ShriTuljabhavani Temple Trust's
SHRI TULJABHAVANI COLLEGE OF ENGINEERING,
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AQAR Report data for A.Y. 2022-23

2.6.2 Attainment of program outcomes, program specific outcomes and course outcomes are evaluated by the Institution		
Sr. No.	**Description of Attachment**	**Page No.**
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2.6.2 Attainment of program outcomes, program specific outcomes and course outcomes are evaluated by the Institution

The Institution and an individual faculty member do use assessment/evaluation outcome for evaluating student's performance and achievement of learning objectives. Some of the details of process being followed by the institution/department/faculty. Term work marks are calculated based on attendance percentage performance in mid semester exam.Also general classroom behavior of the student is also kept in mind when evaluation of student is undertaken. The process of attainment of CO's, PO's and PSO's starts from writing appropriate CO's for each course of the program from first year to fourth year engineering degree program. At the end of each program the PO/PSO assessment is done from the CO attainment of all curriculum components. The description of assessment tools used for evaluation of program outcome is given below.

The process for finding the attainment of Course outcomes uses two methods: Direct methods and indirect methods.

- Direct methods display the student's knowledge and skills from their performance in the class/assignment test, internal assessment tests, assignments, semester examinations, seminars, laboratory assignments/practicals, mini projects etc. These methods provide a sampling of what students understand at the end of course

. • Indirect methods such as course exit survey and examiner feedback of student's learning. They are used to assess the graduate's knowledge or skills.

1. **Direct Assessment tool used for CO attainment**

Assessment tools	Description	Evaluation of CO	Frequency
Theory internal Examination	Two written examinations(Unit test 1 and 2) are conducted and its marks are considered	The questions in internal examination assignments/sheets are mapped against CO's of respective course. The questions for two internal examinations are framed to cover all course outcomes	Two per semester
Assignments	Four assignments are given for each course for continuous assessment. Average marks are considered.	The final Attainment for each CO is calculated by taking average of CO attainments from internal evaluation and assignments	Continuous
Day to Day evaluation	The day to day evaluation is considered	The final attainment for each CO is calculated by taking average of the % attainment from day to	Continuous

		day evaluation and internal lab examination	
Industry oriented Project	To test students concept in design, creative thinking and independent analysis. Two projects reviews are conducted	Two internal projects reviews are conducted and average of these two review assessments are considered	One project review in VII semester
MSE AND ESE	Mid semester exam and End semester university exam marks are considered	The questions in MSE and ESE are mapped and evaluated against CO's of respective course.	At the end of the semester

2. Indirect Assessment tool used for CO attainment

Assessment tools	**Description**	**Evaluation of CO**	**Frequency**
Course exit Survey	Collect variety of information about course outcomes from the students after learning entire course.	The data of the Exit survey is mapped against CO's of respective course.	At the end of the semester

3. List of Assessment tools and Weightage

Assessment tools	**Direct**	**Tools**	**Frequency**	**Weightage**	
		Unit Test-I	Two per semester	40%	80%
		Unit Test-II	Continuous		
		Home Assignments	Continuous		
		End Semester Exam	At the end of the semester	60%	
	Indirect	Exit Survey	At the end of the semester		20%

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

C.T - II – June 2023

Course: B. Tech in Mechanical / E & T C Engineering Class: S.Y. Sem: III

Subject Name: Basic Human Rights Subject Code: BTHM403

Max Marks: 20 Marks Date:- 27 June 2023 Duration:- 1 Hr.

Instructions to the Students

1. *Please check whether you have got the right question paper.*
2. *Please read the instruction carefully.*
3. *Figure to the right indicates full marks.*

				(Level/CO)	Marks
Q. 1	**Solve any *One* of the following. *(A or B)***				12
A	**Write short note on**	B	**Write short note on**		
i)	UDHR	i)	NGO – Human Rights	L2/CO5	
ii)	UNESCO	ii)	BNHS	L2/CO5	
iii)	Human Right Court	iii)	The constitutional rights of disabled persons	L2/CO5	
Q. 2	**Solve any *Two* of the following.**				8
i)	What is the fundamental frame work of Non-Governmental Organizations (NGOs) and how they play the important role in the society?			L2/CO6	
ii)	Elaborate the contribution of NGOs in INDIA to help people get their rights in regard with; water, forest, land.			L2/CO4	
iii)	How many articles have been prescribed by UDHR? Discuss the only article that speaks about equal dignity and equal rights.			L1/CO5	
iv)	Illustrate the fundamental rights in the Constitute of India.			L1/CO3	

*** End ***

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

Mid Sem Exam A.Y.2022-23

Course: B. Tech in Mechanical Engineering

Class: S.Y. B.Tech. **Sem: III**

Subject Name: Thermodynamics **Subject Code: BTMEC305**

Max Marks: 20 Marks **Date:- 05/10/2023** **Duration:- 1 Hr.**

Instructions to the Students:

1. *Assume suitable data wherever necessary.*
2. *Figure to the right indicates full marks*

		(Level /CO)	Marks
Q. 1	**Attempt any TWO of the following**		**12**
i	Define &Explain i) Open system ii) Intensive properties iii) Thermodynamic equilibrium	**CO1**	
ii	Describe the terms Enthalpy, PMM-I and Thermodynamic work	**CO1**	
iii	Explain Constant volume gas Thermometer with neat sketch	**CO1**	
Q. 2	**Attempt any TWO of the following**		**08**
i	Derive the expression for steady flow energy equation (SFEE) on time basis	**CO2**	
ii	Explain first law of thermodynamics for a closed system undergoing a cycle	**CO2**	
iii	Define energy. Explain different forms of energy	**CO1**	

***** End *****

Course Exit Survey

Class: SY(Mechanical)

Engineering Mathematics – III (BTBS301)						*Fluid Mechanics (BTMC302)*					
Q.No	**CO Question Statement**	**CO Rating**				**Q.No**	**CO Question Statement**	**CO Rating**			
		4	**3**	**2**	**1**			**4**	**3**	**2**	**1**
1	Rate yourself based on understanding the Solving of higher order linear differential equation using appropriate techniques for modeling and analyzing electrical circuits.					1	Rate yourself based on understanding the basic properties of fluid, fluid statics, kinematics and dynamics.				
2	Rate yourself based on understanding the Solving problems related to Fourier transform, Laplace transform and applications to Communication systems and Signal processing.					2	Rate yourself based on understanding the various types of flow, flow patterns and their significance.				
3	Rate yourself based on understanding the Interpolating polynomials, numerically differentiate and integrate functions, numerical solutions of differential equations using single step and multi-step iterative methods used in modern scientific computing.					3	Rate yourself based on understanding the concepts of flow through pipes, boundary layer theory, forces on immersed bodies and dimensionless parameters.				
4	Rate yourself based on understanding the Perform vector differentiation and integration, analyze the vector fields and apply to Electromagnetic fields.					4	Rate yourself based on understanding the Derive various equations in fluid mechanics such as Euler's, Bernoulli's, Momentum, Continuity etc				
5	Rate yourself based on understanding the Analysis of conformal mappings, transformations and perform contour integration of complex functions in the study of electrostatics and signal processing.						Rate yourself based on understanding the problems related to properties of fluid, fluid kinematics, fluid dynamics, laminar flow, pipe flow, dimensional analysis, boundary layer theory, and forces on immersed bodies.				

Note: '4'-Excellent, '3'-Good, '2'-Average, '1'-Poor

Thermodynamics (BTMEC305)						*Materials Science and Metallurgy(BTMES304)*						*Machine Drawing and CAD Lab(BTMCL305)*					
Q.No	**CO Question Statement**	**CO Rating**				**Q.No**	**CO Question Statement**	**CO Rating**				**Q.No**	**CO Question Statement**	**CO Rating**			
		4	**3**	**2**	**1**			**4**	**3**	**2**	**1**			**4**	**3**	**2**	**1**
1	Rate yourself based on understanding the terms like system, boundary, properties, equilibrium, work, heat, ideal gas, entropy etc. used in thermodynamics.					1	Rate yourself based on understanding the various crystal structures of materials, mechanical properties of materials and calculations of same using appropriate equations					1	Rate yourself based on understanding the Interpretation of object with the help of given sectional and orthographic views.Construction of the curve of intersection of two solids				
2	Rate yourself based on understanding the different laws of thermodynamics and apply these to simple thermal systems like balloon, piston-cylinder arrangement, compressor, pump, refrigerator, heat exchanger, etc. to study energy balance and concept to non-flow and steady flow type systems					2	Rate yourself based on understanding the phase diagrams of various materials					2	Rate yourself based on understanding the Drawing machine element using keys, cotter, knuckle, bolted and welded joint				
3	Rate yourself based on understanding the various types of processes like isothermal, adiabatic, etc. considering system with ideal gas and represent them on p-v and T-s planes.					3	Rate yourself based on understanding the appropriate heat treatment process for a given application					3	Rate yourself based on understanding the Assemble details of any given part. i. e. valve, pump , machine tool part etc.				
4	Rate yourself based on understanding the phase diagram of pure substance (steam) on different thermodynamic planes like p-v, T-s, h-s, etc. Show various constant property lines on them.					4	Rate yourself based on understanding to Prepare samples of different materials for metallography					4	Rate yourself based on understanding the representation of tolerances and level of surface finish on production drawings				
						5	Rate yourself based on understanding the appropriate NDT technique for a given application					5	Rate yourself based on understanding the various creating and editing commands in Auto Cad				

Note: '4'-Excellent, '3'-Good, '2'-Average, '1'-Poor

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Hydraulic-I (BTCVC304)

Class: SY(Civil) A.Y.2022-23 Sem: III

Course Outcomes:

At the end of the course, students will be able to:

CO1: Determine the properties of fluid and pressure and their measurement. Calibrate the various flow measuring devices.
CO2: Explain various types of flow. Calculate acceleration of fluid particles. Apply Bernoulli's equation
CO3: Explain dimensional analysis andLaminar & Turbulent Flow to simple problems in Civil Engineering systems.
CO4: Understand fundamentals of pipe flow, losses in pipe and analysis of pipe network.

