



*Shiksha Mandal's*

# **BAJAJ INSTITUTE OF TECHNOLOGY, PIPRI, WARDHA**

## **CRITERION-I**

### **Metric: 1.1.1**

**The Institution ensures effective curriculum planning and delivery through a well-planned and documented process including Academic calendar and conduct of continuous internal Assessment**

### 1.1.1.

*The Institution ensures effective curriculum delivery through a well-planned and documented process including academic calendar and conduct of internal assessment.*

**Process Flow:**

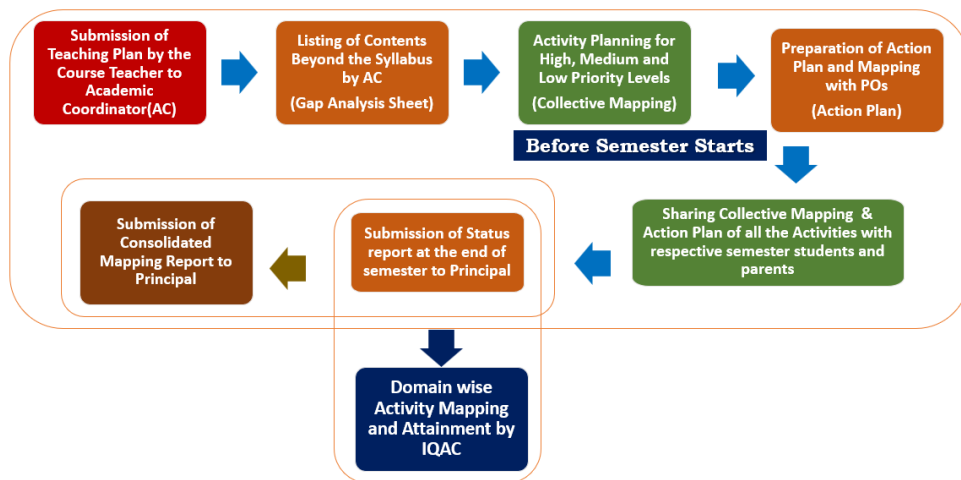


Figure 1: Process Flow of Curriculum GAP Analysis and Attainment

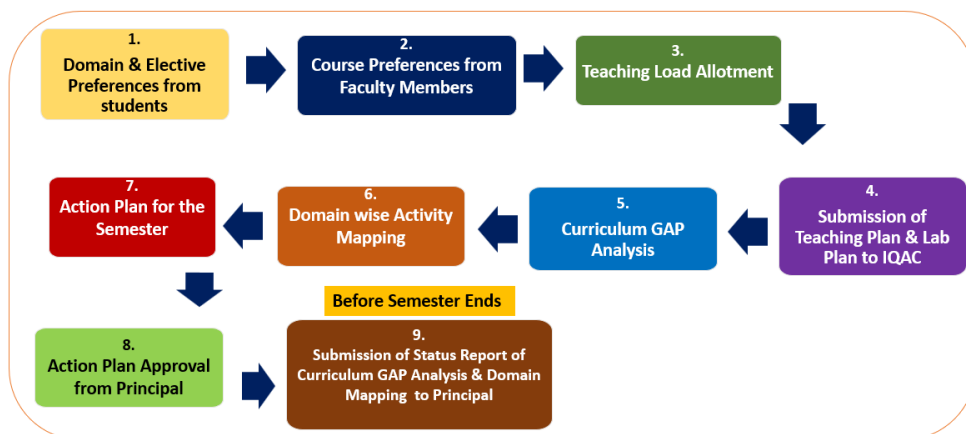


Figure 2: Activity Flow throughout the semester

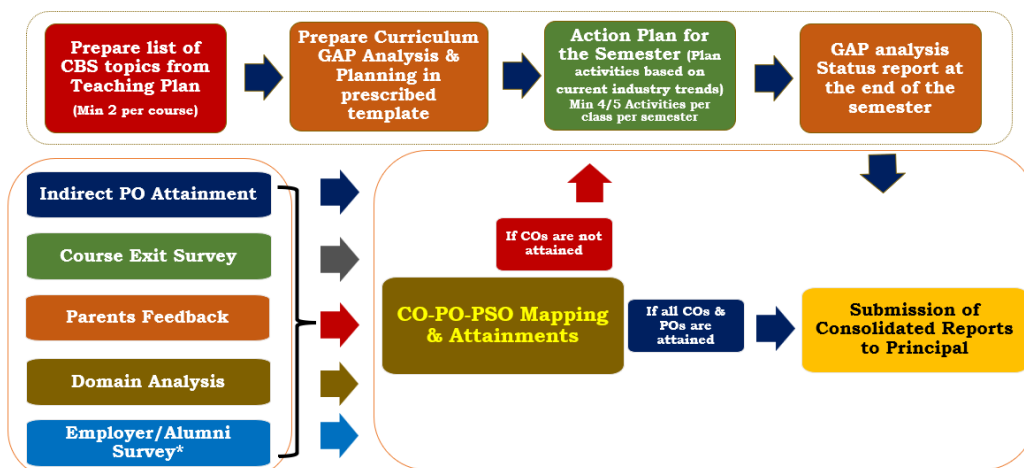


Figure 3: Process Flow of GAP analysis and Attainments

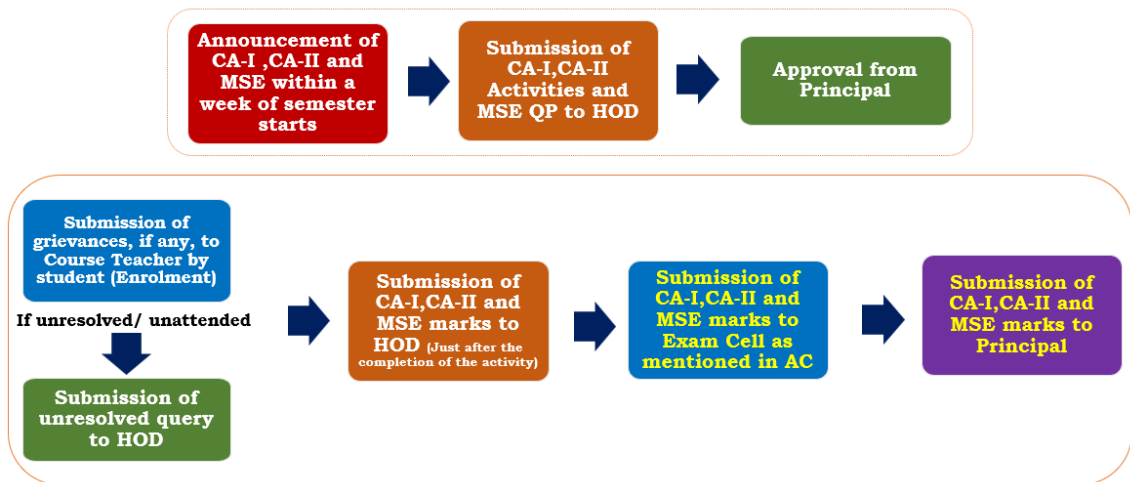


Figure 4: Students Grievance Redressal Mechanism



**Shiksha Mandal's**  
**Bajaj Institute of Technology, Wardha**  
(Affiliated to DBATU, Lonere, Raigad, Maharashtra)

**Academic Calendar (Institute)**

(Doc. No.: BITACAD/AC/Even Sem / Institute/2020-21)

FEBRUARY' 2021							ACTIVITY
SUN	MON	TUE	WED	THU	FRI	SAT	
	1	2	3	4	5	6	Commencement of classes
7	8	9	10	11	12	13	Declaration of Odd Semester results & registration for photocopy of answer books
14	15	16	17	18	19	20	
21	22	23	24	25	26	27	
28							
MARCH' 2021							
SUN	MON	TUE	WED	THU	FRI	SAT	
	1	2	3	4	5	6	Students Activity/ Forum Activities
7	8	9	10	11	12	13	Declaration of reevaluation results & registration for remedial examination.
14	15	16	17	18	19	20	Remedial examination
21	22	23	24	25	26	27	Guest Lectures/Expert Lectures/Sessions
28	29	30	31				Holi
							Industrial Visit/Virtual Tour
APRIL' 2021							
SUN	MON	TUE	WED	THU	FRI	SAT	
				1	2	3	Industrial Visit/Virtual Tour
4	5	6	7	8	9	10	Program for polytechnic students (Except Comp)
11	12	13	14	15	16	17	Dr. B.R. Ambedkar Jayanti
18	19	20	21	22	23	24	Faculty refresher courses
25	26	27	28	29	30		Library Week
							CA-I Marks submission to exam section.
MAY' 2021							
SUN	MON	TUE	WED	THU	FRI	SAT	
30	31					1	Maharashtra Day
2	3	4	5	6	7	8	Annual Social Gathering
9	10	11	12	13	14	15	Mid Semester Examination (13-22)
16	17	18	19	20	21	22	Exam Form Filling (Regular & Supplementary)
23	24	25	26	27	28	29	Exam Form Filling (Regular & Supplementary) with late fee (30 May to 3 June)
JUNE' 2021							
SUN	MON	TUE	WED	THU	FRI	SAT	
		1	2	3	4	5	Exam Form Filling (Reg & Supptry) with late fee
6	7	8	9	10	11	12	Sports Week
13	14	15	16	17	18	19	CA-II Marks submission to exam section
20	21	22	23	24	25	26	End of Classes
27	28	29	30				Practical/Project/Seminar Exam & II Periodic Test
JULY' 2021							
SUN	MON	TUE	WED	THU	FRI	SAT	
				1	2	3	End Semester Practical Examinations (3-12)
4	5	6	7	8	9	10	Uploading Internal, MSE, Practical, Project marks to university portal (4-13)
11	12	13	14	15	16	17	End Semester and Supplementary Examinations
18	19	20	21	22	23	24	ES Theory Examination (Regular & Repeater)
25	26	27	28	29	30	31	
AUGUST' 2021							
SUN	MON	TUE	WED	THU	FRI	SAT	
1	2	3	4	5	6	7	End Semester and Supplementary Examinations
							ES Theory Examination (Regular & Repeater)

