8.4.1 ASSESSMENT TOOLS TO BE IMPROVED

I. Improved Assessment Tools

1. Assignments

ATRIA INSTITUTE OF TECHNOLOGY
Anandanagar, Bengaluru – 560024
Department of Basic Science Engineering & Humanities

Subject code: BCHEE102 **Sem: I**
Subject: Applied Chemistry for ECE Stream

Assignment -2

Module - 3

CO3: Solve the problems in chemistry that are pertinent in engineering applications

Q. No.	Questions	RBT Level	COs
1.	What is metallic corrosion? Explain electrochemical theory of corrosion taking iron as an example.	L2	CO3
2.	Explain sacrificial anode method for corrosion control	L2	CO3
3.	What is CPR? A thick brass sheet of area 400 inch² is exposed to moist air. After 2 years of period, it was found to experience a weight loss of 375 g due to corrosion. If the density of brass is 8.73 g/cm³, calculate CPR in **mpy** and **mmpy**.	L3	CO3
4.	A steel plate having the area of 100 inch² is exposed to moist air in a sugar industry. After a period of one year, it was found that the materials had lost 485 g due to corrosion. Given, density of steel = 7.9 g/cm³. Calculate the (a) CPR in **mpy** (b) CPR in **mm/year**	L3	CO3
5.	Explain the extraction process of Gold and Copper from e-waste.	L2	CO3

ATRIA INSTITUTE OF TECHNOLOGY

Anandanagar, Bengaluru – 560024

Department of Basic Science Engineering & Humanities

Subject code: BPHYE202
Subject: Applied Physics for EEE Stream

Sem: II
Due date: 18-07-2023

Assignment No.2

Module 3: Laser and Optical Fibers

CO1: Describe the fundamental principles of the Quantum Mechanics and the essentials of Photonics.

No.	Questions	RBT Level	COs
1.	Discuss a short note on a) Induced absorption b) Spontaneous emission and c) Stimulated emission	L2	CO1
2.	Derive an expression for energy density using Einstein's A and B Coefficients and hence draw infer on the relation $B_{12}=B_{21}$.	L3	CO1
3.	Outline the requisites of a laser system.	L2	CO1
4.	Discuss Population inversion and Metastable state with a neat diagram.	L2	CO1
6.	Explain the principle, construction and working of Carbon dioxide laser.	L2	CO1
7.	Explain the vibrational energy levels of a carbon dioxide molecule.	L2	CO1
8.	A pulsed laser emits photons of wavelength 780 nm with 20 mW average power per pulse. Calculate the number of photons contained in each pulse if the pulse duration is 10 ns.	L3	CO1
9.	The ratio of population of two energy levels is 1.059×10^{-30}. Find the wavelength of light emitted by spontaneous emissions at 330 K.	L3	CO1
10.	What is numerical aperture? Derive an expression for numerical aperture in an optical fiber.	L2	CO1
11.	Explain different types of optical fibers with neat diagram.	L2	CO1
12.	Explain three different types of attenuation mechanism.	L2	CO1
13.	Elaborate point to point communication system of LAN using optical fibers.	L4	CO1
14.	Compare the acceptance angle of an optical fiber placed in air and water given the RI of water 1.33 and the RI of core and clad 1.5 and 1.45 respectively.	L4	CO1
15.	Calculate the attenuation in an optical fiber of length 500 m, when a light signal of power 100 mW emerges out of the fiber with a power 90 mW.	L3	CO1

Assignments are based on tasks or projects designed to evaluate problem-solving skills, research, and the application of concepts in real-world scenarios.

ASSIGNMENT I

SUBJECT: PROFESSIONAL WRITING SKILLS IN ENGLISH	SUBJECT CODE: BPWSK206
CO: 2	RBT Level: 3
TOTAL MARKS: 10	MODE OF SUBMISSION: HARD COPY

MODULE II - NATURE AND STYLE OF SENSIBLE WRITING

INSTRUCTIONS:

1) This assignment will be based on your reflection on a movie you have watched. You are expected to identify the key takeaways from the movie and answer the questions below.
2) The movie may belong to any genre of your choice.
3) The assignment must be your original work and plagiarism of any kind will result in the reduction of marks.
4) Similar assignments will not be accepted or considered.
5) Late submissions will not be entertained.

ANSWER THE FOLLOWING QUESTION:

1) Provide specific details of the movie you have chosen. a) Title of the movie b) Year of Release c) Names of the Director, Artists, etc. (L1-Remember)
2) A summary of the movie. (150 words only) (L2-Understand)
3) Reason for choosing the movie. (100 words only) (L2-Understand)
4) a) Explain your views on how a specific scene/scenes from the movie you watched impacted your life, by quoting suitable situations/instances. (400 words only) (L2-Understand)

   b) With your understanding of the concept 'Principles of Drafting a Paragraph', locate the following points in your assignment by underlining them. a) Topic Sentence b) Supporting Sentence c) Closing Sentence (L1-Remember)

ATRIA INSTITUTE OF TECHNOLOGY

Anandanagar, Bengaluru – 560024

Department of Basic Science Engineering & Humanities

Subject code: BMATS101 Sem: I

Subject: Applied Mathematics for CSE Stream Due date: 5-04-2024

Assignment - 1

Module 2: Differential Calculus -2

CO2: Learn the notation of partial differentiation to calculate rate of change of multivariate functions