Mapping of course outcomes with program outcomes/PSO

Course outcome	Program Outcomes												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
CO1	3	3	2	2	1	-	-	-	-	-	-	1			
CO2	3	3	1	1	1	-	-	-	-	-	-	2			
CO3	3	3	-	-	-	-	-	-	-	-	-	1			
CO4	3	3	2	-	1	-	-	-	-	-	-	2			
Average PO Mapping(M)	3	3	1.66	1.5	1	-	-	-	-	-	-	1.5			

Here in the table, '3' corresponds to a high correlation; '2' corresponds to a medium correlation, and '1' corresponds to a low correlation, between CO and PO

Data sheet for CO attainment calculation

Roll No	NAME	UT-I		UT-II		ASSIGNMENT				ESE
		Q.1 (10)	Q.2 (10)	Q.1 (10)	Q.2 (10)	AS-1 (10)	AS-2 (10)	AS-3 (10)	AS-4 (10)	OUT OF 100
		CO1	CO2	CO3	CO4	CO1	CO2	CO3	CO4	
2101	ButeAnkitaRajendra	0	0	0	0	5	5	10	5	51
2102	Kale OnkarBabasaheb	0	0	0	0	5	5	5	5	37
2103	KetanMohanraoBanwaskar	0	0	5	3	5	5	5	5	22
2104	SulgadleSanjanaSomeshwar	0	0	8	8	7	7	8	9	47
2105	ShwetaAbasahebJadhav	3	1	7	6	8	9	8	9	39
2106	Rodge Nikita Bidhisan	1	1	5	5	9	7	9	9	58
2107	Gore AmitAmbrushi	2	0	7	8	8	6	10	9	42
2108	DeshpandeVaishnaviVijaykumar	2	0	5	5	8	9	10	10	52
2109	MagarVaishnaviNarsing	2	1	4	4	9	9	10	10	71
2110	KashidShubham Ganesh	2	1	7	6	7	7	10	10	62
2111	PadwalShubham Sham	2	0	6	5	7	7	9	9	62
2112	KapseSaurabhSambhaji	3	2	6	5	7	7	5	5	20
2113	BibraleSakshiChandrakant	1	0	6	6	9	8	7	8	52
2114	JadhavSnehaBalaji	1	0	5	4	9	9	10	8	55
2115	DudhbhateRupaliDhondiram	1	0	8	5	10	9	10	9	66
2116	ZirmireArpitaPralhad	1	0	4	3	10	10	10	10	57
2117	PatilShrutiBhimshankar	4	3	8	9	10	10	10	10	62

Roll No	NAME	UT-I		UT-II		ASSIGNMENT				ESE
		Q.1 (10)	Q.2 (10)	Q.1 (10)	Q.2 (10)	AS-1 (10)	AS-2 (10)	AS-3 (10)	AS-4 (10)	OUT OF 100
		CO1	CO2	CO3	CO4	CO1	CO2	CO3	CO4	
2118	KadamRutujaVyankat	3	1	5	4	10	9	10	9	53
2119	ShraddhaBhausahebTapse	5	1	9	10	10	9	10	10	72
2120	JettiJayashriNagnath	4	0	9	9	9	9	10	8	76
2121	JojanAnkitaSidhappa	0	0	5	1	6	6	7	8	41
2122	VirgatMohiniYadav	4	2	6	4	10	10	10	10	67
2123	TukaramVyankatDevkar	1	0	2	2	5	5	5	5	23
2124	SonvaneAshish Ashok	0	0	4	3	9	9	10	9	47
2125	ShingareShwetaBhahwat	5	4	6	6	8	9	10	9	46
2126	SuryawanshiAbhishekDadasaheb	0	0	4	2	7	7	6	6	26
2127	KhandalePallavi Rajesh	5	5	8	8	10	10	10	10	63
2128	KhobreOmkarBhagvat	0	0	5	3	7	7	8	8	34
2129	WarpeAakanshaNeminath	0	0	7	7	9	9	8	9	65
Number of students who have scored more than target (P)		CO1	17	CO2	09	CO3	26	CO4	24	23
Percentage of students who have achieved the target		CO1	58	CO2	31	CO3	89	CO4	82	79

CO Attainment Calculations

The target (P) may be 50% (first division) for UT and 40% for ESE or as per the requirements of the course and program. Further, the target remains same for direct and indirect assessments

	CO Attainment Calculations						
		Direct assessment					Indirect Assessment Students/Faculty
		Direct Assessment 1 (CIA)				Direct Assessment 2 (CIA)	Course Exit Survey
		CO1	CO2	CO3	CO4	ESE	
	Number of students who have scored more than target (P)	17	09	26	24	23	29
	Percentage of students who have achieved the target = (P/N)*100	58	31	89	82	79	100
A	**Attainment Level (3 for >70%, 2 for 50 %< P ≤70%, 1 for <50%)**	2	1	3	3	3	3
B	**Attainment based on internal assessment (CIA) = Average of all CO level;**	2.25					
C	**Direct CO Attainment Level (DA) =40%CIA + 60% End-Term (C);**	2.7					
D	**Indirect CO Attainment Level (IA) (based on Exit Survey);**	3					
	80 % of DA	2.16					
	20 % IA	0.6					
E	**CO Attainment Level (COA) = 80 % DA+ 20 % IA;**	2.76					

PO/PSO attainment calculations

PO Attainment= COA x M/3 (Refer to Step 6 for COA value)

Course outcome	Program Outcomes												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Average PO Mapping(M)	3	3	1.66	1.5	1	-	-	-	-	-	-	1.5			
PO / PSO Attainment Level*	2.76	2.76	1.52	1.38	0.92	-	-	-	-	-	-	1.38			

* = COA x M/3 (Refer to Step 6 for COA value)

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CADCAM (BTMEC702)

Class: B.Tech (Mech) A.Y.2022-23 Sem: VII

Course Outcomes:

At the end of the course, students will be able to:

Course Outcomes: At the end of the course, students will be able to:	
CO1	List and describe the various input and output devices for a CAD work station and Carry out/calculate the 2-D and 3-D transformation
CO2	Describe various CAD modelling techniques with their relative advantages and limitations
CO3	Develop NC part program for the given component, and robotic tasks and Describe the basic Finite Element procedure and solve analysis problem for , Static, dynamic and thermal analysis.
CO4	Explain various components of a typical FMS system, Robotics, and CIM Classify parts in part families for GT and Describe and differentiate the CAPP systems

Mapping of course outcomes with program outcomes/PSO

Course Outcomes	Program Outcomes														
	PO1	PO2	PO 3	PO4	P O 5	PO 6	PO 7	PO 8	PO9	PO10	PO 11	P O 12	PS O1	PSO 2	PS O3
CO1	3	3	1	1	2	-	-	-	1	1	-	1	2	1	--
CO2	2	2	1	2	3	-	-	-	1	1	-	1	2	1	--
CO3	3	3	1	3	3	-	-	-	1	1	-	1	2	1	--
CO4	2	3	1	1	0	-	-	-	0	0	-	1	2	1	1
Average	2.5	2.75	1	1.75	2	-	-	-	0.75	0.75	-	1	2	1	0.2 5

Here in the table, '3' corresponds to a high correlation; '2' corresponds to a medium correlation, and '1' corresponds to a low correlation, between CO and PO