**(Dr. N.M. Kanhe)**  
**Principal**



**Shiksha Mandal's**  
**Bajaj Institute of Technology, Wardha**  
 (Affiliated to DBATU, Lonere, Raigad, Maharashtra)

**Academic Calendar (Civil Engineering)**

(Doc. No.: BITACAD/AC/Even Sem VI & VIII/CIVIL/2022-23)

JANUARY' 2023							ACTIVITY
SUN	MON	TUE	WED	THU	FRI	SAT	
1	2	3	4	5	6	7	(1-3) Invitation of elective choices from students
8	9	10	11	12	13	14	(1-3) Invitation of subject preferences from faculty
15	16	17	18	19	20	21	(11) Teaching load finalization
22	23	24	25	26	27	28	(16-18) Gap analysis & action plan
29	30	31					(25) Teaching/Lab plan submission
							(30) Time table preparation/finalization
FEBRUARY' 2023							
SUN	MON	TUE	WED	THU	FRI	SAT	
			1	2	3	4	(8) Submission of gap analysis & action plan
5	6	7	8	9	10	11	(20) Commencement of classes
12	13	14	15	16	17	18	(27) Finalization of electives
19	20	21	22	23	24	25	(28) Finalization of project batches/guide allotment
26	27	28					(28) Fortnightly attendance report & syllabus completion status, provisional detention list
MARCH' 2023							
SUN	MON	TUE	WED	THU	FRI	SAT	
			1	2	3	4	(1) Finalization of Mini project titles
5	6	7	8	9	10	11	(1-3) Know your library
12	13	14	15	16	17	18	(6-10) CA-I activity
19	20	21	22	23	24	25	(15) Academic audit by academic coordinator
26	27	28	29	30	31		(20-25) Guest/Expert lecture, industrial visit
							(27-30) Project review-I, Seminar-I, CA-I activity
							(31) Fortnightly attendance report & syllabus completion status, provisional detention list
APRIL' 2023							
SUN	MON	TUE	WED	THU	FRI	SAT	
						1	(1) CA-I marks compilation
2	3	4	5	6	7	8	(3-8) Mid semester examination
9	10	11	12	13	14	15	(11-13) Students development program
16	17	18	19	20	21	22	(15) Display of MSE marks
23	24	25	26	27	28	29	(24-26) Forum activity
30							(30) Fortnightly attendance report & syllabus completion status, provisional detention list
MAY' 2023							
SUN	MON	TUE	WED	THU	FRI	SAT	
	1	2	3	4	5	6	(2-6) Seminar-II, CA-II activity
7	8	9	10	11	12	13	(15-17) Course exit survey
14	15	16	17	18	19	20	(19) Parent teacher meet
21	22	23	24	25	26	27	(20) End of classes
28	29	30	31				(22) Fortnightly attendance report & syllabus completion status, provisional detention list
JUNE' 2023							
SUN	MON	TUE	WED	THU	FRI	SAT	
				1	2	3	(1-3) Marks compilation/finalization/uploading
4	5	6	7	8	9	10	(1-10) End semester examination
11	12	13	14	15	16	17	(11-20) Practical/project/seminar examination
18	19	20	21	22	23	24	(27-30) 8 <sup>th</sup> Semester Project review-II
25	26	27	28	29	30		
<b>Total No of Days Available</b>				<b>90</b>			

Prepared By  
**D.G. Mangrulkar**  
 Academic Coordinator

Checked By  
**Dr. S. M. Mahajan**  
 Head of Department  
 HEAD  
 Department of Civil Engineering  
 Bajaj Institute of Technology, WARDHA

**Dr. N.M. Kanhe**  
 Principal  
**PRINCIPAL,**  
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 PIPBL, Wardha.



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**Department of Civil Engineering**

**IQAC Activity/ Event Calender\_OS\_2023-24**

Semester	Course	Course Code	Course Name	Activity/ Event Planned/ Scheduled Date			
				CA-A-1	CA-A-2	Self Learning	MSE
III	1	BTBS301	Mathematics - III	08-24-2023	09-25-2023	10-25-2023	10-3-2023
	2	BTCVES302	Mechanics of Solids	08-25-2023	09-26-2023	10-26-2023	10-4-2023
	3	BTCVC303	Building Construction and Drawing	08-26-2023	09-27-2023	10-27-2023	10-5-2023
	4	BTCVC304	Hydraulics - I	08-28-2023	09-28-2023	10-28-2023	10-6-2023
	5	BTCVC305	Surveying	08-29-2023	09-29-2023	10-30-2023	10-7-2023
V	1	BTCVC501	Design of Steel Structures	08-23-2023	09-23-2023	10-24-2023	10-3-2023
	2	BTCVC502	Geotechnical Engineering	08-24-2023	09-25-2023	10-25-2023	10-4-2023
	3	BTCVC503	Structural Mechanics -II	08-29-2023	09-26-2023	10-26-2023	10-5-2023
	4	BTCVC504	Concrete Technology	08-26-2023	09-27-2023	10-27-2023	10-6-2023
	5	BTHM505G	Project Management	08-28-2023	09-28-2023	10-28-2023	10-7-2023
	6	BTCVPE506G	Material, Testing and Evaluation	08-25-2023	09-29-2023	10-30-2023	10-9-2023
VII	1	BTCVC701	Design of RC and Prestressed Concrete Structures	08-21-2023	09-25-2023	10-25-2023	10-3-2023
	2	BTCVC702	Infrastructure Engineering	08-22-2023	09-26-2023	10-26-2023	10-4-2023
	3	BTCVC703	Construction Techniques	08-23-2023	09-27-2023	10-27-2023	10-5-2023
	4	BTCVC704	Professional Practices	08-28-2023	09-28-2023	10-28-2023	10-6-2023
	5	BTCVC705C	L.S. Design of Steel Structures	08-29-2023	09-29-2023	10-30-2023	10-7-2023

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**Member IQAC**

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**Head of the Department**

*Approved*  
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**Dr. Narendra Kanhe**

*PRINCIPAL,*  
*Bajaj Institute of Technology,*  
*PIPL, Wardha.*

	<b>Shiksha Mandal's</b> <b>Bajaj Institute of Technology, Wardha</b> (Affiliated to DBATU, Lonere, Raigad, Maharashtra)	Academic Session: 2022-23
		Doc. No.: BITACAD/TP/Civil/22-23
		Date: 11/02/2023

**Teaching Plan (TP)**  
 (Doc. No.: BITACAD/TP/Civil/22-23)  
**Department of Civil Engineering**

<b>Shiksha Mandal's</b> <b>BIT, Wardha</b>	<b>Teaching Plan</b>			<b>Page</b> 1 of 6	
				<b>Prepared on</b> 11 <sup>th</sup> February 2023	
<b>Academic Year</b>	2022-2023	<b>Class</b>	III Year	<b>Semester</b>	VI
<b>Subject</b>	DESIGN OF RC STRUCTURES			<b>Subject Code</b>	BTCVC601
<b>Examination Scheme</b>	CA: 20 Marks	MSE: 20 Marks		ESE: 60 Marks	
<b>Teaching Scheme</b>	Lecture: 3hr/w	Tutorial: 1hr/w		<b>w. e. f.</b>	20 <sup>th</sup> February 2023
<b>Faculty In-charge</b>	Dr. H. D. Phadke				

Abbreviations					
S. No.	Title	Abbreviation	S. No.	Title	Abbreviation
1	Program Outcomes	POs	4	Student Activity	SA
2	Course Outcomes	COs	5	BLOOMS Level	BL
3	Teaching-Learning	T-L	6	Program Specific Outcomes	PSOs

Note: hard copy needs to be submitted in the department's office.

### 1. Course Outcomes:

	At the end of the course, students will be able to:	Evaluation Through	BL
CO <sub>1</sub>	On completion of the course, the students will be able to comprehend the various design philosophies used in design of reinforced concrete.	CA-1, CA-2 MSE, ESE	5
CO <sub>2</sub>	Analyze and design the reinforced concrete sections using working stress method.	CA-1, CA-2 MSE, ESE	5
CO <sub>3</sub>	Analyze and design the reinforced concrete sections using limit state method.	CA-1, CA-2 MSE, ESE	5

(Blooms Level: 1. Remembering, 2. Understanding, 3. Applying, 4. Analyzing, 5. Evaluating, 6. Creating)

### 2. Parameters for CA-I and CA-II Assessment: (Select (√) minimum 2)

Technical Quiz	√	Model Making		PPT Presentation	√
Infographics		Technical Writing/Blog		Micro Project/Course Project	√
<b>NOTE:</b> Course Teacher needs to define minimum 3 Rubrics for assessment levels in advance.					