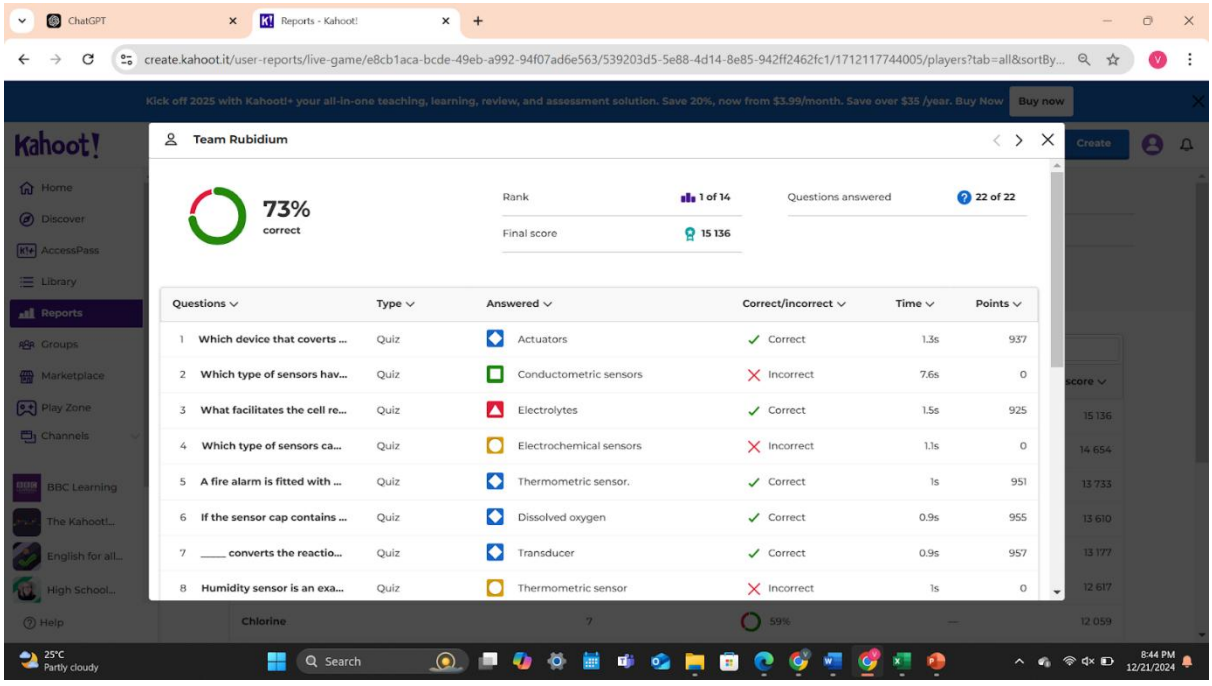
Q. No.	Questions	RBT Level	COs
1.	Expand log x in powers of $(x-1)$ and hence evaluate log 1.1 correct to 4 decimal places.	L3	CO2
2.	Expand $tan\ x$ in a power series about the point $x = \pi/4$ up to the term containing $(x-\pi)3$. Hence find an approximate value of tan 46 degree.	L3	CO2
3.	Expand $\tan^{-1} x$ in powers of $(x-1)$ up to four terms.	L3	CO2
4.	Find the Taylor's series expansion for log $cos\ x$ about the point π up to the fourth degree terms.	L3	CO2
5.	Expand $\sqrt{1 + sin\ x}$ using Taylor's series.	L3	CO2

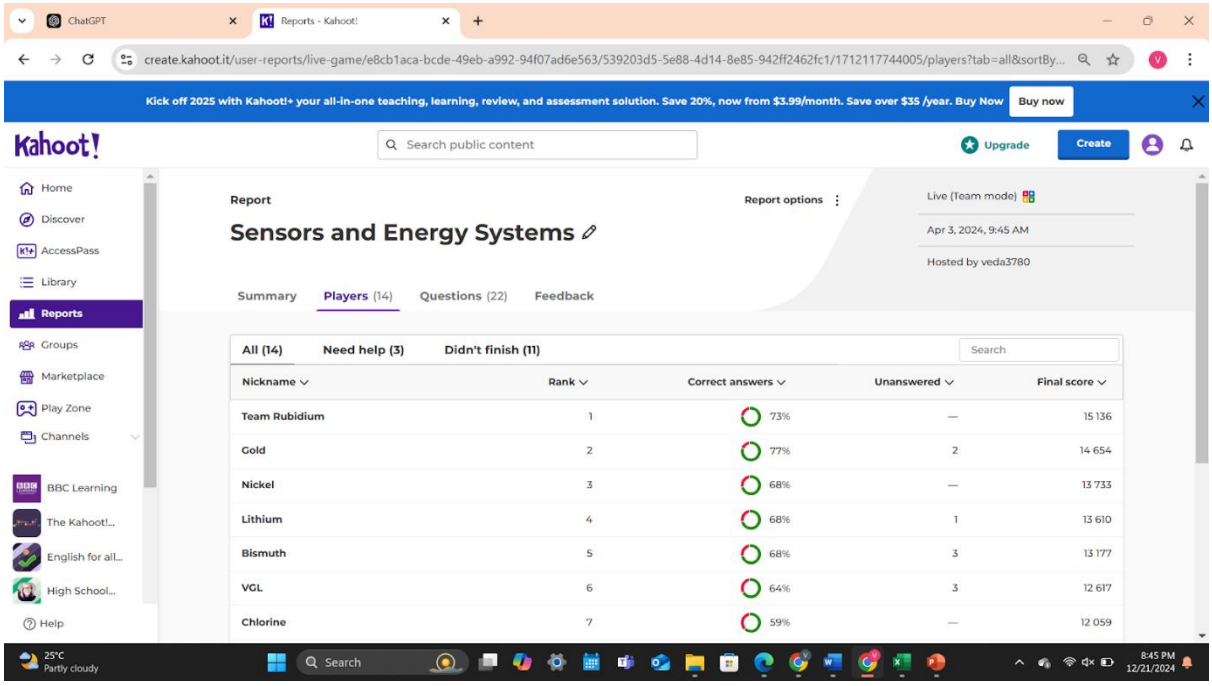
2. Quizzes and Tests

Quiz and test conducted through the LMS platform and also in Kahoot.

Kahoot! Enhances collaboration, knowledge sharing, and critical thinking while making the learning process enjoyable

a. Course name: Engineering Chemistry (21CHE12/22)