Data sheet for CO attainment calculation

Roll No	NAME	UT-I		UT-II		ASSIGNMENT				ESE
		Q.1 (10)	Q.2 (10)	Q.1 (10)	Q.2 (10)	AS-1 (10)	AS-2 (10)	AS-3 (10)	AS-4 (10)	OUT OF 100
		CO1	CO2	CO3	CO4	CO1	CO2	CO3	CO4	
1	Shinde Pratik Ramesh	2	4	8	8	8	8	5	5	92
2	Dhappadhule Akash M.	8	8	9	9	9	9	9	9	63
3	Dongre Rituja Anilrao	3	6	8	8	8	8	9	9	62
4	Gund Rushikesh	2	3	8	7	5	5	5	5	66
5	Aalne Ramesh	2	4	8	7	5	5	5	5	60
6	Biradar Shubham G.	8	8	8	9	9	9	9	9	64
7	Chinchole Kartik S.	4	6	8	8	8	8	9	9	56
8	Narayan R. Joshi	2	4	8	7	8	8	6	6	35
9	Kadam Bhagyashri B.	7	7	0	0	8	8	8	8	65
10	Kulkarni Subham L.	7	7	8	9	8	8	9	9	67
11	Mahamuni Prithviraj D.	3	5	0	0	5	5	6	6	76
12	Patil Akash Vishvanath	8	9	8	9	8	8	9	9	53
13	Patil Ashwini Jagannath	2	3	8	7	8	8	9	9	64
14	Patil Nikhil Nilkanth	6	8	9	9	8	8	8	8	72
15	Sagar Avinash Nagnath	8	8	8	8	8	8	10	10	62
16	Vibhute Vaibhav U.kar	2	3	8	7	8	8	8	8	90
17	Panchal Mahesh H.	9	9	10	10	10	10	9	9	80
18	Patil Vishwanath M.	2	3	6	6	5	5	5	5	72
19	Bardale Akash Baswarat	2	3	6	5	8	8	8	8	64
20	Bhanji Samarth Satish	2	5	8	8	8	8	7	7	60
21	Bandgar Ganesh Rajesh	3	5	7	6	7	7	5	5	52
22	Bagal Chetan	1	4	8	7	5	5	5	5	90
	Number of students who have scored more than target (P)	CO1	17	CO2	18	CO3	20	CO4	20	21
	Percentage of students who have achieved the target	CO1	77.27	CO2	81.82	CO3	90.91	CO4	90.91	95.45

CO Attainment Calculations

The target (P) may be 60% (first division) or as per the requirements of the course and program. Further, the target remains same for direct and indirect assessments

	CO Attainment Calculations						
		Direct assessment					Indirect Assessment Students/Faculty
		Direct Assessment 1 (CIA)				Direct Assessment 2 (CIA)	Course Exit Survey
		CO1	CO2	CO3	CO4	ESE	
	Number of students who have scored more than target (P)	17	18	20	20	21	22
	Percentage of students who have achieved the target = (P/N)*100	77.27	81.82	90.91	90.91	95.45	100
A	**Attainment Level (3 for >70%, 2 for >60%, 1 for> 50%)**	3	3	3	3	3	3
B	**Attainment based on internal assessment (CIA) = Average of all CO level;**	3					
C	**Direct CO Attainment Level (DA) =40%CIA + 60% End-Term (C);**	3					
D	**Indirect CO Attainment Level (IA) (based on Exit Survey);**	3					
	80 % of DA	2.4					
	20 % IA	0.6					
E	**CO Attainment Level (COA) = 80 % DA+ 20 % IA;**	3					

PO attainment calculations

PO Attainment= COA x M/3 (Refer to Step 6 for COA value

Course outcome	Program Outcomes														
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PS O1	PS O2	PS O3
Average PO Mapping(M)	2.5	2.75	1	1.75	2	-	-	-	0.75	0.75	-	1	2	1	0.25
PO Attainment Level*	2.5	2.75	1	1.75	2	-	-	-	0.75	0.75	-	1	2	1	0.25

* = COA x M/3 (Refer to Step 6 for COA value)

Manufacturing Processes-I (BTMC 401)

Class: SY(Mech) A.Y.2022-23 Sem: IV

Course Outcomes:

At the end of the course, students will be able to:

CO1: Identify castings processes, working principles and applications and list various defects in metal casting

CO2: Understand the various metal forming processes, working principles and applications. Classify the basic joining processes and demonstrate principles of welding, brazing and soldering.

CO3: Study center lathe and its operations including plain, taper turning, work holding devices and cutting tool.

CO4: Understand milling machines and operations, cutters and indexing for gear cutting. Study shaping, planning and drilling, their types and related tooling's

Mapping of course outcomes with program outcomes/PSO

Course outcome	Program Outcomes												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
CO1	1	1	1	-	1	1	-	-	-	1	-	1	3	-	-
CO2	2	2	1	-	1	1	-	-	-	1	-	1	3	-	-
CO3	1	-	1	-	1	1	-	-	-	1	-	1	3	-	-
CO4	2	-	1	-	1	1	-	-	-	1	-	1	3	-	-
Average PO Mapping(M)	1.5	0.75	01	-	1	1	-	-	-	1	-	1	3	-	-

Here in the table, '3' corresponds to a high correlation; '2' corresponds to a medium correlation, and '1' corresponds to a low correlation, between CO and PO

Data sheet for CO attainment calculation

Roll No	NAME	UT-I	UT-II			ASSIGNMENT				ESE
		Q.1 & 2	Q.1	Q.2	Q.3	AS-1	AS-2	AS-3	AS-4	OUT OF 100
		CO1	CO2	CO3	CO4	CO1	CO2	CO3	CO4	
2202	YADAV SONALI R	15	9	1	1	9	10	9	10	57
2203	DURE SARANG G	5	3	2	2	9	8	8	8	49
2205	KALE SURAJ S	15	4	3	3	8	8	8	8	34
2206	SURYAWANSHI BHAGWAN V	11	7	5	5	9	8	8	9	55
2207	ZADKE SAGAR R	4	2	0	0	8	8	8	8	49
2208	SAYYAD ALFIYA A	14	8	0	0	10	9	9	10	68
2209	MAGAR PRATHMESH P	3	1	1	1	7	8	8	7	24
2210	KAPSE SHRADDHA J	19	9	2	2	10	9	10	9	10
2211	KILJE PRADEEP S	13	5	3	3	8	8	8	8	51
2212	HANGARGE AMIT M	3	4	2	2	9	8	8	8	53
2213	SURYAWANSHI PRIYANKA G	12	4	3	3	9	9	10	10	52
Number of students who have scored more than target (P)		CO1	7	CO2	10	CO3	8	CO4	9	8
Percentage of students who have achieved the target		CO1	63.6	CO2	90.9	CO3	72.7	CO4	81.8	72.7

CO Attainment Calculations

The target (P) may be 50% (first division) for UT and 40% for ESE or as per the requirements of the course and program. Further, the target remains same for direct and indirect assessments

	CO Attainment Calculations						
		Direct assessment					Indirect Assessment Students/Faculty
		Direct Assessment 1 (CIA)				Direct Assessment 2 (CIA)	Course Exit Survey
		CO1	CO2	CO3	CO4	ESE	
	Number of students who have scored more than target (P)	7	10	8	9	8	11
	Percentage of students who have achieved the target = (P/N)*100	63.6	90.9	72.7	81.8	72.7	100
A	**Attainment Level (3 for >70%, 2 for 50 %< P ≤70%, 1 for <50%)**	2	3	3	3	3	3
B	**Attainment based on internal assessment (CIA) = Average of all CO level;**	2.75					
C	**Direct CO Attainment Level (DA) =40%CIA + 60% End-Term (C);**	2.9					
D	**Indirect CO Attainment Level (IA) (based on Exit Survey);**	3					
	80 % of DA	2.32					
	20 % IA	0.6					
E	**CO Attainment Level (COA) = 80 % DA+ 20 % IA;**	2.92					

PO/PSO attainment calculations

PO Attainment= COA x M/3 (Refer to Step 6 for COA value)

Course outcome	Program Outcomes												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Average PO Mapping(M)	1.5	0.75	1	-	1	1	-	-	-	1	-	1	3	-	-
PO / PSO Attainment Level*	1.46	0.73	0.97	-	0.97	0.97	-	-	-	0.97	-	0.97	2.92	-	-

* = COA x M/3 (Refer to Step 6 for COA value)

Fluid Mechanics(BTMC302)

Class: SY(Mech) A.Y.2022-23 Sem: III

Course Outcomes:

At the end of the course, students will be able to:

CO1: Define fluid, define and calculate various properties of fluid. Calculate hydrostatic forces.