Evaluation Through	Assessment Parameters (2 Activities + Self Learning) (Marks for 2 Activities: Min 20, Max 30) Marks for Self-Learning: Min 10, Max 20)						
	1	2	3	4	5	6	7
	<b>Model-I</b>	<b>Technical Quiz</b>	<b>Model Making</b>	<b>PPT Presentation</b>	<b>Infographics</b>	<b>Technical Writing/Blog</b>	<b>Micro Project/ Course Project</b>
<b>CA-I</b>	√		√				
<b>CA-II</b>							√
<b>Model-II</b>	<b>Technical Quiz</b>	<b>Model Making</b>	<b>PPT Presentation</b>	<b>Infographics</b>	<b>Technical Writing/Blog</b>	<b>Micro Project/ Course Project</b>	<b>Self Learning</b>
<b>CA-I</b>							√
<b>CA-II</b>	√		√				

### 3. Mapping of COs with POs:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	3	2	1	2	-	-	-	-	2	-	-	1	1	1
CO2	2	2	2	2	2	-	-	-	-	2	-	-	1	1	1
CO3	3	3	3	3	3	-	-	-	-	2	-	-	1	1	1

### 4. GAP Analysis and Mapping:

The GAP identified in the Course: Introduction to IS 1893:2016 and Introduction to IS 13920:2016 and AddOn (Introduction to Etabs)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	1	1	1	1	1	-	-	-	-	2	-	-	1	1	1
CO2	2	2	2	2	2	*	-	-	-	*	-	*	1	1	1
CO3	3	3	3	3	3	-	-	-	-	2	-	-	*	*	*

### 5. Text Books

- IS: 456-2000, IS: 456-1978, Bureau of Indian Standards, New Delhi
- Karve and Shah, “Limit State Theory & Design”, Structures Publications, Pune
- Jain A.K., “Reinforced Concrete Design (Limit State)”, Nemchand Brothers, Roorkee
- Sinha and Roy, “Fundamentals of Reinforced Concrete”
- Sinha S.N., “Reinforced Concrete Design, Vol. I, II”, Tata Mc-Graw Hill
- Varghese P.C., “Limit State Design of Reinforced Concrete”, Prentice Hall of India, New Delhi
- Mehra H. and V.N. Vazirani, “Limit State Design of Reinforced Concrete Structures”, Khanna Publishers, N. Delhi, ISBN No: 978-81-7409-162-9
- Vazirani V.N. and Ratwani M.M., “Design of Reinforced Concrete Structures”, Khanna Publishers, N. Delhi, ISBN No: 978-81-7409-232-8
- Pillai S Unnikrishna, and Menon Devdas., “Reinforced Concrete Design” Tata Mc-Graw Hill

### Reference Books



- Punmia B.C., “Reinforced Concrete Design, Vol. I, II”, Laxmi Publications
- Relevant Publications by Bureau of Indian Standards, New Delhi

### 6. Self-Learning Topics: (Max 5)

(Faculty members can give maximum 5 self-learning topics per subject. These topics must be declared in advance and must be highlighted in TP as underlined text. These topics can be covered through presentations, assignments, seminars etc.)

S. No.	Name of Topic	References
1.	Analysis and Design of Flanged (L) sections	Varghese P.C., “Limit State Design of Reinforced Concrete”, Prentice Hall of India, New Delhi
2.	Analysis and Design of Flanged (T) sections	
3.	design of dog- legged and open well stair case	

T-L Methodology	Student Activity
Chalk & Board	Remembers
Lecturing/Content Delivery	Listen
PPT	Understands
Demonstration	Participative Learning
Case Study	Answers
Brainstorming Activity	Experimental Learning
Role Play	Create/Generate Ideas
Quiz	Analyzes

(Blooms Level: 1. Remembering, 2. Understanding, 3. Applying, 4. Analyzing, 5. Evaluating, 6. Creating)

### 6. Teaching Plan: \*Minimum 2 topics on content beyond syllabus.

Lecture No. /Tutorial No.	Topic/s	Teaching Learning Methodology	Student Activity	BL
<b>Module 1: Introduction (4 lectures)</b>				
L1	Basic Aspects of Structural Design, Introduction to Design Philosophies	PPT	Understand	2
L2	Stress Strain behavior of Materials	PPT	Understand	2
L3	Working stress method, Ultimate load method and Limit state method, Comparison of Different Philosophies	PPT	Understand	2
T1	Factor of Safety, Estimation of Loads	PPT	Understand	5
<b>Module 2: Working Stress Method (8 lectures)</b>				
L4	Stress block parameters, permissible stresses, balanced, under reinforced and over reinforced section	Chalk & Board	Analyzes	4,5
L5	Analysis and design for flexure, shear, analysis and design of singly and doubly reinforced beams	Chalk & Board	Analyzes	4,5
L6	Analysis and design for flexure, shear, analysis and design of singly and doubly reinforced beams	Chalk & Board	Analyzes	4,5

T2	Analysis and design for flexure, shear, analysis and design of singly and doubly reinforced beams	Chalk & Board	Analyzes	4,5
L7	Design of axial and uniaxial eccentric loaded columns	Chalk & Board	Analyzes	4,5
L8	Design of axial and uniaxial eccentric loaded columns	Chalk & Board	Analyzes	4,5
L9	Isolated Column Footings, WSM design requirements as per Annexure B of IS 456:2000	Chalk & Board	Analyzes	4,5
T3	Isolated Column Footings, WSM design requirements as per Annexure B of IS 456:2000	Chalk & Board	Analyzes	4,5
<b>Module 3: Introduction to LSM, Limit State of Collapse in Shear and Bond (10 lectures)</b>				
<b>CA-I (1)</b>	<b>Technical Quiz</b>	<b>OFFLINE</b>	<b>Analyze</b>	<b>5</b>
L10	Introduction to limit state approach, types and classification of limit states	Chalk & Board	Analyzes	4,5
L11	characteristics strength and characteristics load, load factor, partial safety factors	Chalk & Board	Analyzes	4,5
L12	strain variation diagram, stress variation diagram, serviceability criteria	Chalk & Board	Analyzes	4,5
T4	Design for shear: shear failure	Chalk & Board	Analyzes	4,5
L13	types of shear reinforcement, minimum shear reinforcement	Chalk & Board	Analyzes	4,5
L14	design of shear reinforcement	Chalk & Board	Analyzes	4,5
L15	design of shear reinforcement	Chalk & Board	Analyzes	4,5
T5	Design for bond: types, factors affecting, resistance	Chalk & Board	Analyzes	4,5
L16	check for development length, detailing of reinforcement	Chalk & Board	Analyzes	4,5
L17	check for development length, detailing of reinforcement	Chalk & Board	Analyzes	4,5
<b>Module 4: Limit State of Collapse in Flexure (16 Lectures)</b>				
L18	Design of beams: Analysis and Design: Singly and Doubly Reinforced Beams,	Chalk & Board	Analyzes	4,5
T6	Design of beams: Analysis and Design: Singly and Doubly Reinforced Beams,	Chalk & Board	Analyzes	4,5
L19	Design of beams: Analysis and Design: Singly and Doubly Reinforced Beams,	Chalk & Board	Analyzes	4,5
L20	Design of beams: Analysis and Design: Singly and Doubly Reinforced Beams,	Chalk & Board	Analyzes	4,5
L21	Flanged (L and T) sections.	Chalk & Board	Analyzes	4,5
T7	Flanged (L and T) sections.	Chalk & Board	Analyzes	4,5
L22	Flanged (L and T) sections.	Chalk & Board	Analyzes	4,5
L23	Flanged (L and T) sections.	Chalk & Board	Analyzes	4,5
L24	Design of Slabs: One-Way and Two-Way Slab: Behavior of slabs, types, support conditions,	Chalk & Board	Analyzes	4,5
T8	Design of Slabs: One-Way and Two-Way Slab: Behavior of slabs, types, support conditions,	Chalk & Board	Analyzes	4,5
L25	Analysis and design with various conditions	Chalk & Board	Analyzes	4,5
L26	Analysis and design with various conditions	Chalk & Board	Analyzes	4,5
L27	Analysis and design with various conditions	Chalk & Board	Analyzes	4,5

T9	Staircases, effective span and load distribution	Chalk & Board	Analyzes	4,5
L28	design of dog- legged and open well stair case	Chalk & Board	Analyzes	4,5
L29	design of dog- legged and open well stair case	Chalk & Board	Analyzes	4,5
<b>Module 5: Limit State of Collapse in Compression, Design of Columns and Footings (10 lectures)</b>				
<b>CA-I (2)</b>	<b>PPT Presentation</b>	<b>OFFLINE</b>	<b>Participative Learning</b>	<b>5</b>
L30	Analysis And Design Of Axially And Eccentrically Loaded Short Columns (Circular And Rectangular)	Chalk & Board	Analyzes	4,5
T10	Analysis And Design Of Axially And Eccentrically Loaded Short Columns (Circular And Rectangular)	Chalk & Board	Analyzes	4,5
L31	Analysis And Design Of Axially And Eccentrically Loaded Short Columns (Circular And Rectangular)	Chalk & Board	Analyzes	4,5
L32	Analysis And Design Of Axially And Eccentrically Loaded Short Columns (Circular And Rectangular)	Chalk & Board	Analyzes	4,5
L33	Construction Of Interaction Diagrams For Uni-Axial Bending And Its Application In Design	Chalk & Board	Analyzes	4,5
<b>CA-II</b>	<b>Self-Learning Evaluation</b>	<b>Infographics</b>		<b>4</b>
T11	Construction Of Interaction Diagrams For Uni-Axial Bending And Its Application In Design	Chalk & Board	Analyzes	4,5
L34	Concept Of Design Charts, Concept Of Bi-Axial Bending, Concept Of Interaction Surface	Chalk & Board	Analyzes	4,5
L35	Design Of Isolated Column Footing For Axial Load, And Uni-Axial Bending	Chalk & Board	Analyzes	4,5
L36	Design Of Isolated Column Footing For Axial Load, And Uni-Axial Bending	Chalk & Board	Analyzes	4,5
T12	Design Of Isolated Column Footing For Axial Load, And Uni-Axial Bending	Chalk & Board	Analyzes	4,5
<b>Content Beyond Syllabus</b>				
L37	Introduction to IS 1893:2016	PPT	Understand	2
L37	Introduction to IS 13920:2016	PPT	Understand	2
<b>Total Theory Lectures</b>				<b>38</b>
<b>Total Tutorial Lectures</b>				<b>12</b>
<b>Total (Theory + Tutorial)</b>				<b>50</b>