quiklrn

Dashboard / My courses / course_13327 / General / Quiz 1

Chemistry for CSE Stream-BCHES202

Quiz 1

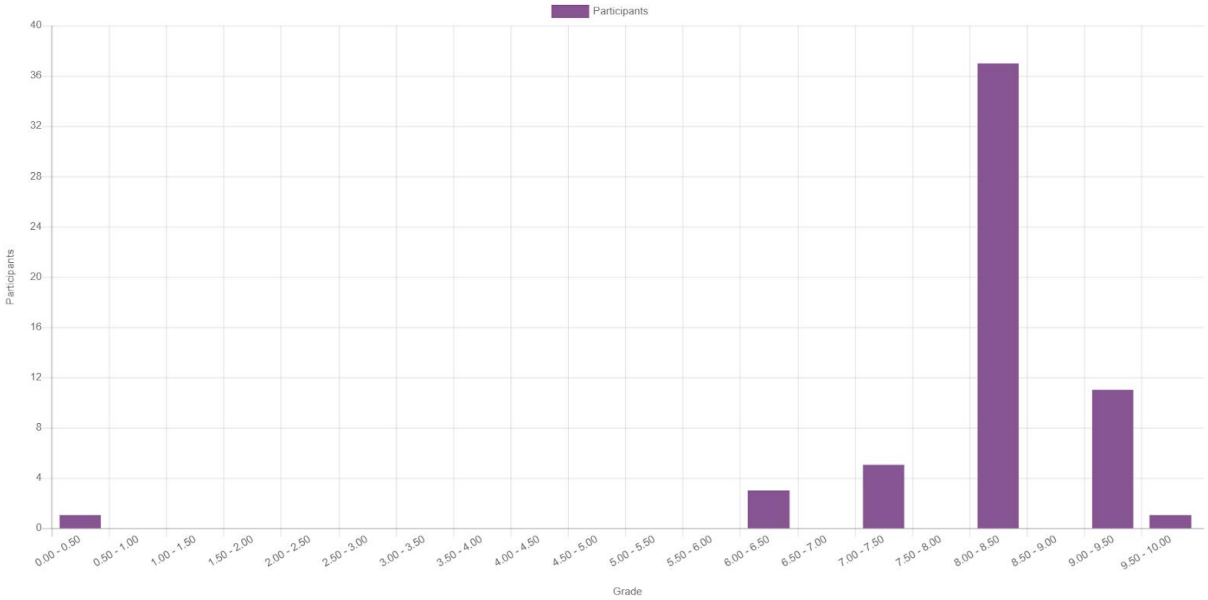
Answer all the questions

Attempts allowed: 1

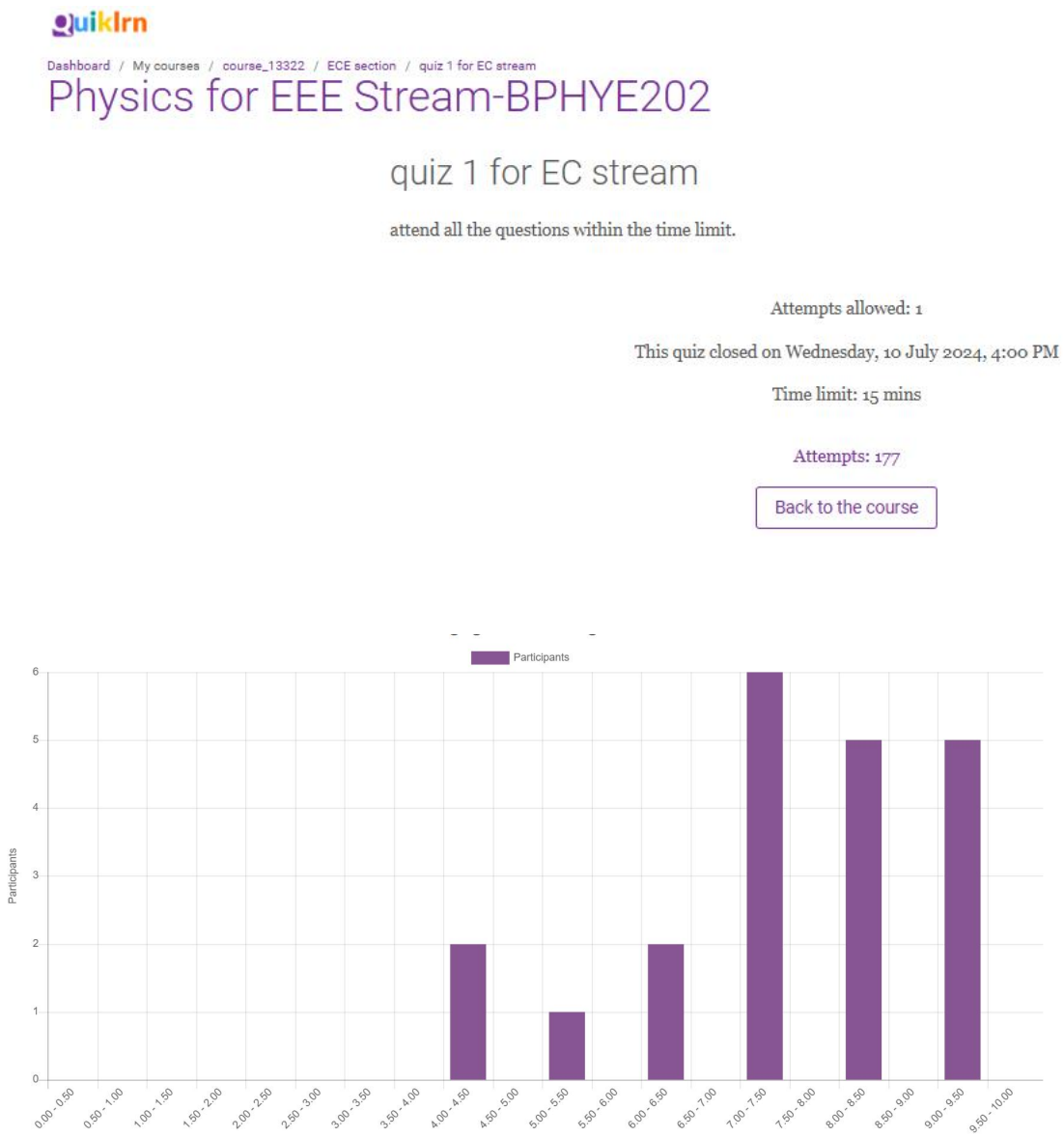
This quiz opened at Sunday, 23 June 2024, 10:00 AM

Time limit: 20 mins

Attempts: 58



b. **Course name: Physics for EEE Stream (BPHYE202)**



3. Project Based Learning

a. Course Name: Communicative English I (21EGH18)

ATRIA INSTITUTE OF TECHNOLOGY
ANANDNAGAR, BANGALORE

Department of Basic Science Engineering & Humanities

PROJECT-BASED LEARNING

As a part of Project Based Learning, students of the I section participated in an inter-class paper craft exhibition organized by Prof. Jeslin G. The main aim of this exhibition was to motivate students to work as a team and to identify the differences between working as a team and as an individual. Since the students were taught the importance of interpersonal communication in their *Professional Writing Skills in English* subject, they could understand the nuances of working effectively and efficiently as a team. This activity also contributed to mapping the activity to CO5, **"To learn about the techniques of information transfer through the presentation in different levels"**.

Students were divided into teams of 7-8 and were asked to nominate a team leader to lead them. The leads were given the necessary instructions on the activity and were given complete authority to lead and engage the team. Each team was given a few sets of newspaper and was asked to create any number of crafts and reusable work from it. A time limit of 90 minutes was fixed and was asked to complete the work on time. The leader was also asked to identify a reporter, who would report the activities of the team and the report would further be submitted to the co-ordinator by the next day. Each team worked enthusiastically, and their ideas were well incorporated into the activity.

Towards the end, each team was allowed to share their experience of working as a team and to explain the outcomes. The final event was judged by Dr. Nalinakshi N, Prof. & Head of the Department of Basic Science Engineering and Humanities, who exclaimed that each team had incorporated a lot of innovative ideas to bring out the best. And the results were quite impressive and interesting. The winner of the competition was Team 02, who had dressed up one of their team members as Mother Earth and had given a beautiful description of the same. This activity is an indicator to show that, given apportioned time and space, students would be involved in it and would bring out their best for the betterment of the community.