CO2: Explain various types of flow. Calculate acceleration of fluid particles. Apply Bernoulli's equation and Navier-Stokes equation, Flow through pipes

CO3: Explain dimensional analysis to simple problems in fluid mechanics

CO4: Explain Centrifugal Pump problems in fluid mechanics

Mapping of course outcomes with program outcomes/PSO

Course outcome	Program Outcomes												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
CO1	3	3	2	2	1	--	--	--	--	--	--	1	2	3	--
CO2	3	3	1	1	1		--	--	--	--	--	1	2	3	--
CO3	3	3	--	--	--	--	--	--	--	--	--	1	2	3	--
CO4	3	3	--	--	--	--	--	--	--	--	--	1	2	3	--
Average PO Mapping(M)	3	3	1.5	1.5	1	--	--	--	--	--	--	1	2	3	

Here in the table, '3' corresponds to a high correlation; '2' corresponds to a medium correlation, and '1' corresponds to a low correlation, between CO and PO

Data sheet for CO attainment calculation

Roll No	NAME	UT-I		UT-II		ASSIGNMENT				ESE
		Q.1 (10)	Q.2 (10)	Q.1 (10)	Q.2 (10)	AS-1 (10)	AS-2 (10)	AS-3 (10)	AS-4 (10)	OUT OF 100
		CO3	CO4	CO2	CO1	CO1	CO2	CO3	CO4	
2201	DALWE YOGESH K	2	1	5	4	8	7	6	9	36
2202	YADAV SONALI R	6	4	8	6	9	10	9	8	27
2203	DURE SARANG G	3	3	4	3	7	7	8	8	51
2204	SHELKE PAWAN D	0	0	1	0	6	6	6	8	44
2205	KALE SURAJ S	2	2	3	3	9	9	8	8	33
2206	SURYAWANSHI BHAGWAN V	6	0	0	2	8	6	8	8	38
2207	ZADKE SAGAR R	3	2	1	2	8	9	9	8	58
2208	SAYYAD ALFIYA A	0	0	2	1	8	8	8	8	40
2209	MAGAR PRATHMESH P	0	0	0	0	6	7	7	8	34
2210	KAPSE SHRADDHA J	6	1	8	5	10	10	10	10	70
2211	KILJE PRADEEP S	0	0	1	0	7	7	8	7	40
2212	HANGARGE AMIT M	0	0	0	0	7	7	8	8	44
2213	SURYAWANSHI PRIYANKA G	4	2	0	0	7	7	7	8	30
Number of students who have scored more than target (P)		CO1	07	CO2	07	CO3	07	CO4	07	07
Percentage of students who have achieved the target		CO1	53.84	CO2	53.84	CO3	53.84	CO4	53.84	53.84

CO Attainment Calculations

The target (P) may be 50% (first division) for UT and 40% for ESE or as per the requirements of the course and program. Further, the target remains same for direct and indirect assessments

	CO Attainment Calculations						
		Direct assessment					Indirect Assessment Students/Faculty
		Direct Assessment 1 (CIA)				Direct Assessment 2 (CIA)	Course Exit Survey
		CO1	CO2	CO3	CO4	ESE	
	Number of students who have scored more than target (P)	07	07	07	07	07	11
	Percentage of students who have achieved the target = (P/N)*100	53.84	53.84	53.84	53.84	53.84	94
A	**Attainment Level (3 for >70%, 2 for 50 %< P ≤70%, 1 for <50%)**	2	2	2	2	2	3
B	**Attainment based on internal assessment (CIA) = Average of all CO level;**	2					
C	**Direct CO Attainment Level (DA) =40%CIA + 60% End-Term (C);**	2					
D	**Indirect CO Attainment Level (IA) (based on Exit Survey);**	3					
	80 % of DA	1.6					
	20 % IA	0.6					
E	**CO Attainment Level (COA) = 80 % DA+ 20 % IA;**	2.2					

PO/PSO attainment calculations

PO Attainment= COA x M/3 (Refer to Step 6 for COA value)

Course outcome	Program Outcomes												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Average PO Mapping(M)	3	3	1.5	1.5	1	NA	NA	NA	NA	NA	NA	1	2	3	NA
PO / PSO Attainment Level*	2.2	2.2	1.1	1.1	0.73	NA	NA	NA	NA	NA	NA	0.73	1.46	2.2	NA

Theory of Machines-I (BTMC402)

Class: SY(Mech) A.Y.2022-23 Sem: IV

Course Outcomes:

At the end of the course, students will be able to:

CO1: Define basic terminology of kinematics of mechanisms, and calculate its degree of freedom

CO2: Perform kinematic analysis of a given mechanism using ICR and RV methods, slider crank mechanism using Klein's construction.

CO3: To understand Friction & Lubrication and calculate friction in mechanism considering Uniform wears & pressure theory also for brake and clutch.

CO4: To draw different cam profile and balancing of masses.

Mapping of course outcomes with program outcomes/PSO

Course outcome	Program Outcomes												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
CO1	-	-	-	1	-	-	-	-	-	-	-	3	2	2	-
CO2	1	1	-	2	-	-	-	-	-	-	-	3	3	2	-
CO3	1	1	-	3	-	-	-	-	-	-	-	2	3	2	-
CO4	1	1	-	1	-	-	-	-	-	-	-	3	2	2	-
Average PO Mapping(M)	1	1	-	1.75	-	-	-	-	-	-	-	2.75	2.5	2	-

Here in the table, '3' corresponds to a high correlation; '2' corresponds to a medium correlation, and '1' corresponds to a low correlation, between CO and PO

Data sheet for CO attainment calculation

Roll No	NAME	UT-I		UT-II		ASSIGNMENT				ESE
		Q.1 (10)	Q.2 (10)	Q.1 (10)	Q.2 (10)	AS-1 (10)	AS-2 (10)	AS-3 (10)	AS-4 (10)	OUT OF 100
		CO1	CO2	CO3	CO4	CO1	CO2	CO3	CO4	
2201	DALWE YOGESH K	0	0	0	0	0	0	0	0	D
2202	YADAV SONALI R	5	6	5	5	9	9	9	9	36
2203	DURE SARANG G	5	5	2	4	5	5	5	5	26
2204	SHELKE PAWAN D	0	0	0	0	0	0	0	0	D
2205	KALE SURAJ S	8	6	2	3	5	5	8	8	52
2206	SURYAWANSHI BHAGWAN V	8	6	3	2	5	5	7	8	41
2207	ZADKE SAGAR R	5	5	2	2	5	5	6	6	28
2208	SAYYAD ALFIYA A	8	8	5	5	8	8	9	9	55
2209	MAGAR PRATHMESH P	2	2	2	2	5	5	6	6	25
2210	KAPSE SHRADDHA J	10	8	6	6	10	10	10	10	70
2211	KILJE PRADEEP S	2	4	3	3	5	5	6	6	29
2212	HANGARGE AMIT M	2	2	2	2	5	5	6	6	25
2213	SURYAWANSHI PRIYANKA G	7	6	6	6	10	10	10	10	45
Number of students who have scored more than target (P)		CO1	08	CO2	08	CO3	06	CO4	06	05
Percentage of students who have achieved the target		CO1	72.72	CO2	72.72	CO3	54.54	CO4	54.54	45.45

CO Attainment Calculations

The target (P) may be 50% (first division) for UT and 40% for ESE or as per the requirements of the course and program. Further, the target remains same for direct and indirect assessments

	CO Attainment Calculations						
		Direct assessment					Indirect Assessment Students/Faculty
		Direct Assessment 1 (CIA)				Direct Assessment 2 (CIA)	Course Exit Survey
		CO1	CO2	CO3	CO4	ESE	
	Number of students who have scored more than target (P)	08	08	06	06	05	11
	Percentage of students who have achieved the target = (P/N)*100	72.72	72.72	54.54	54.54	45.45	100
A	**Attainment Level (3 for >70%, 2 for 50 %< P ≤70%, 1 for <50%)**	3	3	2	2	1	3
B	**Attainment based on internal assessment (CIA) = Average of all CO level;**	2.5					
C	**Direct CO Attainment Level (DA) =40%CIA + 60% End-Term (C);**	1.6					
D	**Indirect CO Attainment Level (IA) (based on Exit Survey);**	3					
	80 % of DA	1.28					
	20 % IA	0.6					
E	**CO Attainment Level (COA) = 80 % DA+ 20 % IA;**	1.88					

PO/PSO attainment calculations

PO Attainment= COA x M/3 (Refer to Step 6 for COA value)

Course outcome	Program Outcomes												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Average PO Mapping(M)	1	1	-	1.75	-	-	-	-	-	-	-	2.75	2.5	2	-
PO / PSO Attainment Level*	0.62	0.62	NA	1.06	NA	NA	NA	NA	NA	NA	NA	1.72	1.56	1.25	-

* = COA x M/3 (Refer to Step 6 for COA value)

Electrical Machines and Instruments(BTES304)

Class: SY (ETC) A.Y.2022-23Sem: III

Course Outcomes:

At the end of the course, students will be able to:

1. The ability to formulate and then analyze the working of any electrical machine using mathematical model under loaded and unloaded conditions.

2. The skill to analyze the response of any electrical machine.

3. The ability to troubleshoot the operation of an electrical machine.

4. The ability to select a suitable measuring instrument for a given application. The ability to estimate and correct deviations in measurements due to the influence of the instrument and due to the accuracy of the instrument.