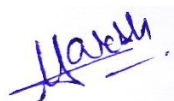
ACTIVITY	PLANNED DATE	COMPLETED
		YES/NO
CA1 (QUIZ)	08/03/2023	YES
CA1 (PRESENTATION)	26/04/2023	YES
CA2 (SELF LEARNING ACTIVITY)	03/05/2023	YES

## 7. Remedial and make up Classes:

Sr. No.	Date	Topic/s	Remark
1	09-05-2023	Analysis And Design Of Axially And Eccentrically Loaded Short Columns (Circular And Rectangular)	Makeup Class
2	15-05-2023	Design Of Isolated Column Footing For Axial Load, And Uni-Axial Bending	Makeup Class

3	15-05-2023	Design Of Isolated Column Footing For Axial Load, And Uni-Axial Bending	Makeup Class
4	16-05-2023	Design of Slabs: One-Way and Two-Way Slab: Behavior of slabs, types, support conditions,	Makeup Class
5	17-05-2023	Design of Slabs: One-Way and Two-Way Slab: Behavior of slabs, types, support conditions,	Makeup Class
6	17-05-2023	Design of Slabs: One-Way and Two-Way Slab: Behavior of slabs, types, support conditions	Makeup Class
7	18-05-2023	Design of Slabs: One-Way and Two-Way Slab: Behavior of slabs, types, support conditions	Makeup Class
8	18-05-2023	Design of Slabs: One-Way and Two-Way Slab: Behavior of slabs, types, support conditions	Makeup Class
9	19-05-2023	Design of Slabs: One-Way and Two-Way Slab: Behavior of slabs, types, support conditions	Makeup Class
10	19-05-2023	Design of Slabs: One-Way and Two-Way Slab: Behavior of slabs, types, support conditions	Makeup Class

Summary		
	<b>Total Remedial Class/es (R)</b>	<b>-</b>
	<b>Total Make up Classes (M)</b>	<b>10</b>
	<b>Total (L+T+R+M)</b>	<b>60</b>



**Prepared By**  
**(Subject Teacher)**



**Checked By**  
**(Subject In-Charge)**



**Approved By**  
**(HOD)**

**HEAD**  
Department of Civil Engineering  
Bajaj Institute of Technology, WARDHA



**Shiksha Mandal's**  
**Bajaj Institute of Technology, Wardha**  
**Department of Mechanical Engineering**

**Laboratory Plan (LP)**

(Doc. No.: BITACAD/LP/Sem V/ MD-I/22-23)

<b>Shiksha Mandal's BIT, Wardha</b>	<b>Laboratory Plan</b>			Page	1 of 6
				Prepared on	Aug' 22
Academic Year	2022-2023	Class	III Year	Semester	V
Subject	Mechanical Engineering Lab -III: MD-I (Group C)			Subject Code	BTMCL507
Evaluation Scheme	CA : 60 Marks	ESE: 40 Marks		Course Category	PCC12
Teaching Scheme	Practical: 2hrs/week per batch			w. e. f.	1 <sup>st</sup> Sept 2022
Faculty In-charge	Dr. Deepak Bhope			Batch	T <sub>1</sub> , T <sub>3</sub>

Abbreviations					
S. No.	Title	Abbreviation	S. No.	Title	Abbreviation
1	Program Outcomes	POs	4	Student Activity	SA
2	Course Outcomes	COs	5	BLOOMS Level	BL
3	Teaching-Learning	T-L			

*Note: Hard copy need to be submitted in the department's office.*

**1. Course Outcomes:**

CO	At the end of the course, students will be able to:	Evaluation Through	BL
CO <sub>1</sub>	Formulate the problem by identifying customer need and convert into design Specification	CA-I, CA-II	4
CO <sub>2</sub>	Understand component behavior subjected to loads and identify failure criteria	CA-I, CA-II	3
CO <sub>3</sub>	Analyze the stresses and strain induced in the component	CA-I, CA-II	4
CO <sub>4</sub>	Design of machine component using theories of failures	CA-I, CA-II	6
CO <sub>5</sub>	Design of component for finite life and infinite life when subjected to fluctuating load	CA-I, CA-II	6
CO <sub>6</sub>	Design of components like shaft, key, coupling, screw and spring	CA-I, CA-II	6

**(Blooms Level: 1. Remembering, 2. Understanding, 3. Applying, 4. Analyzing, 5. Evaluating, 6. Creating)**

**2. Parameters for CA-I and CA-II Assessment:** (Select (√) minimum 2)

Quiz	√	Viva-Voce	√	PPT Presentation		Self-Assessment	
Journal	√						

**NOTE:** Lab Teacher needs to define minimum 3 Rubrics for assessment levels in advance.



### 3. Mapping of COs with POs:

	PO <sub>1</sub>	PO <sub>2</sub>	PO <sub>3</sub>	PO <sub>4</sub>	PO <sub>5</sub>	PO <sub>6</sub>	PO <sub>7</sub>	PO <sub>8</sub>	PO <sub>9</sub>	PO <sub>10</sub>	PO <sub>11</sub>	PO <sub>12</sub>
CO <sub>1</sub>	1	1						1				1
CO <sub>2</sub>	3	2		1		1		1		1		1
CO <sub>3</sub>	1	1				1		1		1		1
CO <sub>4</sub>	3	3	2	1		2		1		1		1
CO <sub>5</sub>	1	1				1		1		1		1
CO <sub>6</sub>	2	2	2	1		1		1		1		1

### 4. Texts/Reference Books:

#### Texts:

1. V. B. Bhandari, "Design of Machine Elements", Tata McGraw Hill Publications, New Delhi, 2008.
2. R. L. Norton, "Machine Design: An Integrated Approach", Pearson Education Singapore, 2001.

#### References:

1. R. C. Juvinall, K. M. Marshek, "Fundamental of machine component design", John Wiley & Sons Inc., New York, 3<sup>rd</sup> edition, 2002.
2. B. J. Hamrock, B. Jacobson and Schmid Sr., "Fundamentals of Machine Elements", International Edition, New York, 2<sup>nd</sup> edition, 1999.
3. A.S. Hall, A. R. Holowenko, H. G. Langhlin, "Theory and Problems of Machine Design", Schaum's Outline Series, Tata McGraw Hill book Company, New York, 1982.
4. J. E. Shigley and C. Mischke, "Mechanical Engineering Design", Tata McGraw Hill Publications, 7<sup>th</sup> edition, 2004.
5. M. F. Spotts, "Design of Machine Elements", Prentice Hall of India, New Delhi.

#### Additional Recommended Books, if any:



**5. Laboratory Plan:-**

<b>Design/ Assignment No</b>	<b>Design/ Assignment Title</b>	<b>Date of Conduction</b>	<b>Related CO</b>	<b>Teaching Learning Methodology</b>	<b>BL</b>
1	Design No-1: Design of Knuckle Joint	T1 – 8/9/22, 12/9/22 T3 – 12/9/22, 19/9/22	CO1 to CO6	Chalk & Board/ PPT/ Software	6
2	Design No-2: Design of Cotter Joint	T1 – 15/9/22, 22/9/22 T3 – 3/10/22, 10/10/22	CO1 to CO6	Chalk &/ Board/ PPT/ Software	6
3	Design Assignment No-1: Design of Bolted Joints	T1 – 6/10/22, 13/10/22 T3 -13/10/22, 31/10/22	CO1 to CO6	Chalk & Board/ PPT	5
4	Design No-3: Design of Rigid Flange Coupling	T1 – 14/10/22, 3/11/22 T3 - 7/11/22, 14/11/22	CO1 to CO6	Chalk & Board/ PPT/ Software	6
5	Design No-4: Design of Flexible Bush Pin Coupling	T1 – 10/11/22, 17/11/22 T3 – 21/11/22, 28/11/22	CO1 to CO6	Chalk & Board/ PPT/ Software	6
6	Design Assignment No-2: Design of Helical Compression Springs	T1 – 24/11/22, 1/12/22 T3 – 1/12/22, 5/12/22	CO1 to CO6	Chalk & Board/ PPT	5



**Assessment Rubric:**

<b>(A) Performance on Task (Process Evaluation)</b>			
Assessment Criteria/ Evaluation Parameters	Level of Achievement		
	Level-I Average (1-3)	Level-II Good (4-6)	Level-III Excellent (7-10)
Ability to follow the instructions	Rarely follows the instructions	Follows instructions as and when told.	Follows instructions by his/her own. (Read the instructional manual before coming to the lab)
Handling of Equipment	Rough	Smoothly	Smoothly and carefully
Ability to perform the task	Less	Moderate	Excellent
<b>(B) Quality of Product (Product Evaluation)</b>			
Assessment Criteria/ Evaluation Parameters	Level of Achievement		
	Level-I Average (1-3)	Level-II Good (4-6)	Level-III Excellent (7-10)
Report /Write up Quality	Rarely completes the report.	Complete the reports in time with moderate corrections.	Complete the report well in advance.
Ability to interpret the results	Rarely	Interpret the results	Interpret and able to conclude from the results.
Conclusion	Lacking in explanations	Reasonably explained	Exceptionally well interpreted the results.