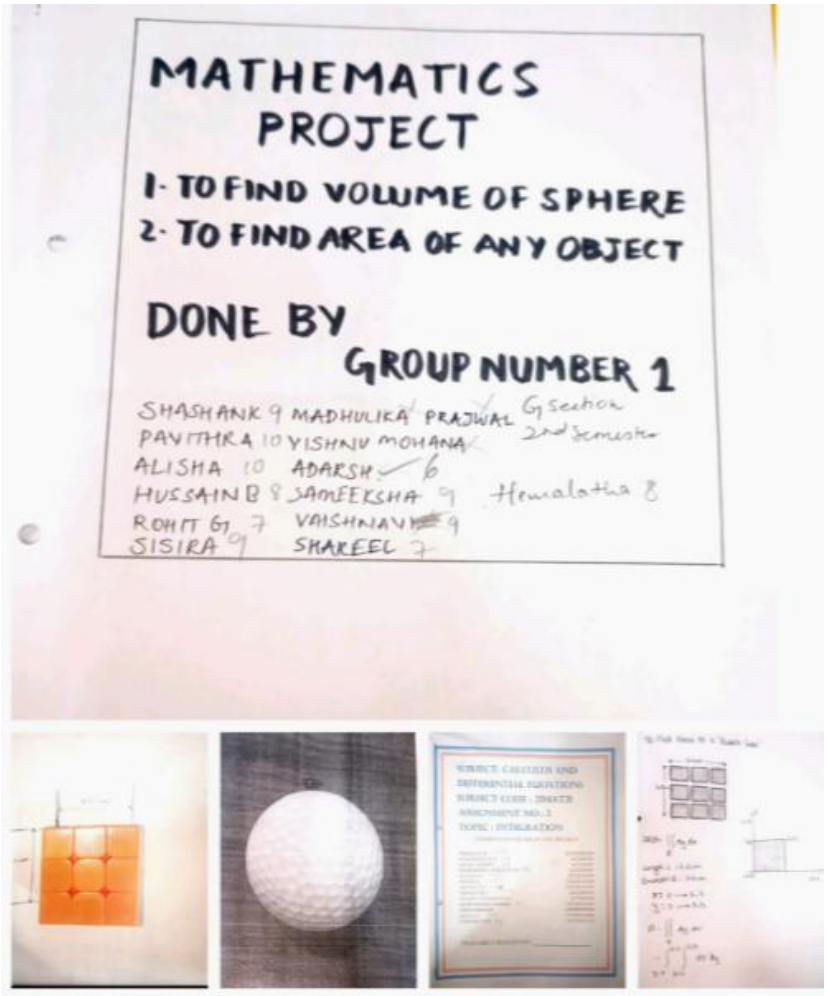

Note: This project was intended to bring out effective communication skills and improve team work abilities, which has been satisfied.

Rubrics for Project Based Learning

Criteria	Excellent (4)	Proficient (3)	Basic (2)	Needs Improvement (1)
Team Interaction	Actively participates in team discussions, listens to others, and integrates feedback.	Participates well in discussions and considers others' ideas.	Inconsistent participation or limited interaction with team members.	Rarely participates or disrupts team dynamics.
Conflict Resolution	Handles disagreements respectfully and helps mediate conflicts.	Resolves conflicts calmly and cooperatively.	Occasionally struggles to resolve conflicts, may avoid	Does not effectively handle conflicts

4. Case Studies

Mathematics project to find the volume and area of object



Mathematics Project Rubric (20 Marks)

Criteria	Marks	Excellent (90-100%)	Good (70-89%)	Satisfactory (60-69%)	Needs Improvement (40-59%)	Inadequate (0-39%)
Problem Solving	10	Demonstrates a complete understanding of the mathematical concepts; all calculations are accurate, and solutions are comprehensive.	Shows good understanding; minor errors in calculations or solutions.	Partial understanding with some errors; solutions are incomplete but demonstrate effort.	Limited understanding; multiple errors, incomplete solutions, and lack of clarity.	No understanding; solutions are incorrect or missing.
Report Submission	5	Report is well-organized, neat, and includes all required components such as introduction, methodology, calculations, and conclusion.	Report is well-presented but lacks one or two required components or minor issues in organization.	Report is satisfactory but incomplete or contains multiple formatting and clarity issues.	Report is poorly organized, lacks clarity, and is incomplete.	Report is missing or extremely inadequate.
Viva	5	Answers all questions confidently, demonstrates a thorough understanding of the concepts and project work.	Answers most questions confidently with a good understanding of the project.	Answers are partially correct, with gaps in understanding.	Struggles to answer questions; limited understanding of the project.	Unable to answer questions; no understanding demonstrated.

5. Short Presentations

a. Engineering Chemistry (21CHE12/22)

CHEMISTRY REPORT 2023-24

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

JNANSANGAMA, BELAGAVI-590018

A Seminar Report on

"E-WASTE MANAGEMENT"

Submitted in partial fulfillment of the requirement for the **Engineering Chemistry** Subject of **BSE/H Department**

Submitted by

Harmain Fathima Khan	**ECEA34**
Husna Firdos	**ECEA36**
Harshitha V.	**ECEA35**
Gouthami M.	**ECEA32**
Hari Kishan V.	**ECEA33**
Dileep K. N.	**ECEA31**

