks	10	ForCO
3.	Quiz1	Direct	Marks	10	ForCO
4.	Quiz2	Direct	Marks	10	ForCO
5.	PreMidTerm2	Direct	Marks	10	ForCO
6.	Post MidTerm2	Direct	Marks	10	ForCO
7.	MidTerm1	Direct	Marks	20	ForCO
8.	MidTerm2	Direct	Marks	20	ForCO
9.	Assignment 1	Direct	Marks	10	ForCO
10.	Assignment 2	Direct	Marks	10	ForCO
11.	Workshop	Indirect	Rubrics	5	ForLO
12.	Seminar/SPL	Indirect	Rubrics	5	ForCO/LO
13.	Project (Minior NSP)	Indirect	Rubrics	20	ForLO
14.	Discussion	Indirect	Rubrics	5	ForLO
15.	Training	Indirect	Rubrics	20	ForLO
16.	Industrial Visit	Indirect	Rubrics	20	ForLO
17.	Or any other activity	Direct/ Indirect	Marks/ Rubrics	any	ForLO
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

CO1:3CSA101.1: 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 Decidedto bridgethegap

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).

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

_____

SESSION: 20___-___

NAME OF FACULTY: _____

DEPARTMENT: _____

CAMPUS: _____

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14.3 ABC Analysis Format

POORNIMA
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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	

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14.4 Blown-up Format

POORNIMA

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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**

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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

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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

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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

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

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

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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.

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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

I[st] 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).

II[nd] 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).

III[rd] 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

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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:

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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: .....

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14.7.2 Detailed Lecture Note Format-2

POORNIMA
COLLEGE OF ENGINEERING

DETAILED LECTURE NOTES

PAGE NO. .....

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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, 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

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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			

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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

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

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				

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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**

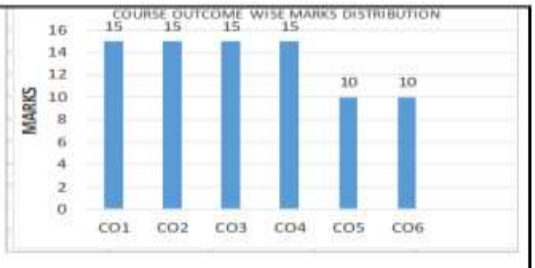
NOTE:- Read the guidelines given with each part carefully.

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

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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		

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