Mapping of course outcomes with program outcomes/PSO

Course outcome	Program Outcomes												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
CO1	3	2	1	1									2	1	
CO2	1	1	2	1										2	
CO3		1	1	2	1									1	2
CO4		1	1	1	1								1	1	1
Average PO Mapping(M)	1	1.25	1.25	1.25	0.5								0.75	1.25	0.75

Here in the table, '3' corresponds to a high correlation; '2' corresponds to a medium correlation, and '1' corresponds to a low correlation, between CO and PO

Data sheet for CO attainment calculation

Roll No	NAME	UT-I			UT-II				ASSIGNMENT		ESE	
		Q1, 4,5	Q2	Q3	Q.1, 2	Q.3, 4	Q.5	AS-1	AS-2	AS-3	AS-4	OUT OF 100
		CO1	CO2	CO3	CO2	CO3	CO4	CO1	CO2	CO3	CO4	
2401	Bachate Anjali Ganesh	8	4	4	4	8	7	4	4	4	4	65
2402	JamadarSakshiRaghavendra	4	2	2	0	0	0	2	2	2	2	42
2403	KadamOnkarNitin	8	5	4	0	0	0	2	2	2	2	37
2404	YalamgondeShivamDigamber	10	5	4	0	2	2	4	4	4	4	52
2405	MahadwadAnujBalaji	9	5	4	0	0	0	4	4	4	4	54
2406	PalleSwapnil Shankar	7	4	5	2	4	4	4	4	4	4	58
2407	SavaleDakshani Vijay	4	1	2	7	2	5	4	4	4	4	51
2408	Mane PayalParmeshwar	8	4	4	8	4	5	4	4	4	4	56
2409	GavateAditi Anil	8	0	4	2	7	5	4	4	4	4	72
2410	PatilVaishnavi Sanjay	4	2	2	4	9	5	4	4	4	4	66
2411	Kale Jyoti Kailas	7	2	5	8	2	5	4	4	4	4	66
2412	BhureShivaniParmeshwar	9	3	4	9	10	0	4	4	4	4	83
2413	AlangeShubhangiShripatti	10	4	5	10	10	0	4	4	4	4	68
2414	WaycholeVaishnaviNahnath	6	4	1	5	8	5	4	4	4	4	61
2415	DongareSushma Sanjay	4	2	2	8	2	4	4	4	4	4	68
2416	ShaikhJameerPirpasha	7	5	3	4	8	3	4	4	4	4	60
2417	PawarPruthviraj Bharat	10	5	4	4	8	6	4	4	4	4	62
2418	SawantSonali Ganesh	12	0	4	9	4	5	4	4	4	4	64
2419	YelapureGayatriDigambar	6	2	5	9	5	5	4	4	4	4	58
2420	AartiRamnathHadule	7	0	2	4	7	4	4	4	4	4	66
2421	SushmaHanmant Raghu	5	3	4	8	9	0	4	4	4	4	67
2422	SonpethkarPrachiVimalnath	13	0	4	9	4	4	4	4	4	4	80

2423	OzaAtharuaRameshwar	-	-	-	-	-	-	-	-	-	-	-
2424	Kale RohiniBaliram	10	5	5	8	4	5	4	4	4	4	66
2425	ShivdareMahadev Vilas	0	0	0	0	8	4	2	2	2	2	41
2427	KarpeVivekNagesh	0	0	0	0	0	0	2	2	2	2	12
2428	HandeSiddramappaShridhar	9	0	2	5	9	4	4	4	4	4	51
2429	ShindeDnyaneshwaribabruwan	9	0	5	6	3	0	4	4	4	4	45
2430	GaradSupriyaBansidhar	6	3	4	8	4	2	4	4	4	4	57
2431	PanchalAkshayRamchandra	8	2	4	2	2	3	4	4	2	2	53
2432	ShaikhMahekmaksud	6	0	0	4	4	0	4	4	2	2	56
2434	ChilobaShwetaRajendra	10	4	2	5	7	2	4	4	4	4	77
2435	ZirmireVaibhaviMurlidhar	10	0	5	7	4	5	4	4	4	4	71
2436	PriyankaRohidasSurvase	0	0	0	9	4	5	4	4	4	4	66
2437	AbhijeetBhagwatKhobre	-	-	-	-	-	-	-	-	-	-	-
2438	HolambeVaishnavisanjay	3	2	5	4	8	5	4	4	4	4	65
2439	Shaikh Saba Chand	5	3	5	7	4	5	4	4	4	4	63
2440	Kalwat Nikita Sayara	0	0	2	4	8	5	2	2	2	2	64
Number of students who have scored more than target (P)		CO1		27	CO2	26	CO3		30	CO 4	31	31
Percentage of students who have achieved the target		CO1		71	CO2	68	Co3		78	CO 4	77	77

CO Attainment Calculations

The target (P) may be 50% (first division) for UT and 40% for ESE or as per the requirements of the course and program. Further, the target remains same for direct and indirect assessments

	CO Attainment Calculations						
		Direct assessment					Indirect Assessment Students/Faculty
		Direct Assessment 1 (CIA)				Direct Assessment 2 (CIA)	Course Exit Survey
		CO1	CO2	CO3	CO4	ESE	
	Number of students who have scored more than target (P)	27	26	30	31	31	31
	Percentage of students who have achieved the target = (P/N)*100	71	68	78	77	77	77
A	**Attainment Level (3 for >70%, 2 for 50 %< P ≤70%, 1 for <50%)**	3	2	3	3	3	3
B	**Attainment based on internal assessment (CIA) = Average of all CO level;**	2.75				3	3
C	**Direct CO Attainment Level (DA) =40%CIA + 60% End-Term (C);**	2.87					3
D	**Indirect CO Attainment Level (IA) (based on Exit Survey);**	3					
	80 % of DA	2.29					
	20 % IA	0.6					
E	**CO Attainment Level (COA) = 80 % DA+ 20 % IA;**	2.89					

PO/PSO attainment calculations

PO Attainment= COA x M/3 (Refer to Step 6 for COA value)

Course outcome	Program Outcomes												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Average PO Mapping(M)	1	1.25	1.25	1.25	0.5	-	-	-	-	-	-	-	0.75	1.25	0.75
PO / PSO Attainment Level*	0.96	0.95	0.95	0.95	0.38	-	-	-	-	-	-	-	0.72	0.95	0.72

* = COA x M/3 (Refer to Step 6 for COA value)

EDC(BTETC302)

Class: SY-ETC A.Y.2022-23Sem: I

Course Outcomes:

At the end of the course, students will be able to:

1.Apply knowledge of mathematics to solve numerical based on network simplification and it will be used to analyze thesame.
2.Design passive filters and attenuators theoretically and practically. To apply knowledge for design of active filters as well as digital filters and even extend this to advance adaptive filters.
3.Identify issues related to transmission of signals, analyze different RLC networks.
4.Find technology recognition for the benefit of the society.

Mapping of course outcomes with program outcomes/PSO

Course outcome	Program Outcomes												PSO		
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PS O 1	PS O 2	PS O 3
CO1	2	1	1	-									1	1	-
CO2	1	2	2	1									1	1	-
CO3	1	2	2	1											-
CO4	1	1	1	1	1										-
Average PO Mapping(M)	1.25	1.5	1.5	0.75	0.25								0.5	0.5	-

Here in the table, '3' corresponds to a high correlation; '2' corresponds to a medium correlation, and '1' corresponds to a low correlation, between CO and PO

Data sheet for CO attainment calculation

Roll No	NAME	UT-I		UT-II		ASSIGNMENT				ESE
		Q. 1	Q.2	Q. 1	Q.2	AS -1	AS-2	AS -3	AS-4	OUT OF 100
		CO 3	CO4	CO 1	CO2	CO 1	CO2	CO 3	CO4	
2401	Bachate Anjali Ganesh	09	08	08	09	10	09	08	08	81
2402	Jamadarsakshi R	06	06	06	04	07	07	06	08	47
2403	kadamonkarnitin	08	06	04	04	08	08	08	08	45
2404	YalamgondeshivamDigambar	08	04	06	04	08	08	08	08	45
2405	MahadwadAnujBalaji	10	09	06	02	08	08	08	06	67
2406	PalleSwapnilshankar	10	10	10	08	10	09	09	08	61
2407	SavaleDakshani Vijay	05	04	04	02	09	08	08	07	31
2408	Mane PayalParmeshwar	10	08	09	04	09	09	08	06	55
2409	GavateAditi Anil	09	07	06	04	10	09	08	07	64
2410	PatilVaishnavi Sanjay	07	07	05	02	07	07	08	08	59
2411	Kale Jyoti Kailas	10	09	06	03	09	08	08	07	65
2412	BhureShivaniParmeshwar	09	09	09	09	10	09	09	08	63
2413	AlangeShubhangiShripatti	10	10	10	09	10	10	09	08	71
2414	WaycholeVaishnaviNahnath	10	10	09	08	10	09	09	08	61
2415	DongareSushma Sanjay	08	04	10	05	09	09	08	07	54