Carried Out At

ATRIA INSTITUTE OF TECHNOLOGY

Guide

Prof. Prakruthi

ATRIA INSTITUTE OF TECHNOLOGY

ATRIA INSTITUTE OF TECHNOLOGY

Department of Basic Science Engineering & Humanities

Anandanagar, Bangalore-560024

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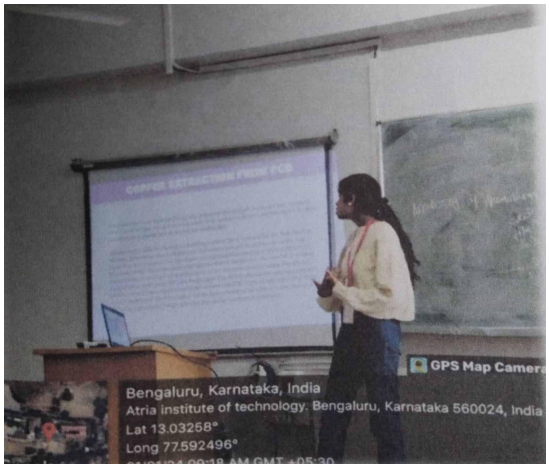
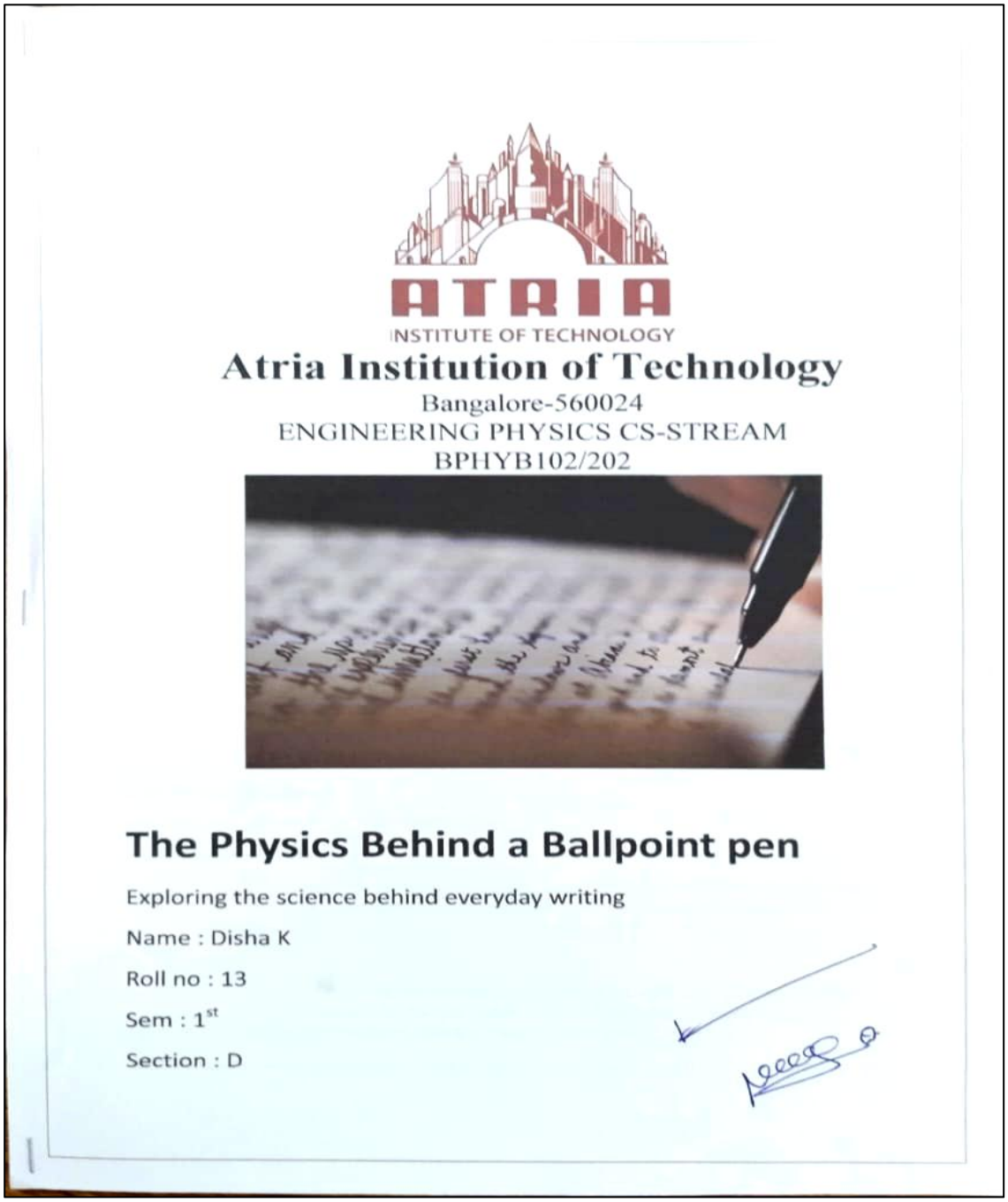
Dept. ECE



Rubrics for seminar presentation :

Criteria	Marks	Description
Content Organization/ presentation	2	Logical structure, clarity in flow, and well-defined introduction, body, and conclusion.
Understanding of topic	1	Depth of knowledge, accuracy, and ability to explain the topic.
Use of Visual Aids	1	Effectiveness and quality of visuals (slides, charts, etc.) in supporting the presentation.
Communication skills	2	Ability to communicate effectively.
Interaction and Q&A	1	Ability to engage the audience and accurately respond to questions.
Time management	1	Completion of the presentation within the allotted time without rushing or exceeding limits.
Report submission	2	Submitting the report in the given format.
Total marks (Conducted)	**10 M**	
Scaled down to	**5 M**	

b. Engineering Physics (21PHY12/22)



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INSTITUTE OF TECHNOLOGY

Atria Institution of Technology

Bangalore-560024

ENGINEERING PHYSICS CS-STREAM

BPHYB102/202

The Physics Behind a Ballpoint pen

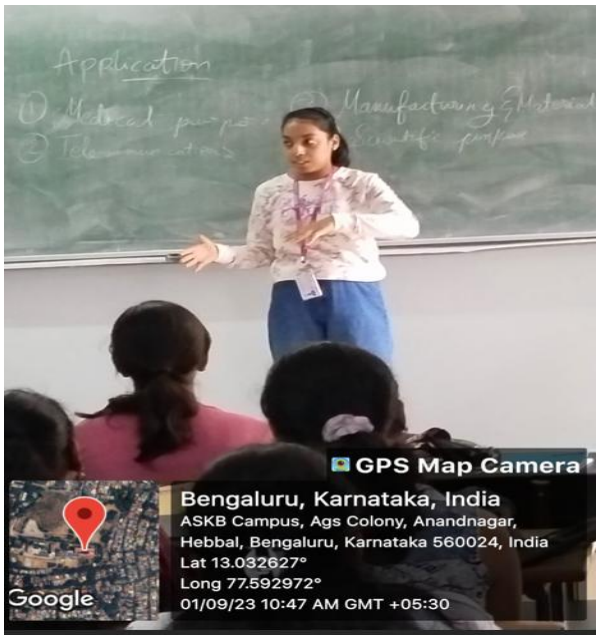
Exploring the science behind everyday writing

Name : Disha K

Roll no : 13

Sem : 1st

Section : D



Subject: Engineering Physics for CSE / ECE / CV/ ME stream

Rubrics for seminar presentation:

Sl no.	Criteria	Marks	Description
1	Content Accuracy/ presentation	2	Contant should be accurate, clarity in flow, and well-defined introduction, and conclusion.
2	Clarity of Explanation	1	Depth of knowledge, accuracy, and ability to explain the topic.
3	Use of Visual Aids	1	Quality of visuals (slides, charts, etc.) in supporting the presentation and Effectiveness.
4	Communication skills	1	Ability to communicate effectively.
5	Q&A and interaction	2	Ability to engage the audience and accurately respond to questions.
6	Time management	1	Completion of the presentation within the allotted time without rushing or exceeding limits.
7	Report submission	2	Submitting the report in the given format within given time.
8	**Total marks (Conducted)**	**10 M**	
9	**Scaled down to**	**5 M**	

II. Assessment Process

1. Remedial Classes for Slow Learners

ATRIA INSTITUTE OF TECHNOLOGY
Anandanagar, Bengaluru – 560 024
Approved by AICTE, Affiliated to VTU, Belagavi.
Accredited by NAAC A++ & NBA.