**Check List:**

S. No.	Criteria of Performance/Assessment	Whether the student has performed the task (Please tick appropriately)	
		Yes	No
1	Quiz	√	
2	Viva-Voce	√	
3	Journal Submission	√	

**NOTE:** Lab Teacher may add/delete assessment criteria as per the requirement of the course.





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**Assessment Rating:**

Batch-T1 Roll No	Criteria of Assessment	Whether the student has performed the task (Please tick appropriately)		Rating (Fair/Good/Excellent)
		Yes	No	
1	Journal/ Quiz/ Viva-Voce	√		Good
2	Journal/ Quiz/ Viva-Voce	√		Good
3	Journal/ Quiz/ Viva-Voce	√		Excellent
4	Journal/ Quiz/ Viva-Voce	√		Fair
5	Journal/ Quiz/ Viva-Voce	√		Good
6	Journal/ Quiz/ Viva-Voce	√		Good
7	Journal/ Quiz/ Viva-Voce	√		Good
8	Journal/ Quiz/ Viva-Voce	√		Excellent
9	Journal/ Quiz/ Viva-Voce	√		Good
10	Journal/ Quiz/ Viva-Voce	√		Excellent
11	Journal/ Quiz/ Viva-Voce	√		Excellent
12	Journal/ Quiz/ Viva-Voce	√		Good
13	Journal/ Quiz/ Viva-Voce	√		Good
14	Journal/ Quiz/ Viva-Voce	√		Fair
15	Journal/ Quiz/ Viva-Voce	√		Excellent
16	Journal/ Quiz/ Viva-Voce	√		Excellent
17	Journal/ Quiz/ Viva-Voce	√		Good
18	Journal/ Quiz/ Viva-Voce	√		Fair
19	Journal/ Quiz/ Viva-Voce	√		Good
20	Journal/ Quiz/ Viva-Voce	√		Excellent



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Batch-T3 Roll No	Criteria of Assessment	Whether the student has performed the task (Please tick appropriately)		Rating (Fair/Good/Excellent)
		Yes	No	
41	Journal/ Quiz/ Viva-Voce	√		Good
42	Journal/ Quiz/ Viva-Voce	√		Good
43	Journal/ Quiz/ Viva-Voce	√		Fair
44	Journal/ Quiz/ Viva-Voce	√		Excellent
45	Journal/ Quiz/ Viva-Voce	√		Excellent
46	Journal/ Quiz/ Viva-Voce	√		Excellent
47	Journal/ Quiz/ Viva-Voce	√		Good
48	Journal/ Quiz/ Viva-Voce	√		Fair
49	Journal/ Quiz/ Viva-Voce	√		Good
50	Journal/ Quiz/ Viva-Voce	√		Good
51	Journal/ Quiz/ Viva-Voce	√		Good
52	Journal/ Quiz/ Viva-Voce	√		Good
53	Journal/ Quiz/ Viva-Voce	√		Good
54	Journal/ Quiz/ Viva-Voce	√		Fair
55	Journal/ Quiz/ Viva-Voce	√		Good
56	Journal/ Quiz/ Viva-Voce	√		Good
57	Journal/ Quiz/ Viva-Voce	√		Excellent
58	Journal/ Quiz/ Viva-Voce	√		Good
59	Journal/ Quiz/ Viva-Voce	√		Fair

**Prepared By**  
(Subject Teacher)

**Checked By**  
(Subject In-Charge)

**Approved By**  
(HOD)

HEAD  
Department of Mechanical Engineering  
Bajaj Institute of Technology, WARDHA

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**Bajaj Institute of Technology, Wardha**

**GAP Analysis, Activity Planning and Mapping with POs**

Doc. No.: BITACAD/GA/COMP/2021-22/Even

S.No.	Name of the Department	Semester and Year	Name of Subject	Content Beyond Syllabus topic identified by the faculty member	GAP identified by the Department	Activity Plan				Status			Process of Identification of GAP Analysis (Meeting/Brain storming session etc)	No of Students Expected/ Participated	Feedback Analysis (Completed /Under Process/Not Collected)	Brief report of the Activity Submitted to Principal Sir (Date)	Whether Attainment Mapping with Pos is done?	
						Industrial Visit /Virtual Tour	Guest Lecture/NPTEL/Expert Session/Seminar/ Workshop /Conference for Students/Project Exhibition/Competitions etc	Value Added Program (VAP)	Add-on Course	Planned (Mention Tentative Date)	Completed (Mention Date of Completion )	Neither Planned nor Completed						
1	Department of Computer Engineering	4th Sem	Design and analysis of algorithms	Best practices followed by the developers in industry.	Provide Information about current industry trends in algorithm implementation	-	Expert Lecture	-	-	28-03-2022	31-03-2022		Brain Storming Session	40	Not Collected as platform used	14-06-2022	YES PO4,PO5,PO9	
2		6th Sem	Artificial Intelligence	AI Applications	Statistical Foundation of Artificial Intelligence	-	Expert Lecture	-	-	28-04-2022	04-06-2022		Brain Storming Session	78	Completed	14-06-2022	YES	
3		6th Sem	Computer Networks	Introduction to Cyber-Security	Not Part of Syllabus	-	Guest Lecture	-	-	15-04-2022	21-05-2022		Brain Storming Session	113	Completed	14-06-2022	YES	
4		6th Sem	Consumer Behavior	1. Possibility of Repurchase 2. Usage rate and Word of mouth	-	-	Workshop	-	-				Not Completed	Brain Storming Session	-		-	NO
5		6th Sem	Compiler Design	Introduction to Linux Commands and Compiler Design Tools	Compiler design tools (Lex and Yacc)	-	-	-	Yes	21-03-2022	28-05-2022		Brain Storming Session	30	Completed	Activity Report Sent with Semester Closure Report 02-08-2022	YES PO1, PO2, PO3, PO4, PO6, PO9, PO10	
6		6th Sem	Technical Aptitude in view of Placements	Prepare 6th Semester students for placement drive	Competence in	-	SDP/Certificate Course	-	Yes	27-06-2021			Not Completed Planned for Next Semester	Brain Storming Session	69		-	YES PO1, PO2, PO3, PO5, PO9, PO12
7		6th Sem	Database Systems	Database Design	Database modeling and design	-	-	-	Yes	06-06-2022	25-06-2022		Brain Storming Session		Completed	Activity Report Sent with Semester Closure Report 02-08-2022	YES PO2, PO2, PO4, PO5, PO9,PO12	
8		4th Sem , 6th Sem	Computer Networks	Cyber Security is not part of Syllabus CISCO NET-Acad Course(55 Hours) 1. Introduction to Cybersecurity, 2. Cybersecurity Essentials 3. Introduction to Packet Tracer	Not Part of Syllabus	-	-	Yes	-	02-05-2022	05-07-2022		Brain Storming Session	40	Not Collected as CISCO platform for courses was used	Internship Certificate Received from CISCO. 19/08/2022	YES PO1, PO2,PO3,PO4 ,PO5,PO10, PO12	
9		4th Sem	Digital Logic Design & Microprocessors	8051 microcontroller system	Application of Embeded System	-	Guest Lecture	-	-	24-06-2022			Not Completed	Brain Storming Session	69		-	YES
10		6th Sem	Internet of Things	Edge Computing, IoT Edge and Deploy Edge devices and integrate with Azure IoT Edge	Familirisation of IoT Edge Technology	-	Guest Lecture	-	-	25-06-2022			Not Completed	Brain Storming Session	69		-	YES
11		4th Sem	Complete Guide to Application Design & Development(ADD)	Learn about various aspects of Standalone and web applications	CMS & Mobile App Developments is not part of syllabus	-	-	Yes	-	03-06-2022	July 2023		Brain Storming Session	69	Module-1 Completed	Activity Report Sent with Semester Closure Report 02-08-2022	YES PO1,PO2,PO3,P O4,PO5,PO6,PO 10,PO11,PO12	
12		4th Sem , 6th Sem	Computer Networks	Ethical Hacking & It's Current Trends	Not Part of Syllabus	-	Guest Lecture	-	-	17-06-2022	17-06-2022		Brain Storming Session	84	Completed	26-07-2022	YES PO7, PO9,PO10	

  
Prof. Sheetal Kale  
HOD



# Bajaj Institute of Technology, Wardha

(Affiliated to DBATU, Lonere, Raigad, Maharashtra)

## Department of Computer Engineering

Third Sem Section A (2022-23) Cumulative Attendance Report Till 15 th September 22