2416	ShaikhJameerPirpasha	06	06	08	04	08	07	08	08	46
2417	PawarPruthviraj Bharat	09	09	10	05	09	08	09	09	56
2418	Sawantsonali	08	07	08	10	09	08	07	07	48
	NAME	UT-I		UT-II		ASSIGNMENT				ESE
		Q. 1	Q.2	Q. 1	Q.2	AS -1	AS-2	AS -3	AS-4	OUT OF 100
		CO 3	CO4	CO 1	CO2	CO 1	CO2	CO 3	CO4	
2419	YelapureGayatriDigambar	08	08	06	05	08	08	07	07	39
2420	AartiRamnathHadule	10	08	08	05	09	08	08	07	70
2421	SushmaHanmant Raghu	09	07	10	08	09	08	07	08	37
2422	SonpethkarPrachiVimalnath	10	10	06	04	09	09	08	08	74
2424	Kale RohiniBaliram	08	09	06	04	08	08	07	06	49
2425	ShivdareMahadev Vilas	05	05	06	02	08	05	06	07	49
2427	KarpeVivekNagesh	03	03	03	00	01	02	01	00	25
2428	HandeSiddramappaShridhar	10	09	09	07	08	08	09	08	68
2429	ShindeDnyaneshwaribabruwan	05	03	06	04	08	09	08	07	41
2430	GaradSupriyaBansidhar	06	05	08	04	07	07	06	08	50
2431	PanchalAkshayRamchandra	09	06	05	06	08	06	08	07	55
2432	ShaikhMahekmaksud	03	02	05	02	08	07	06	08	33
2434	ChilobaShwetaRajendra	10	10	08	10	10	09	08	09	68
2435	ZirmireVaibhaviMurlidhar	08	04	08	06	08	08	07	07	38

2436	PriyankaRohidasSurvase	06	04	04	05	09	09	08	08	58
2437	AbhijeetBhagwatKhobre	06	06	03	05	05	03	06	00	58
2438	HolambeVaishnavisanjay	10	08	05	08	10	09	09	09	42
2439	Shaikh Saba Chand	09	08	01	06	08	07	08	07	68
2440	Kalwat Nikita Sayara	04	02	05	04	07	07	08	08	37
2441	FulariNitin	04	04	05	06	06	05	05	00	16
Number of students who have scored more than target (P)		CO1	36	CO2	33	CO3	35	CO4	35	28
Percentage of students who have achieved the target		CO1	92.30 %	CO2	84.61 %	CO3	97.22 %	CO4	97.22 %	71.79 %

CO Attainment Calculations

The target (P) may be 50% (first division) for UT and 40% for ESE or as per the requirements of the course and program. Further, the target remains same for direct and indirect assessments

	CO Attainment Calculations						
		Direct assessment					Indirect Assessment Students/Faculty
		Direct Assessment 1 (CIA)				Direct Assessment 2 (CIA)	Course Exit Survey
		CO1	CO2	CO3	CO4	ESE	
	Number of students who have scored more than target (P)	36	33	35	35	28	41
	Percentage of students who have achieved the target = (P/N)*100	92.30	84.61	97.22	97.22	71.79	100
A	**Attainment Level (3 for >70%, 2 for 50 %< P ≤70%, 1 for <50%)**	03	03	03	03	03	03

B	**Attainment based on internal assessment (CIA) = Average of all CO level;**	03	03	
C	**Direct CO Attainment Level (DA) =40%CIA + 60% End-Term (C);**	1.2+1.8=3		
D	**Indirect CO Attainment Level (IA) (based on Exit Survey);**	03		
	80 % of DA	2.4		
	20 % IA	0.6		
E	**CO Attainment Level (COA) = 80 % DA+ 20 % IA;**	3		

PO/PSO attainment calculations

PO Attainment= COA x M/3 (Refer to Step 6 for COA value)

Course outcome	Program Outcomes												PSO		
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PS O1	PS O2	PS O3
Average PO Mapping (M)	1.25	1.5	1.5	0.75	0.25								0.5	0.5	-
PO / PSO Attainment Level*	1.25	1.5	1.5	0.75	0.25								0.5	0.5	-

* = COA x M/3 (Refer to Step 6 for COA value)

Digital Communication (BTETC602)

Class: B.Tech. (ENTC) A.Y.2022-23Sem: III

Course Outcomes:

At the end of the course, students will be able to:

CO1: Analyze the performance of a baseband and pass band digital communication system in terms of error rate and spectral efficiency.

CO2: Perform the time and frequency domain analysis of the signals in a digital communication system

CO3: Select the blocks in a design of digital communication system

CO4: Analyze Performance of spread spectrum communication system.

Mapping of course outcomes with program outcomes/PSO

Course outcome	Program Outcomes												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
CO1	1	1	1	-	-	-	-	-	-	-	-	-	3	0	-
CO2	2	2	1	1	-	-	-	-	-	-	-	-	3	2	-
CO3	2	2	1	-	-	-	-	-	-	-	-	-	3	2	-
CO4	1	1	1	1	1	-	-	-	-	-	-	-	3	1	-
Average PO Mapping(M)	1.5	1.5	1.0	0.5	0.25	-	-	-	-	-	-	-	3	1.25	-

Here in the table, '3' corresponds to a high correlation; '2' corresponds to a medium correlation, and '1' corresponds to a low correlation, between CO and PO

Data sheet for CO attainment calculation

Roll No	NAME	UT-I		UT-II		ASSIGNMENT				ESE
		Q.1	Q.2	Q.1	Q.2	AS-1	AS-2	AS-3	AS-4	OUT OF 100
		CO3	CO4	CO1	CO2	CO1	CO2	CO3	CO4	
4401	Ghodake Sandhya A.	12	7	12	8	9	9	9	9	65
4402	Karad Devanand	8	5	9	6	9	9	9	9	67
4403	Shere Anjali	0	0	0	0	6	6	6	6	46
4405	Dhas prakash	2	3	7	6	7	7	7	7	44
4406	Devkar Rahul P	8	4	8	6	9	9	9	9	50
4407	Bhorkar Tejasvi	12	8	12	8	9	9	9	9	87
4408	Chapte Pallavi	12	7	12	8	9	9	9	9	92
4409	Chendake Rinkal	12	7	12	7	9	9	9	9	84
4410	Dede Ujjwala	6	4	11	7	9	9	8	8	80
4412	Ghogare Prajawal	9	6	11	7	9	9	9	9	85
4414	Kore Anuja Somnath	8	4	12	7	9	9	9	9	86
4415	Kore Rutuja Somnath	12	6	12	8	6	6	6	6	62
4416	Kulkarni Manasi	12	6	12	8	8	8	8	8	83
4417	Mandave Kranti	11	7	11	7	9	9	9	9	84
4418	Pathan Arbaz Sher	8	6	7	4	6	7	6	7	77
4419	Patil Saurabh	10	7	11	6	9	9	9	9	76
4423	Gate Divya	11	7	12	8	9	9	9	9	68
4424	Sutar kiran	8	4	9	6	8	7	6	7	57
Number of students who have scored more than target (P)		CO1	17	CO2	17	CO3	16	CO4	17	24
Percentage of students who have achieved the target		CO1	70.83	CO2	70.83	CO3	66.66	CO4	70.83	100

CO Attainment Calculations

The target (P) may be 60% (first division) or as per the requirements of the course and program. Further, the target remains same for direct and indirect assessments

	CO Attainment Calculations						
		Direct assessment					Indirect Assessment Students/Faculty
		Direct Assessment 1 (CIA)				Direct Assessment 2 (CIA)	Course Exit Survey
		CO1	CO2	CO3	CO4	ESE	
	Number of students who have scored more than target (P)	17	17	16	17	24	24
	Percentage of students who have achieved the target = (P/N)*100	70.83	70.73	66.66	70.83	100	100
A	Attainment Level (3 for >70%, 2 for >60%, 1 for> 50%)	3	3	2	3	3	3
B	Attainment based on internal assessment (CIA) = Average of all CO level;	2.75					
C	Direct CO Attainment Level (DA) =40%CIA + 60% End-Term (C);	2.3					
D	Indirect CO Attainment Level (IA) (based on Exit Survey);	3					
	80 % of DA	1.84					
	20 % IA	0.6					
E	CO Attainment Level (COA) = 80 % DA+ 20 % IA;	2.44					

PO/PSO attainment calculations

PO Attainment= COA x M/3 (Refer to Step 6 for COA value)

Course outcome	Program Outcomes												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Average PO Mapping(M)	1.5	1.5	1.0	0.5	0.25	-	-	-	-	-	-	-	3	1.25	-
PO / PSO Attainment Level*	1.22	1.22	0.81	0.41	0.20	-	-	-	-	-	-	-	2.44	1.02	-

* = COA x M/3 (Refer to Step 6 for COA value)

AWP

Class: TY (ETC) A.Y.2022-23Sem: VI TH

Course Outcomes:

1Formulate the wave equation and solve it for uniform plane wave.