REMEDIAL TEACHING FOR SLOW LEARNERS 2023-24
Course Name: Engineering Chemistry

Faculty Name: Prakruthi P R **Section:** ECE-A **Semester:** I

Sl. No.	USN	Student Name	IIA (40 Marks)
1	1AT23EC009	Abhishek M	4
2	1AT23EC059	Deepika	5
3	1AT23EC060	Dhanush D	5
4	1AT23EC037	Bharath S	6
5	1AT23EC064	Dileep K N	6
6	1AT23EC069	Harmain Fathima	6
7	1AT23EC049	CHARAN M S	8
8	1AT23EC109	Muthukrishnan S	8
9	1AT23EC107	Muhammad Ali	9
10	1AT23EC054	Chinna V	10
11	1AT23EC013	Aditi N	11
12	1AT23EC115	Navya K M	11
13	1AT23EC117	Nishanth J	13
14	1AT23EC130	Raghavendra S Naik	14

REMEDIAL CLASS ATTENDANCE

Sl. No.	USN	Student Name	Section	Attendance 1	2	3	4	5	6
1	1AT23EC009	Abhishek M	ECE-A	P	P	A	P	P	A
2	1AT23EC059	Deepika	ECE-A	P	P	P	P	P	P
3	1AT23EC060	Dhanush D	ECE-A	P	A	P	P	A	P
4	1AT23EC037	Bharath S	ECE-A	P	A	P	P	P	A
5	1AT23EC064	Dileep K N	ECE-A	P	P	P	P	P	P
6	1AT23EC069	Harmain Fathima Khan	ECE-A	P	P	P	P	P	P
7	1AT23EC049	CHARAN M S	ECE-A	P	P	P	A	P	P
8	1AT23EC109	Muthukrishnan S	ECE-A	P	P	P	P	P	P
9	1AT23EC107	Muhammad Ali Shihab	ECE-A	P	P	A	P	A	A
10	1AT23EC054	Chinna V	ECE-A	P	P	P	P	P	P
11	1AT23EC013	Aditi N	ECE-A	P	A	P	A	P	P
12	1AT23EC115	Navya K M	ECE-A	P	A	P	P	P	P
13	1AT23EC117	Nishanth J	ECE-A	P	A	P	P	P	P
14	1AT23EC130	Raghavendra S Naik	ECE-A	P	P	A	P	P	P

HOD

Faculty Name
(Prakruthi P R)

ATRIA INSTITUTE OF TECHNOLOGY, BENGALURU
Department of Basic Sciences Engineeering & Humanities

REMEDIAL CLASS TIME TABLE - 2023 - 24

CHEMISTRY CYCLE REMEDIAL CLASS TIME TABLE FOR SLOW LEARNERS
ACADEMIC YEAR 2023 - 24 (I SEM)

Semester : I		Section : ECE	Classroom :
Day		3.30 - 4.30 PM	4.30 - 5.30 PM
Period & Time	MON	CHE	MATHS
	TUE	IEE	CAED
	WED	MATHS	IPP
	THU	IPP	CHE
	FRI	CAED	IEE

Subject	Subject Name	Faculty
BMATS101	MATHS	Prof. Chethan M
BCHES102	CHE	Prof. Veda. T
BCEDK103	CAED	Prof. Puneeth H M
BESCK104C	IEE	Prof. Nataraj / Prof. Ramya CN
BPLCK105B	IPP	Prof. Veena

Dr. Nalinakshi. N
HOD
Prof. & Head
Dept. of BSE & H
Atria Institute of Technology
Anandanagar, Bengaluru-560024

2. Technical Report Writing

ATRIA INSTITUTE OF TECHNOLOGY

ANANDNAGAR, BANGALORE

Department of Basic Science Engineering & Humanities

REPORT WRITING AND PRESENTATION IN ENGLISH

The prime aim of the subject of Professional writing Skills in English is not just to impart language development to students, but also to prepare them for a real world outside their educational career. This world offers various challenges to students and therefore, this subject provides all the necessary skills required to survive in the workplace. In this regard, students were taught how to write effective reports and were also given the task of writing a report, based on certain standard procedures which were uploaded to the Quiklrn platform.

Students were also informed that their work would be graded and that they were required to conduct a survey, interpret the survey and present their findings in the form of a report and a formal presentation. Students worked effectively in the activity and came up with interesting topics on which they had surveyed and written a report. To be specific one particular team also visited a nearby orphanage to study the living conditions of the inmates and helped them in the best way possible.

The findings, recommendations, and suggestions were further presented as a team, where each member had to contribute his/her ideas to the class. The presentation followed a separate grading where students were assigned marks for their individual contribution presentation skills, self-confidence, self-grooming, and many more. Students actively participated in the activity and the output was much more effective.

Note: The activity is based on writing skills and presentation skills ,where the aim is to make the students confident enough with the usage of words .

Rubrics

Criteria	Description	Marks	Rating Scale
Professionalism in Presentation	Confidence, body language, and clarity	2	2: Excellent 1: Needs improvement
Quality of Content Delivered	Depth, relevance, and accuracy	3	3: Excellent 2: Good 1: Needs improvement
Originality and Creativity	Innovation and unique approaches	3	3: Excellent 2: Good 1: Needs improvement
Multimedia and Interactive Elements	Use of visuals, animations, and audience engagement	2	2: Excellent 1: Needs improvement
Project Report	Structure, grammar, and technical details	10	10: Outstanding 8-9: Very good 6-7: Good 4-5: Average 1-3: Poor

3. Model Preparation

Subject: Engineering Physics for CSE/ISE/ECE/ME/CV

Rubrics for activity:

Criteria	Max. Marks	Description
Identification of component	20	Identifying the correct answer for a given question carries 1 mark each.
Finding the apparatus	5	Apparatus kept in lab and student has to be collected required apparatus for given circuit.
Building the Circuit	5	Construction of given circuit.
	Total Marks (conducted)	**30 Marks**