Doc. No.: BITACAD/AR/COMP/2022-23/Odd/III

Date: 17/09/2022

Main	ROLL NO.	NAME OF STUDENT	BTBS301 Engineering Mathematics – III Section A		BTCOC302 Discrete Mathematics Section A		BTCOC303 Data Structures		BTCOC304 Computer Architecture & Organization Section A		BTCOC305 Elective –I (b) Object Oriented Programming in Java		Total Classes		
			7	100%	6	100.00%	4	100.00%	7	100.00%	6	100.00%	Attended	Overall Attendanc	Conducted
	A201	Aditi Prakash Manekar	7	100%	5	83.33%	4	100.00%	6	85.71%	3	50.00%	25	84.0	30
	A202	Ritika Vinayakrao Bhonge	7	100%	5	83.33%	3	75.00%	6	85.71%	5	83.33%	26	87.0	30
	A203	Heet Ashish Pande	6	86%	5	83.33%	3	75.00%	7	100.00%	5	83.33%	26	87.0	30
	A204	Faizan Anis Sayani	6	86%	5	83.33%	4	100.00%	4	57.14%	5	83.33%	24	80.0	30
	A205	Prajwal Rajendra Choudhari	5	71%	4	66.67%	3	75.00%	7	100.00%	6	100.00%	25	84.0	30
	A206	Sahil Santosh Gaikwad	6	86%	6	100.00%	4	100.00%	7	100.00%	5	83.33%	28	94.0	30
	A207	Sanket Premsagar Tajne	6	86%	5	83.33%	2	50.00%	4	57.14%	5	83.33%	22	74.0	30
	A208	Pranav Vijay Ikhar	7	100%	6	100.00%	4	100.00%	6	85.71%	5	83.33%	28	94.0	30
	A209	Aditya Kamalakar Kashikar	7	100%	6	100.00%	4	100.00%	5	71.43%	6	100.00%	28	94.0	30
	A210	Prajwal Rameshwar Gurnule	3	43%	3	50.00%	3	75.00%	7	100.00%	5	83.33%	21	70.0	30
	A211	Tejaswee Tulasiram Balavir	2	29%	5	83.33%	4	100.00%	5	71.43%	4	66.67%	20	67.0	30
	A212	Sejal Rajesh Waghmare	6	86%	5	83.33%	4	100.00%	5	71.43%	6	100.00%	26	87.0	30
	A213	Ninad Sunil Chalach	6	86%	5	83.33%	3	75.00%	7	100.00%	5	83.33%	26	87.0	30
	A214	Aniket Maniram Pache	6	86%	2	33.33%	4	100.00%	5	71.43%	3	50.00%	20	67.0	30
	A215	Renuka Ashok Kothekar	6	86%	6	100.00%	3	75.00%	5	71.43%	5	83.33%	25	84.0	30
	A216	Saloni Harish Kanoje	6	86%	5	83.33%	4	100.00%	7	100.00%	6	100.00%	28	94.0	30
	A217	Ritesh Ananta Nagtode	5	71%	5	83.33%	3	75.00%	7	100.00%	5	83.33%	25	84.0	30
	A218	Shrawani Dinesh Wagh	6	86%	5	83.33%	4	100.00%	7	100.00%	6	100.00%	28	94.0	30
	A219	Aditya Sunil Kale	4	57%	5	83.33%	2	50.00%	7	100.00%	4	66.67%	22	74.0	30
	A220	Krushna Bhaulal Devatwal	6	86%	6	100.00%	4	100.00%	5	71.43%	6	100.00%	27	90.0	30
	A221	Prutha Badalsingh Thakur	7	100%	5	83.33%	3	75.00%	6	85.71%	6	100.00%	27	90.0	30
	A222	Mayur Hemantrao Satone	7	100%	6	100.00%	4	100.00%	7	100.00%	6	100.00%	30	100.0	30
	A223	Raghvendra Rajivkumar Singh	6	86%	5	83.33%	4	100.00%	7	100.00%	5	83.33%	27	90.0	30
	A224	Sahil Shankarrao Golhar	7	100%	6	100.00%	4	100.00%	7	100.00%	6	100.00%	30	100.0	30
	A225	Vedant Atul Dalwi	7	100%	6	100.00%	3	75.00%	7	100.00%	4	66.67%	27	90.0	30
	A226	Puja Padmakar Wagh	6	86%	5	83.33%	4	100.00%	6	85.71%	6	100.00%	27	90.0	30
	A227	Sejal Sunil Lambat	5	71%	5	83.33%	4	100.00%	7	100.00%	6	100.00%	27	90.0	30
	A228	Sanskruiti Ravindra Zode	6	86%	6	100.00%	4	100.00%	6	85.71%	6	100.00%	28	94.0	30
	A229	Pranali Rajesh Pachkawde	6	86%	3	50.00%	2	50.00%	5	71.43%	5	83.33%	21	70.0	30
	A230	Shrawani Rajendra Gulkari	5	71%	5	83.33%	4	100.00%	7	100.00%	6	100.00%	27	90.0	30
	A231	Himanshi Prakash Tikhe	5	71%	5	83.33%	2	50.00%	6	85.71%	5	83.33%	23	77.0	30
	A232	Yash Anup Aylani	6	86%	3	50.00%	4	100.00%	6	85.71%	4	66.67%	23	77.0	30

A233	Sachi Jivan Choudhari	7	100%	6	100.00%	4	100.00%	7	100.00%	4	66.67%	28	94.0	30
A234	Pranjal Rahul Saboo	7	100%	6	100.00%	4	100.00%	6	85.71%	5	83.33%	28	94.0	30
A235	Nayan Sudhakar Raut	7	100%	6	100.00%	3	75.00%	6	85.71%	5	83.33%	27	90.0	30
A236	Sumedh Sunilrao Mude	6	86%	5	83.33%	4	100.00%	7	100.00%	5	83.33%	27	90.0	30
A237	Shantanu Raju Chandankhede	7	100%	5	83.33%	4	100.00%	7	100.00%	5	83.33%	28	94.0	30
A238	Kaushal Sanjayrao Dixit	7	100%	6	100.00%	4	100.00%	7	100.00%	6	100.00%	30	100.0	30
A239	Samiksha Anil Pawar	5	71%	6	100.00%	3	75.00%	6	85.71%	5	83.33%	25	84.0	30
A240	Devansh Ramkumar Bardiya	7	100%	5	83.33%	3	75.00%	5	71.43%	5	83.33%	25	84.0	30
A241	Shantanu Anil Bijwar	6	86%	6	100.00%	4	100.00%	7	100.00%	5	83.33%	28	94.0	30
A242	Prajwal Niranjan Dighade	6	86%	5	83.33%	3	75.00%	5	71.43%	5	83.33%	24	80.0	30
A243	Akhilesh Surjeet Bandwal	7	100%	5	83.33%	4	100.00%	7	100.00%	5	83.33%	28	94.0	30
A244	Harshal Ravindra Bhagat	5	71%	5	83.33%	4	100.00%	6	85.71%	2	33.33%	22	74.0	30
A245	Sayli Sunil Mandaogade	5	71%	6	100.00%	4	100.00%	7	100.00%	4	66.67%	26	87.0	30
A246	Saurabh Raju Satpute	7	100%	6	100.00%	4	100.00%	6	85.71%	5	83.33%	28	94.0	30
A247	Aditya Santosh Dhage	6	86%	6	100.00%	3	75.00%	6	85.71%	5	83.33%	26	87.0	30
A248	Arnav Satish Chiddarwar	6	86%	5	83.33%	4	100.00%	6	85.71%	6	100.00%	27	90.0	30
A249	Chitrakar Arun Warokar	6	86%	6	100.00%	3	75.00%	6	85.71%	6	100.00%	27	90.0	30
A250	Sejal Gajanan Patre	7	100%	5	83.33%	3	75.00%	6	85.71%	6	100.00%	27	90.0	30
A251	Shreyas Ganesh Ghatole	6	86%	5	83.33%	4	100.00%	6	85.71%	5	83.33%	26	87.0	30
A252	Yash Nitin Kochar	7	100%	3	50.00%	4	100.00%	7	100.00%	6	100.00%	27	90.0	30
A253	Palak Ramteke	6	86%	6	100.00%	4	100.00%	6	85.71%	5	83.33%	27	90.0	30
A254	Shantanu Sunil Rodke	7	100%	6	100.00%	3	75.00%	6	85.71%	6	100.00%	28	94.0	30
A255	Smruti Sunilrao Kumbhalkar	3	43%	5	83.33%	4	100.00%	7	100.00%	2	33.33%	21	70.0	30
A256	Himanshu Mahesh Nagose	7	100%	5	83.33%	3	75.00%	6	85.71%	5	83.33%	26	87.0	30
A257	Anushka Tiwari	5	71%	6	100.00%	4	100.00%	7	100.00%	5	83.33%	27	90.0	30
A258	Gunjan Rajkumar Katre	7	100%	6	100.00%	4	100.00%	6	85.71%	6	100.00%	29	97.0	30
A259	Chetana Gaikwad	7	100%	6	100.00%	4	100.00%	6	85.71%	6	100.00%	29	97.0	30
A260	Siddesh Sharad Purohit	6	86%	5	83.33%	3	75.00%	5	71.43%	5	83.33%	24	80.0	30
A261	Mohit Jeevan Shirsale	6	86%	5	83.33%	3	75.00%	6	85.71%	5	83.33%	25	84.0	30
A262	Anushri Pradiprao Bondse	7	100%	6	100.00%	3	75.00%	5	71.43%	6	100.00%	27	90.0	30
A263	Riza Shabbir Sayyad	4	57%	5	83.33%	4	100.00%	7	100.00%	5	83.33%	25	84.0	30
A264	Chinmay Ashok Telrandhe	6	86%	5	83.33%	4	100.00%	6	85.71%	5	83.33%	26	87.0	30
A265	Sameer Pandurangji Pichkate	7	100%	5	83.33%	2	50.00%	6	85.71%	4	66.67%	24	80.0	30
A266	Kanak Vinod Agalekar	6	86%	4	66.67%	4	100.00%	6	85.71%	6	100.00%	26	87.0	30
A267	Arham Roshan Shaikh	7	100%	6	100.00%	3	75.00%	6	85.71%	5	83.33%	27	90.0	30
A268	Khushi Nilesh Kalantri	6	86%	5	83.33%	3	75.00%	7	100.00%	5	83.33%	26	87.0	30
A269	Kashish Anil Dafe	7	100%	6	100.00%	4	100.00%	6	85.71%	6	100.00%	29	97.0	30
<b>Average Attendance in %</b>			<b>86.34%</b>	<b>86.71%</b>	<b>88.04%</b>	<b>88.20%</b>	<b>85.02%</b>	<b>87.13%</b>						

No. of Units Completed	Unit1:100 %	Unit1:100% Unit2:10%	Unit1:80%	Unit1:100 % Unit2:10%	Unit1:100 %
Name of Faculty	Dr. Nilesh K Ashtankar	Mr. Ajay Kumar Sahu	Mr. Abhishek Kinhekar	Mrs. U. N. Pote	Mr. Amol Jumde

No. of Remedial Classes Conducted	0	0	0	0	0	0
No. of Makeup Classes Conducted	4	0	1	0	0	0
No. of Tutorials Conducted	1	1	1	1	1	1