2. Analyze the given wire antenna and its radiation characteristics.

3. Identify the suitable antenna for a given communication system.

At the end of the course, students will be able to:

Mapping of course outcomes with program outcomes/PSO

Course outcome	Program Outcomes												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	1	1	1	3	-	1	-	-	-	-	-	1	3	2
CO2	3	3	3	3	3	-	-	-	-	-	-	-	2	1	3
CO3	3	2	2	3	3	-	-	-	-	-	-	-	3	2	1
Average PO Mapping(M)	3	2	2	2.33	3	-	-	-	-	-	-	-	2	2	2

Here in the table, '3' corresponds to a high correlation; '2' corresponds to a medium correlation, and '1' corresponds to a low correlation, between CO and PO

Data sheet for CO attainment calculation

Roll No	NAME	UT-I	UT-II
		Q.1,2,3,4,5	Q.1,2,3,4,5
		CO1	CO2
1	SHINDE MANOJ YADAV	14	12
2	AWALE AMRUTA PRAKASH	17	20
3	SAKSHI SUNIL CHOBHARKAR	17	19
4	KAKADE UMESH BABASAHEB	18	20
5	GODASE RUTUJA BALASO	17	20
6	SHEWALE PANDURANG GANESHRAO	12	20
7	KALSHETTI AKANKSHA NAGNATH	18	20
8	HULPALLE BHAGYASHRI RAMAKANT	16	18
9	PAWAR MONALI TANAJI	15	20
10	PATHAN SAMIR HAMID	07	13
11	JAMADAR POONAM VIJAYSINGH	19	19
12	ADNAK TEJASWINI VILAS	18	19
13	KULKARNI JANHVI MANOJ	10	14
14	PATIL PRANITA PRABHAKAR	-	08
15	BACHATE RUTUJA KUMUD	12	14
16	MENDHE SHITAL RAJENDRA	08	12
17	BHOSALE ABHAYSINH UTTAM	12	20

18	SHINDE TUSHAR SANTOSH	12		12	
19	CHUTE DINESH SANKARAO	14		18	
20	TAMBE NIKITA ASHOK	12		13	
21	BHANDAVALE POOJA RAM	16		20	
22	GOSAVI TEJAS JITENDRA	00		10	
23	BIRAJDAR SHRIDEVI UDDHAV	15		19	
24	MULE POONAM SHAHAJI	18		20	
25	BHAGWAT PRACHI DNYANESHWAR	16		20	
26	GEDAM RASIKALA BHAGWAN	15		19	
27	MHETRE MAYURI DAYANAND	-		13	
28	SAWANT SONALI SHAM				
Number of students who have scored more than target (P)		CO1	16	CO2	22
Percentage of students who have achieved the target		CO1	59	CO2	81

CO Attainment Calculations

The target (P) may be 60% (first division) or as per the requirements of the course and program. Further, the target remains same for direct and indirect assessments

	CO Attainment Calculations				
		Direct assessment			Indirect Assessment Students/Faculty
		Direct Assessment 1 (CIA)		Direct Assessment 2 (CIA)	Course Exit Survey
		CO1	CO2	ESE	
	Number of students who have scored more than target (P)	16	22	15	15
	Percentage of students who have achieved the target = (P/N)*100	59	81	53	53
A	**Attainment Level (3 for >70%, 2 for 50 %< P ≤70%, 1 for <50%)**	2	3	2	2
B	**Attainment based on internal assessment (CIA) = Average of all CO level;**	2.5			
C	**Direct CO Attainment Level (DA) =40%CIA + 60% End-Term (C);**	2.2			
D	**Indirect CO Attainment Level (IA) (based on Exit Survey);**	2			
	80 % of DA	1.76			
	20 % IA	0.4			
E	**CO Attainment Level (COA) = 80 % DA+ 20 % IA;**	2.16			

PO/PSO attainment calculations

PO Attainment= COA x M/3 (Refer to Step 6 for COA value)

Course outcome	Program Outcomes												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Average PO Mapping(M)	3	2	2	2.33	3	-	-	-	-	-	-	-	2	2	2
PO / PSO Attainment Level*	2.16	1.44	1.44	1.67	2.16	-	-	-	-	-	-	-	1.44	1.44	1.44

* = COA x M/3 (Refer to Step 6 for COA value)

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Embedded system Design (BTETPE703A)

Class: B.tech(ETC) A.Y.2022-23 Sem: VII

Course Outcomes:

CO1. Suggest design approach using advanced controllers to real-life situations.

CO2. Design interfacing of the systems with other data handling / processing systems.

CO3. Appreciate engineering constraints like energy dissipation, data exchange speeds etc.

CO4. Get to know the hardware – software co design issues and testing methodology for embedded system.

Mapping of course outcomes with program outcomes/PSO

Course outcome	Program Outcomes												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
CO1	1	1	-	-	-	-							2	3	-
CO2	1	1	2	-	-	-							1	2	-
CO3	1	1	-	2	-	-							1	2	-
CO4	1	1	1	-	2								1	2	-
Average PO Mapping(M)	1.0	1.0	0.75	0.5	0.5								1.25	2.25	-

Here in the table, '3' corresponds to a high correlation; '2' corresponds to a medium correlation, and '1' corresponds to a low correlation, between CO and PO

Data sheet for CO attainment calculation

Roll No	NAME	UT-I		UT-II		ASSIGNMENT				ESE
		Q.1	Q.2	Q.1	Q.2	AS-1	AS-2	AS-3	AS-4	OUT OF 100
		CO 3	CO4	CO1	CO2	CO1	CO2	CO3	CO4	
4401	GhodakeSandhya A.	14	06	08	08	08	08	07	08	65
4402	KaradDevanand	06	04	08	07	06	06	07	06	51
4403	Shere Anjali	00	00	00	00	6	6	6	6	46
4405	Dhasprakash	7	0	6	7	6	6	6	6	39
4406	Devkar Rahul P	3	3	7	7	7	7	6	6	51
4407	BhorkarTejasvi	14	6	9	8	9	9	9	9	71
4408	ChaptePallavi	13	6	10	9	8	8	8	7	76
4409	ChendakeRinkal	9	6	10	10	9	9	8	9	76
4410	DedeUjjwala	14	6	10	9	9	9	9	8	67
4412	GhogarePrajawal	14	6	9	10	9	9	9	9	74
4414	KoreAnujaSomnath	11	5	9	9	8	8	7	6	63
4415	KoreRutujaSomnath	13	4	9	5	6	6	6	7	45
4416	KulkarniManasi	14	6	10	8	9	9	9	9	71
4417	MandaveKranti	14	5	10	9	9	9	9	8	76
4418	PathanArbazSher	12	6	7	8	9	9	9	7	68
4419	PatilSaurabh	14	6	9	8	8	8	8	7	70
4423	Gate Divya	13	6	10	8	9	9	9	9	72

4424	Sutarkiran	7	6	8	9	6	6	6	6	59
Number of students who have scored more than target (P)		CO 1	17	CO2	17	CO3	16	CO4	16	23
Percentage of students who have achieved the target		CO 1	70.83	CO2	70.83	CO3	66.66	CO4	66.66	95.83333

CO Attainment Calculations

The target (P) may be 50% (first division) for UT and 40% for ESE or as per the requirements of the course and program. Further, the target remains same for direct and indirect assessments

	CO Attainment Calculations						
		Direct assessment					Indirect Assessment Students/Faculty
		Direct Assessment 1 (CIA)				Direct Assessment 2 (CIA)	Course Exit Survey
		CO1	CO2	CO3	CO4	ESE	
	Number of students who have scored more than target (P)	17	17	16	16	23	23
	Percentage of students who have achieved the target = (P/N)*100	70.83	70.83	66.66	66.66	95.83	95.83
A	**Attainment Level (3 for >70%, 2 for 50 %< P ≤70%, 1 for <50%)**	3	3	2	2	3	3
B	**Attainment based on internal assessment (CIA) = Average of all CO level;**	2.5					
C	**Direct CO Attainment Level (DA) =40%CIA + 60% End-Term (C);**	2.8					
D	**Indirect CO Attainment Level (IA) (based on Exit Survey);**	3					
	80 % of DA	2.24					
	20 % IA	0.6					
E	**CO Attainment Level (COA) = 80 % DA+ 20 % IA;**	2.84					

PO/PSO attainment calculations

PO Attainment= COA x M/3 (Refer to Step 6 for COA value)

Course outcome	Program Outcomes												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Average PO Mapping(M)	1.0	1.0	0.75	0.5	0.5	-	-	-	-	-	-	-	1.25	2.25	-
PO / PSO Attainment Level*	0.95	0.95	0.71	0.47	0.47	-	-	-	-	-	-	-	1.18	2.13	-

* = COA x M/3 (Refer to Step 6 for COA value)

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Economics and Management

(BTHM505A)

Class: TY(CSE) A.Y.2022-23 Sem: V

Course Outcomes:

At the end of the course, students will be able to:

CO1:Apply Economics and management strategies and principles to prepare effective preparation for domestic and international business

CO2: Identify ethical, legal, cultural, and global issues affecting Economics and management

CO3: Participate in team activities that lead to the development of collaborative work skills.

CO4: Select appropriate organizational formats and channels used in developing and presenting the business.