4. Self Learning Modules

Module-3: Ordinary Differential Equations (ODE's) of first order	
Linear and Bernoulli's differential equations. Exact and reducible to exact differential equations. Applications of ODE's-Orthogonal trajectories, Newton's law of cooling. **Nonlinear differential equations:** Introduction to general and singular solutions; Solvable for p only; Clairaut's equations, reducible to Clairaut's equations. Problems. **Self-Study:** Applications of ODE's: L-R circuits. Solvable for x and y. **(RBT Levels: L1, L2 and L3)**	
Teaching-Learning Process	Chalk and talk method / PowerPoint Presentation
Module-4: Ordinary Differential Equations of higher order	
Higher-order linear ODE's with constant coefficients - Inverse differential operator, method of variation of parameters, Cauchy's and Legendre homogeneous differential equations. Problems. **Self-Study:** Applications to oscillations of a spring and L-C-R circuits. **(RBT Levels: L1, L2 and L3)**	
Teaching Learning Process	Chalk and talk method / Power Point Presentation

INTERNAL ASSESSMENT TEST II

Subject: Calculus and Differential Equations Sem: I
Date: 05.03.2022

Subject Code: 21MAT11
Max Marks : 40

USN:	1	A	T								

Time: 10:00AM - 11:30AM

Duration : 90 Min

Instructions: Answer any one full question from each part.

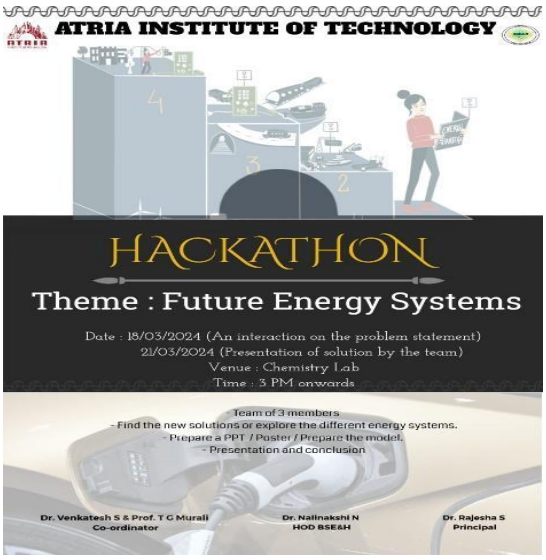
Q No.	Questions	Marks	RBT Levels	COs
	PART – A			
Q 1	a) If $u = log\left(x^3 + y^3 + z^3 - 3xyz\right)$ then find $\frac{\partial u}{\partial x} + \frac{\partial u}{\partial y} + \frac{\partial u}{\partial z}$	6	L2	CO 2
	b) If $u = x + y + z$, $y + z = uv$, $z = uvw$ then find $\frac{J(x, y, z)}{(u, v, w)}$	7	L2	CO 2
	c) A series circuit with resistance R, inductance L and electromotive force E is governed by the differential equation $L\frac{di}{dt} + Ri = E$, where L and R are constants and initially there is no current in the circuit. Find the current at any time t.	7	L3	CO 3
Q 2	a) If $u = f\left(\frac{x}{y}, \frac{y}{z}, \frac{z}{x}\right)$ then show that $x\frac{\partial u}{\partial x} + y\frac{\partial u}{\partial y} + z\frac{\partial u}{\partial z} = 0$	6	L2	CO 2
	b) Find the extreme values for the function $f(x, y) = x^3 + 3xy^2 - 3x^2 - 3y^2 + 4$	7	L3	CO 2
	c)Find the general and singular solution for $xp^2 - py + kp + a = 0$	7	L2	CO 3
	PART – B			
Q 3	a) Solve $x\frac{dy}{dx} + y = x^3y^6$	6	L2	CO 3
	b) A body originally at 80°C cools down to 60°C in 20 minutes, the temperature of the air being 40°C. What will be temperature of the body after 40 minutes?	7	L3	CO 3

5. Additional Activities

To promote higher order thinking skills for fast learners the following activities were conducted.

a. **Project Exhibition**

b. Hackathon

ACTIVITY : HACKATHON (ALTERNATIVE ENERGY SYSTEMS)
DATE: 21-03-2024
DETAILED REPORT: HACKATHON was organized on the theme "ALTERNATIVE ENERGY SYSTEMS" on 21st March 2024 in classroom CC306, from 3:00PM to 4:30PM. The event was organized by Dr. Venkatesh S. The aim of organizing the hackathon was to initiate new technologies that replace non-renewable energy systems and eco-friendly ones. Participants expressed their thoughts and opinions as they discussed with each other. The session was a kaleidoscope of opinions, thoughts, and perspectives that enhanced the knowledge and understanding of technology availability and its feasibility on a large scale. There was so much talent in the room. A presentation was made and demonstrated by each of the participants. The competition was so interesting with the exchange of students' perspectives by equally stating the merits and demerits of Technology. The event was judged by Prof. T G Murali Chemistry Department of BSE&H. The winners of this competition were: I - K K Vishwa, II - Digant S H, III - Sulaiman Sheriff
PHOTOS:    

8.4.2 ATTAINMENT OF COURSE OUTCOMES

Subject Name: Engineering Chemistry **Subject Code: 21CHE12/22**

Academic year: 2021-22 **Semester: I**

Previous Course Outcomes (COs)

1. **CO1**: Impart the basic knowledge of chemistry and its principles involved in electrochemistry, energy storage devices and its commercial applications.
2. **CO2**: Understand the basic principles of corrosion and its prevention, metal finishing and its technological importance
3. **CO3**: Master the knowledge of synthesis, properties and utilization of engineering materials like polymers & Nano materials.
4. **CO4**: Apply the knowledge of Green Chemistry principles for production of chemical compounds. Understanding the concepts of alternative energy sources.
5. **CO5**: Understand the basic concepts of water chemistry & theory, basic principle and applications of volumetric analysis and analytical instruments.

Mapping Table: CO-PO Alignment

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	1	-	-	-	-	1	-	-	-	-	-
CO2	3	1	-	-	-	-	1	-	-	-	-	-
CO3	3	1	-	-	-	-	1	-	-	-	-	-
CO4	3	1	-	-	-	-	1	-	-	-	-	-
CO5	3	1	-	-	-	-	1	-	-	-	-	-
Avg	*3*	*1*	-	-	-	-	*1*	-	-	-	-	-

Revised Course Outcomes (COs)

1. **CO1**: Apply the principals involved in electrochemistry, energy storage devices and its commercial applications.
2. **CO2**: Apply the basic principles of corrosion and its prevention, metal finishing and its technological importance
3. **CO3**: Acquire the knowledge of synthesis, properties and utilization of engineering materials like polymers & Nano materials.
4. **CO4**: Apply the knowledge of Green Chemistry principles for production of chemical compounds. Understanding the concepts of alternative energy sources.
5. **CO5**: Describe the basic concepts of water chemistry & theory, basic principle and applications of volumetric analysis and analytical instruments.