**Class Incharge**

Mr. Ajay Sahu



**Academic Coordinator**

Mr. Abhishek Kihnekar



**Head of Department**

Prof. Sheetal Kale

**HEAD**  
**Department of Computer Engineering**  
**Bajaj Institute of Technology, WARDHA**



# Shiksha Mandal's BAJAJ INSTITUTE OF TECHNOLOGY, PIPRI, WARDHA Computer Engineering

## Continuous Assessment (CA-I and CA-II) Activity Conducted

### CA-I: Activity2 Conducted: Technical Paper Writing on Machine learning models Snapshot of Blog by students



#### A Survey of Relational and First-Order Probability Models

**Dhirajsingh Chauhan**  
Bajaj Institute of Technology  
Published April 25, 2023

#### Abstract

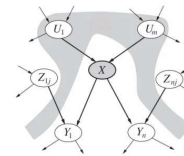
**Probabilistic relational models (PRMs)** are a language for describing statistical models over typed relational domains. A PRM models the uncertainty over the attributes of objects in the domain and uncertainty over the relations between the objects. The model specifies, for each attribute of an object, its (probabilistic) dependence on other attributes of that object and on attributes of related objects. The dependence model is defined at the level of classes of objects. The class dependence model is instantiated for any object in the class, as appropriate to the particular context of the object (i.e., the relations between this object and others). PRMs can also represent uncertainty over the relational structure itself, e.g., by specifying a (class-level) probability that two objects will be related to each other. PRMs provide a foundation for dealing with the noise and uncertainty encountered in most real-world domains. In this chapter, we show that the compact and natural representation of PRMs allows them to be learned directly from an existing relational database using well-founded statistical techniques. We give an introduction to PRMs and an overview of methods for learning them. We show that PRMs provide a new framework for

Medium Search Sign In

#### Approximate & Exact Inference in Bayesian Networks

**Praful Follow**  
Enrolled April 25, 2023

Listen Share



#### Introduction

Bayesian networks are a type of probabilistic graphical model which represents a set of variables and their conditional dependencies using a Directed Acyclic Graph (DAG). Inverse Bayesian inference for probability computations. Bayesian networks aim to model conditional dependence, and therefore causation, by representing conditional dependency by edges in a directed graph. Through these relationships, one can efficiently conduct inference on the random variables in the graph through the use of factors.

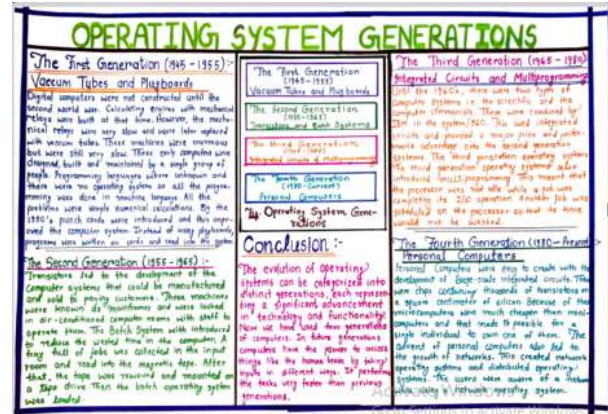
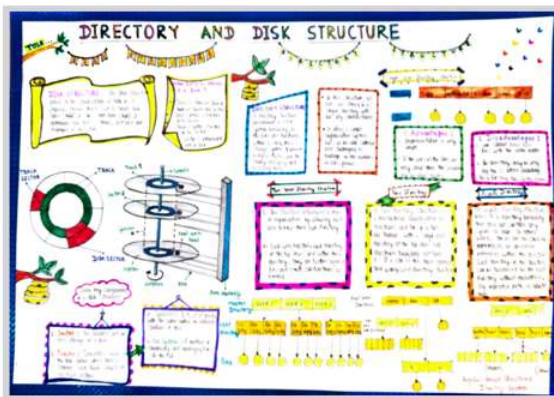
#### The Bayesian Network

Using the relationships specified by our Bayesian network, we can obtain a compact, factored representation of the joint probability distribution by taking advantage of conditional independence.

### Technical Paper Writing : Evaluation Sheet

<b>Bajaj Institute of Technology, Wardha</b> Department of Computer Engineering CA Assessment Sheet						
Subject: Machine Learning			Subject Code: BTCOC603			
CA Activity: CA-I(II)			CA Marks Out of		5	
<b>Rubrics: Technical Paper/Writing</b>						
Refer Link: <a href="https://drive.google.com/drive/folders/113LUZStLJM06cHr0cWzbVSVk_2FO8Xx">https://drive.google.com/drive/folders/113LUZStLJM06cHr0cWzbVSVk_2FO8Xx</a>						
Roll No.	Name of Students	Content	Creativity	Industrial Applicability	Overall Regularity/ Performance	Total
1	Aastha Sudhir Naik	3	3	3	Excellent	5
4	Ankit Sheard Nagdeve	3	3	3	Excellent	5
15	Dhirajsingh Mahendrasingh Chauhan	3	2	3	Good	4
27	Praful Rajesh Kude	1	1	1	Average	2
29	Pranjal Bhaskar Panchwate	1	1	1	Average	2

### CA-II: Self Learning: Infographics Snapshot of Infographics by students



### Infographics : Evaluation Sheet

<b>Bajaj Institute of Technology, Wardha</b> Department of Computer Engineering Continuous Assessment Sheet						
Subject: Operating Systems			Subject Code: BTCOC402			
CA Activity: Self Learning			Marks Out of		10	
<b>Rubrics: Infographics</b>						
Refer Link: <a href="https://drive.google.com/drive/folders/113LUZStLJM06cHr0cWzbVSVk">https://drive.google.com/drive/folders/113LUZStLJM06cHr0cWzbVSVk</a>						
Roll No.	Name of Students	Content	Visuals	Creativity	Overall Regularity/ Performance	Total
A201	Aditi Prakash Manekar	3	3	2	Good	8
A202	Ritika Vinayakrao Bhonge	3	3	3	Excellent	10
A212	Sejal Rajesh Waghmare	3	3	3	Excellent	10
A237	Shantanu Raju Chandankhede	1	1	1	Average	3
A238	Kaushal Sanjayrao Dixit	3	3	3	Excellent	10

**HEAD**

Department of Computer Engineering  
Bajaj Institute of Technology, WARDHA

Prof. Sheetal Kale  
Head of the Department

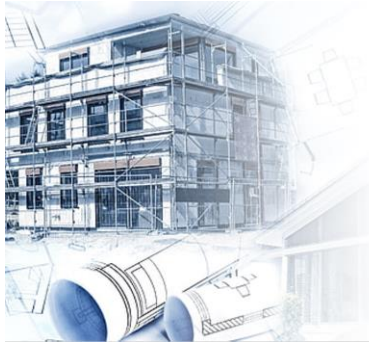
# BAJAJ INSTITUTE OF TECHNOLOGY, WARDHA

## Department of Civil Engineering

### Continuous Assessment – sample

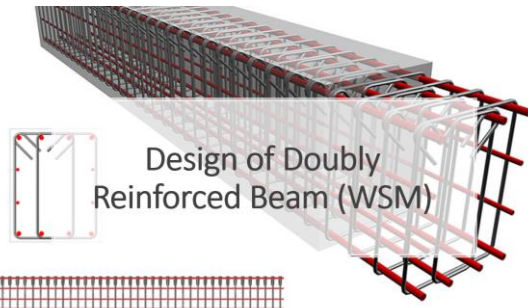
### Design of RC Structures – BTCVC601 (2022-23)

#### CA1 - PPT



#### DESIGN OF RC STRUCTURE [IS456:2000]

Presented By :  
 Aditya Wagh (01)  
 Komal Khodke (16)  
 Sakshi Misar (24)  
 Sejal Somankar (29)  
 Ketaki Bankar (48)



#### Design of Doubly Reinforced Beam (WSM)

#### CA2 - Infographic



A dog-legged staircase is a type of staircase commonly found in residential and commercial buildings. It consists of two flights of stairs connected by a landing, forming a right angle or "dog-leg" shape when viewed from above.

#### Components of Staircase

- Riser:** The part of the staircase between two treads is called a riser.
- Nose post:** The vertical post at the start and end of the flight is called a nose post.
- Baluster:** The vertical support installed throughout the length of a flight on which a handrail is supported to prevent the fall is called a baluster.
- Handrail:** An inclined rail provided at an optimum height so that it can support the person while ascent or descent is called a handrail.
- Landing:** A platform provided to break the continuity of flight for providing rest to the user is called landing.
- Pitch:** The angle the line of nosing makes with horizontal is called pitch.
- Line of nosing:** An imaginary line parallel to the slope of the staircase that joins the nosing of the staircase is called the line of going.



#### Dog-Legged Staircase Design

steps that are typically involved in designing a dog-legged staircase:

- Determine the available space
- Calculate the rise and run of each step
- Determine the number of steps
- Determine the landing size
- Choose the material and finish
- Seek professional advice

#### Advantages

- Efficient use of space
- Simple and economical
- Improved privacy

#### Disadvantage

- Difficult construction
- Positioning of handrail

01- Aditya Wagh  
 16- Komal Khodke  
 24- Sakshi Misar  
 29- sejal somnkar  
 48- ketki bankar

#### Department of Civil Engineering Design of RC Structures 6th Semester (2022-23) (MSE / CA1 / CA2) MARKS

Roll No.	PRN Number	Name of Student	CA1 (PPT)				TOTAL
			Content (3)	Knowledge of subject (3)	Use of Graphics (4)	Overall Regularity/Performance	
1	2046491191001	ADITYA VIVEKANAND WAGH	3	3	4	Excellent	10
2	2046491191002	AKANKSHA VIKAS BHAGAT	3	2	3	Excellent	8
3	2046491191003	AKSHIT BHASKAR SATONE	3	3	4	Excellent	10
5	2046491191005	ARYA PRASHANT SATONE	2	2	2	Fair	6
6	2046491191006	ATHARV VILASRAO GIRHE	3	2	3	Excellent	8
7	2046491191007	AYUSH VINOD JINDE	3	2	4	Excellent	9
8	2046491191008	CHETAN DIPAK SAKHARKAR	2	1	2	Fair	5
9	2046491191009	DEEP RAJENDRA INGOLE	3	2	3	Fair	8
10	2046491191010	DHAMMADEEP RUPCHAND JUNGAE	3	2	3	Fair	8