Mapping of course outcomes with program outcomes/PSO

Course outcome	Program Outcomes										PSO	
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO 1	PSO 2
CO1	1	-	1	1	2	-	-	2	-	-	1	1
CO2	1	1	-	2	-	-	-	1	2	-	1	-
CO3	-	-	-	2	-	-	-	1	-	-	1	-
CO4	-	-	1	1	2	-	-	-	1	-	1	1
Average PO Mapping(M)	0.5	0.25	0.5	1.5	1	-	-	1	0.75	-	1	0.5

Here in the table, '3' corresponds to a high correlation; '2' corresponds to a medium correlation, and '1' corresponds to a low correlation, between CO and PO

Data sheet for CO attainment calculation

Roll No	NAME	UT-I		UT-II		ASSIGNMENT			ESE
		Q.1	Q.2	Q.1	Q.2	AS-1	AS-2	AS-3	OUT OF 100
		CO1	CO2	CO2	CO3	CO1	CO2	CO3	
3501	JADHAV AJAY RAJEBHAU	5	5	7	8	7	7	7	53
3502	AKSHATA SANTOSH NAKATE	5	4	4	5	9	9	9	57
3503	MISAL AKSHAY DAJIBA	0	0	0	0	4	4	4	15
3504	BHAIRAVI MADHUKAR FULSUNDAR	9	9	5	5	9	9	9	70
3505	KUMBHAR DIGAMBAR CHANDRAKANT	5	4	4	4	4	4	4	41
3506	DIPALI GUNVANTRAO KULKARNI	8	7	8	6	9	9	9	50
3507	GANESH VIKAS GHOGARE	1	1	1	2	4	4	4	23
3508	JAMDADE MANGESH RAMANAND	2	2	7	8	5	5	5	32
3509	KASTURE MANMATH RAJENDRA	3	4	8	8	6	6	6	36
3510	MANOJ SATISH DEVALE	3	4	5	5	8	8	8	27
3511	NITIRAJ DAYANAND ROKADE	0	0	6	5	9	9	9	42
3512	JADHAV ONKAR NETAJI	6	6	8	8	4	4	4	53
3513	PRADUM SATISH SALUNKE	10	9	9	9	10	10	10	73

3514	PRANAV PRASHANT JAWALKAR	7	7	8	7	4	4	4	53
3515	JADHAV PRASAD VIJAY	6	6	7	7	8	8	8	28
3516	PRATHAM SANJAY SAJAN	0	0	4	3	4	4	4	31
3517	SAKSHI RAMESH KADAM	0	0	1	0	4	4	4	31
3518	SAMARTH SATISH KHURUD	2	2	2	2	4	4	4	39
3519	SARADE SHRADHA SAYAJI	3	3	1	1	8	8	8	46
3520	SHRUTI MANOHAR BANDGAR	9	8	4	4	8	8	8	33
3521	NEPTE SIDDHARTH SATISH	3	2	5	6	10	10	10	37
3522	SRUSHTI SANTOSH BHOSALE	7	8	4	4	9	9	9	53
3523	JADHAV VAIDHAHI PARMESHWAR	5	5	3	4	8	8	8	26
3524	VARSHA VILAS ZAGADE	8	7	8	7	6	6	6	66
3525	VISHVAKARMA ARUN WANKHEDE	5	4	2	2	4	4	4	55
3526	YASHRAJ MANOJ DESHMUKH	7	6	3	3	4	4	4	49
3527	MULIMANI MANJUNATH SHRIKANTH	7	7	6	7	8	8	8	60
3528	MADDEWAD SHRADDHA NIVRATTI	6	6	6	7	10	10	10	71
3529	HATKAR PRITI SANJAY	0	0	5	6	4	4	4	0
3530	PANDHARE DHARMARAJ KRISHNA	7	7	7	7	7	7	7	57
3531	BONDGE VAIBHAV LAXMAN	6	7	4	5	8	8	8	63

3532	ZADOKAR KARTIK AVINASH	8	8	0	0	8	8	8	54
3533	WAIRAGADE DEVNATH GULAB	7	6	8	8	10	10	10	20
3534	JOSHI DIVYA PRALHAD	7	8	9	9	9	9	9	70
3535	BHATLAVANDE BHAGYASHREE BALAJI	8	8	8	10	10	10	10	76
3536	KASBE DINESH SIDDHESHWAR	0	0	7	8	8	8	8	0
3537	SALUNKE SHRUTI SANJAY	0	0	2	1	7	7	7	59
3538	KUNAL AJAYSING GUJARE	0	0	7	6	8	8	8	0
3539	DOMBALE YOJANA BHAGWAN	6	6	0	0	10	10	10	53
3540	SHINDE SUNIT NAGSEN	0	0	7	8	10	10	10	25
3541	MORE PRAGATI PRASHANT	5	5	7	7	10	10	10	55
3542	PAWAR AJIT SHANKAR	0	0	8	9	10	10	10	0
3543	KONE SUMIT RAVISHANKAR	10	9	9	9	8	8	8	68
3544	HOLKAR SANGHARSH SHARAD	7	7	7	7	10	10	10	33
3545	DESHMUKH PRATIKSHA HANUMANT	9	9	7	8	10	10	10	72
3546	DHARANE VAISHNAVI SHRISHAIL	10	10	8	8	8	8	8	65
3547	SHETKAR VARSHA NAGNATH	6	6	7	8	8	8	8	52
3548	JADHAV POOJA BALIRAM	7	7	9	9	10	10	10	64
3549	CHIMANDARE SHRUTI SHESHERAO	9	10	8	8	10	10	10	70

3550	KADAV POOJA YAMAJI	8	8	8	9	10	10	10	71
3551	CHAVAN VIJAYALAXMI PARSHURAM	7	7	7	8	10	10	10	68
3552	GONDE SIDDHIKA VILAS	10	10	0	0	4	4	4	60
3553	MATACHE VAISHNAVI RAJESHWAR	5	4	7	7	10	10	10	35
3554	VANGKAR SUSHAMA RAJABHAU	7	7	9	10	10	10	10	50
3555	DEVKAR SWAPNALI LIMBRAJ	9	8	8	8	10	10	10	72
3556	DINKAR VAIDYA VARUN	7	6	5	5	10	10	10	23
3557	YEDKE PUNAM RAJENDRA	7	6	8	8	10	10	10	56
3558	YEWATE ANJALI BABURAO	10	10	8	7	10	10	10	68
3559	DUDHABHATE SAROJA BALAJI	9	9	7	6	7	7	7	65
3560	AKANKSHA ANNA GAIKWAD	8	8	9	9	10	10	10	64
3561	TARE SHAMABHAVI GANPATRAO	9	8	10	10	8	8	8	53
3562	GADEKAR PRADNYA BALASAHEB	9	9	10	9	10	10	10	32
3563	SHINDE ANUSHREE KUNDAN	6	6	7	8	9	9	9	58
3564	MORE ROHINI TANAJI	10	9	7	6	9	9	9	69
3565	MANE RAJLAXMI PRAMOD	10	10	7	7	9	9	9	76
3566	SHINDE ASHLESHA ANIL	10	10	7	6	7	7	7	75
3567	SARANG NISHITA RAJABHAU	5	5	9	10	10	10	10	65

3568	MASHALE ASMA BABU	6	5	9	9	9	9	9	52
3569	AIWALE ANJALI GORAKH	6	6	10	9	10	10	10	63
3570	GAVALI PALLAVI LAXMAN	0	0	7	8	4	4	4	0
3571	KONDUR LAVANYA CHANDRAPRAKASH	6	6	7	7	8	8	8	51
3572	MALI PRATIKSHA GANGADHAR	10	10	9	8	9	9	9	69
3573	PATIL SANYOGEETA MADHAVRAO	10	10	9	9	10	10	10	75
3574	SALUNKE APEKSHA NANASAHEB	10	10	9	10	4	4	4	69
3575	WABLE DNYANESHWAR BHARAT	6	6	7	8	8	8	8	64
3576	PATEL MAHEK ANWAR	10	9	7	7	8	8	8	69
Number of students who have scored more than target (P)		CO1	61	CO2	59	CO3	63		53
Percentage of students who have achieved the target		CO1	80.26	CO2	77.63	CO3	82.89		69.73

CO Attainment Calculations

The target (P) may be 50% (first division) for UT and 40% for ESE or as per the requirements of the course and program. Further, the target remains same for direct and indirect assessments

	CO Attainment Calculations					
		Direct assessment				Indirect Assessment Students/Faculty
		Direct Assessment 1 (CIA)			Direct Assessment 2 (CIA)	Course Exit Survey
		CO1	CO2	CO3	ESE	
	Number of students who have scored more than target (P)	61	59	63	53	63
	Percentage of students who have achieved the target = (P/N)*100	80.26	77.63	82.89	69.73	100
A	**Attainment Level (3 for >70%, 2 for 50 %< P ≤70%, 1 for <50%)**	3	3	3	2	3
B	**Attainment based on internal assessment (CIA) = Average of all CO level;**	2.75				
C	**Direct CO Attainment Level (DA) =40%CIA + 60% End-Term (C);**	2.3				
D	**Indirect CO Attainment Level (IA) (based on Exit Survey);**	3				
	80 % of DA	1.84				
	20 % IA	0.6				
E	**CO Attainment Level (COA) = 80 % DA+ 20 % IA;**	2.44				

PO/PSO attainment calculations

PO Attainment= COA x M/3 (Refer to Step 6 for COA value)

Course outcome	Program Outcomes										PSO	
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
Average PO Mapping(M)	0.5	0.25	0.5	1.5	1	-	-	1	0.75	-	1	0.5
PO / PSO Attainment Level*												

* = COA x M/3 (Refer to Step 6 for COA value)