Subject Incharge  
 Dr. harshad Phadke

#### Department of Civil Engineering Design of RC Structures 6th Semester (2022-23) (MSE / CA1 / CA2) MARKS

Roll No.	PRN Number	Name of Student	CA2 (Self Learning - Infographic)				TOTAL
			Content (3)	Visuals (3)	Creativity (4)	Overall Regularity/Performance	
1	2046491191001	ADITYA VIVEKANAND WAGH	3	3	4	Excellent	10
2	2046491191002	AKANKSHA VIKAS BHAGAT	3	2	3	Excellent	8
3	2046491191003	AKSHIT BHASKAR SATONE	3	3	4	Excellent	10
5	2046491191005	ARYA PRASHANT SATONE	3	2	3	Fair	8
6	2046491191006	ATHARV VILASRAO GIRHE	3	2	4	Excellent	9
7	2046491191007	AYUSH VINOD JINDE	3	2	4	Excellent	9
8	2046491191008	CHETAN DIPAK SAKHARKAR	2	2	2	Fair	6
9	2046491191009	DEEP RAJENDRA INGOLE	3	2	3	Fair	8
10	2046491191010	DHAMMADEEP RUPCHAND JUNGAE	3	2	3	Fair	8

Subject Incharge  
 Dr. harshad Phadke



	<b>Shiksha Mandal's</b> <b>Bajaj Institute of Technology, Wardha</b> (Affiliated to DBATU, Lonere, Raigad, Maharashtra)	Academic Session: 2023-24
		Doc. No.: BITACAD/TAP/ODD Semester /23-24
		Date: 31/07/23

## Teacher Academic Plan

(Doc. No.: BITACAD/TAP/ODD Semester /23-24)

<b>Shiksha Mandal's</b> <b>BIT, Wardha</b>	<b>Teacher Academic Plan</b>			Page	1 of 1
				Prepared on	31/07/23
Academic Year	2023-2024	Class	BE	Semester	ODD
Subject	Mechatronics			Code	BTMC701
Faculty In-charge	Dr. M.D. Pasarkar				
Domain Area	Design Engineering				

S. No	Activity	Date/Number				
1.	Submission of Teaching Plan to HoD	31st July'2023				
2.	Number of lectures planned	36				
3.	Number of lectures available as per AC	42				
4.	Submission of Laboratory plan to HoD	NA				
5.	Number of Lab Sessions planned	NA				
6.	Number of Lab Sessions available as per AC	NA				
7.	CA: Planned/scheduled date ( <i>Activity ONE</i> )	26 <sup>th</sup> August'23				
8.	CA: Planned/scheduled date ( <i>Activity TWO</i> )	23 <sup>rd</sup> September'23				
9.	Self-Learning: Planned/scheduled date	28 <sup>th</sup> October'23				
10.	MSE planned/scheduled date	3 <sup>rd</sup> October'23				
11.	Number of Innovative lab sessions planned (Beyond Syllabus)	---				
12.	Submission of Practical Assessment & Evaluation Sheet to HoD	---				
13.	<b>GAP Analysis and Activity Planning</b>					
	Industrial Visit	Guest Lecture	VAP	ADD-ON	Any other	Last week of Oct
		√				
	Note: Tick the appropriate box					

**Note:** 1) Prepare separate sheet for each subject. 2) Course Teacher shall submit the plan to HoD before start of every semester.

**Dr. M.D. Pasarkar**

**Name and Signature of the faculty member:**

(With date)

Document No	Prepared on	Revised on	Prepared By	Approved By
BITACAD/TAP/ODD Semester /23-24	11/03/23		MDP	Dr. N.M. Kanhe Principal



Shiksha Mandal's

BAJAJ INSTITUTE OF TECHNOLOGY, PIPRI, WARDHA

DEPARTMENT OF MECHANICAL ENGINEERING

Ref: BIT/MECH/HOD/2021/10

Date: 05/08/2021

**Minutes of the Meeting**

Following are the minutes of the faculty meeting held on 5<sup>th</sup> August 2021 at 3:30pm.

**Agenda - 1: Commencement of Classes of Odd Semesters (V & VII Sem)**

It is informed that; the regular online classes of V & VI semester shall begin from 16<sup>th</sup> August 2021. At the beginning classes shall commence in online mode and may be conducted in offline mode as per forthcoming notifications to be issued by competent authorities.

**Action proposed:** *The time table for online classes shall be framed as per the guidelines.*

**Agenda - 2: Framing of Time-Table & Teaching Load**

It is suggested that, Time-Table shall contain the additional/ value added or Add-on Courses which will be useful to the student for their development. It is further suggested that, subject interest shall be invited from the faculty before finalizing the teaching load.

**Agenda - 3: Organization of FDP/ Guest Lectures/ Add-on Courses/ Value added courses**

It is suggested that for FDP & Guest Lectures industry persons should be invited. Department need to propose the Add-on Courses/ Value Added courses for the additional learning and shall be included in the time-table.

**Action proposed:** *Following Addon/ Value-Added courses are proposed.*

V Sem: CAE - Basic - Dr. Deepak Bhope

VII Sem: Production cost Estimation - Dr., Deepak Bhope

**Agenda - 4: Industrial Visits**

It is suggested that, industrial visits shall be organized as per the curriculum gap.

**Action proposed:** *Mr. Suraj Vairagade is asked to prepare the list of industries around Wardha & Nagpur for industrial visits and to establish the communication with them in association with faculty members.*

**Agenda - 5: Selection of Elective Subjects:**

It is informed that the offered elective subjects shall be of advance level and respective teachers should be identified accordingly. The choices for elective subjects shall be invited from the students.

**Action proposed:** *For V Semester, an elective of Automobile Engineering is identified and additional contents related to EV shall be also taught in this subject. For VII sem, Elective-I; IEM is identified as its contents are not included in any of the subjects and it is important from industry point of view. For VII Sem, Elective-II; Wind Energy subject is identified which is important from renewable energy point of view.*

**Agenda - 6: Selection of Project:**

It is proposed to allot the projects as per the topics/ domains invited from faculty members. The methodology of batch formation shall be decided by the concerned department.

**Action proposed:** *It is proposed to invite at least two project topics/ titles from each of the faculty members and students shall be asked to choose the topic irrespective of the teacher. Later as per the topic; teacher will be assigned.*

**Agenda - 7: Submission of VIII Sem Project Reports & Certificates**

It is decided to inform the VIII sem students to submit the Hard bound copy of the project report on or before 10<sup>th</sup> August 2021 with respective guides. All project guides shall inform about status of project submission to the faculty project coordinator for further process & uploading of marks.

*Action taken: Informed accordingly to faculty and VIII sem students to comply with the same. Mr. Santosh Kumar is already looking after it.*

**Agenda - 8: Execution of Phase-I Project**

It is proposed that, the Phase-I of the project should be completed in VII Sem only.

*Action proposed: The final year project is divided into two phases; Phase-I & Phase-II. In Phase-II, an option is given to the students to do the project in the industry as per the topic or area identified by the industry. So, it may create the gap between Phase-I & Phase-II topics. Hence in Phase-I it is decided to identify the topic, to carry out literature review, design the machine & to create its 3-D CAD model. In the Phase-II students who will not opt for internship + project in the industry shall carry out the fabrication of this project.*

Meeting ended with thanks to the faculty.



Dr. Deepak Bhoje

**HEAD**

Department of Mechanical Engineering  
Bajaj Institute of Technology, WARDHA

Date: 05/08/2021

**Copy to:**

1. Respected Principal Sir for kind information.
2. All faculty members to do the needful.
3. Department Meeting File for record.
4. BIT Portal

Shiksha Mandal's

# **Bajaj Institute of Technology, Wardha**

Arvi Road, Pipri, Wardha

## **Department of Computer Engineering**

### **MODEL QUESTION BANK( DESCRIPTIVE)**

Subject with Code :Design and Analysis of Algorithms(BTCOC401)

Year & Sem: II Yr/ IV Sem

#### **UNIT 1: Introduction & Divide and Conquer Techniques**

1. a. Explain the properties of an algorithm with an example. [4M]  
b. Give the algorithm for matrix multiplication and find the time complexity of the algorithm using step count method. [8M]
2. Write Divide – And – Conquer recursive Merge sort algorithm and derive the time complexity of this algorithm. [6M]
3. a. Differentiate between Bigoh and omega notation with example. [6M]  
b. Distinguish between Algorithm and Psuedocode. [6M]
4. a. Define time complexity and space complexity. Write an algorithm for adding n natural numbers and find the space required by that algorithm. [7M]  
b. What are the different mathematical notations used for algorithm analysis. [5M]
5. List out the steps that need to design an algorithm. [5M]
6. Explain how many algorithms can you write for solving find the prime numbers. Compare which is the simplest and the most efficient. [8M]
7. a. Differentiate between Best, average and worst case efficiency. [6M]  
b. Explain Strassen's algorithm for matrix multiplication with the help of an example. [6M]
8. a. Discuss the concepts of asymptotic notations and its properties. [7M]  
b. What do you mean by randomization? [5M]
9. Discuss the General plan for analyzing efficiency of Non recursive & Recursive algorithms Understand and Selection Sort with example? [12M]
10. a. What do you mean by dynamic programming? [5M]  
b. Describe asymptotic notation. [7M]
11. Define Merge sort with example. [8M]
12. Describe Quick Sort with suitable example. [8M]



Abhishek Kinhekar  
Computer Engineering



**Shiksha Mandal's**  
**Bajaj Institute of Technology, Wardha**  
 (Recognized under section 2(f) of UGC Act 1956)

(Affiliated to DBATU, Lonere, Raigad, Maharashtra)

Academic Session: 2023-24

Doc. No.: BITACAD/IQAC/Learning Levels/Mechanical/ 2023

Date: 19/01/2023

## Learning Levels (H, M and L)

**Department: Mechanical Engineering (Batch of 2018-19)**