Improved CO-PO Mapping Table

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	1	1	-	-	1	-	-	-	-	-
CO2	3	2	1	1	-	-	1	-	-	-	-	-
CO3	3	2	1	1	-	-	1	-	-	-	-	-
CO4	3	2	1	1	-	-	1	-	-	-	-	-
CO5	3	2	1	1	-	-	1	-	-	-	-	-
Avg	*3*	*2*	*1*	*1*	-	-	*1*	-	-	-	-	-

Subject Name: Calculus and Differential Equations **Subject Code: 21MAT11**
Academic year: 2021-22 **Semester: I**

Previous Course Outcomes (COs)

1. **CO1:** Apply the knowledge of calculus to solve problems related to polar curves and its applications in determining the bentness of a curve.
2. **CO2:** Learn the notion of partial differentiation to calculate rate of change of multivariate functions and solve problems related to composite functions and Jacobian.
3. **CO3:** Solve first-order linear/nonlinear ordinary differential equations analytically using standard methods.
4. **CO4:** Demonstrate various models through higher order differential equations and solve such linear ordinary differential equations.
5. **CO5:** Test the consistency of a system of linear equations and to solve them by direct and iterative methods

Mapping Table: CO-PO Alignment

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	1	-	-	-	-	-	-	-	-	-	-
CO2	3	1	-	-	-	-	-	-	-	-	-	-
CO3	3	1	-	-	-	-	-	-	-	-	-	-
CO4	3	1	-	-	-	-	-	-	-	-	-	-
CO5	3	1	-	-	-	-	-	-	-	-	-	-
Avg	*3*	*1*	-	-	-	-	-	-	-	-	-	-

Revised Course Outcomes (COs)

Subject Name: Mathematics-I for Computer Science and Engineering stream
Subject Code: BMATS101
Academic year: 2022-23 **Semester: I**

CO1 : Apply the knowledge of calculus to solve problems related to polar curves and learn the notion of partial differentiation to compute rate of change of multivariate functions

CO2:Analyze the solution of linear and nonlinear ordinary differential equations

CO3: Get acquainted and to apply modular arithmetic to computer algorithms

CO4:Make use of matrix theory for solving for system of linear equations and compute eigen values and Eigenvectors

CO5:Familiarize with modern mathematical tools namely MATHEMATICA/MATLAB/ PYTHON/ SCILAB

CO-PO Mapping Table

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	1	-	-	-	-	-	-	-	-	-	-
CO2	3	1	-	-	-	-	-	-	-	-	-	-
CO3	3	1	-	-	-	-	-	-	-	-	-	-
CO4	3	1	-	-	-	-	-	-	-	-	-	-
CO5	3	1	-	-	-	-	-	-	-	-	-	-
Avg	*3*	**1**	-	-	-	-	-	-	-	-	-	-

8.5.1 EVALUATION OF PO / PSO

1. Workshop on Teaching Learning Process

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ACTIVITY CONDUCTED REPORT

Activity Name:	**TLC - Reflective session**
Resource Person	**Dr. Kavitha S Patil**
Co-ordinator:	**Ms. Kanchana S K**
Date:	**16th November 2023**
Duration:	**4.00 to 5.00 p.m.**
Participants:	**Faculty members of 1st Year**

ACADEMIC YEAR 2023-24

ATRIA INSTITUTE OF TECHNOLOGY,
Adjacent Bangalore Baptist Hospital, Hebbal, Bengaluru - 560 024

TABLE OF CONTENTS

POSTER

PROGRAM SCHEDULE

4.00 pm – 4.15pm	Introduction to TLC activities
4.15pm – 4.45pm	Faculty members share experiences of TLC activities done in class and report verification
4.45pm – 5.00 pm	Feedback from TLC team

SESSION REPORT

SESSION REPORT					
Session Name	TLC Reflective Session				
Resource Person	Dr. Kavitha Patil S				
Date	16th Nov 2023	Time from	4.00 pm	Time to	5.00 pm
Intended Participants	Faculty members of Dept. of ISE				
List of activities conducted					
1. **Review of various TLC activities and its need.** 2. **Recalling OBE concepts and Vision & Mission of Dept. and College** 3. **Steps to attain Vision & Mission through TLC activities** 4. **Elaborations of PO, PSO's that matches with TLC activities** 5. **Sharing Faculty members experience's of conducting TLC activities in class of their respective subject.**					
Summary (Provide in detail report of session progress)					
TLC reflective session is started by briefing about various in class activities carried out in TLC process. Addition to that, OBE concepts have been touched to understand CO,PO and PSO's, thereby can fulfill Dept. and College – Vision and Mission together Faculty members shared the activities carried out in classes and their experience's with students about their views and feedbacks on conducting these activities. TLC Activity reports has been verified by TLC team .					

PHOTOS


GPS Map Camera
Bengaluru, Karnataka, India
145, near atria college, Ags Colony, Anandnagar, Hebbal, Bengaluru, Karnataka 560024, India
Lat 13.032425°
Long 77.59174°
16/11/23 04:08 PM GMT +05:30
Google


GPS Map Camera
Bengaluru, Karnataka, India
145, near atria college, Ags Colony, Anandnagar, Hebbal, Bengaluru, Karnataka 560024, India
Lat 13.032425°
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GPS Map Camera
Bengaluru, Karnataka, India
ASKB Campus, Ags Colony, Anandnagar, Hebbal, Bengaluru, Karnataka 560024, India
Lat 13.032658°
Long 77.592918°
16/11/23 04:09 PM GMT +05:30
Google


GPS Map Camera
Bengaluru, Karnataka, India
ASKB Campus, Ags Colony, Anandnagar, Hebbal, Bengaluru, Karnataka 560024, India
Lat 13.03265°
Long 77.593083°
16/11/23 04:25 PM GMT +05:30
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2. Workshop on Outcome Based Education

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ACTIVITY CONDUCTED REPORT

Activity Name:	**Outcome Based Education**
Resource Person	**Dr. Rajesha S**
Co-ordinator:	**Mr. Tejas J**
Date:	**16th November 2023**
Duration:	**3.00 to 5.00 p.m.**
Participants:	**Faculty members of AIT**

ACADEMIC YEAR 2023-24

ATRIA INSTITUTE OF TECHNOLOGY,
Adjacent Bangalore Baptist Hospital, Hebbal, Bengaluru - 560 024

REPORT ON OBE

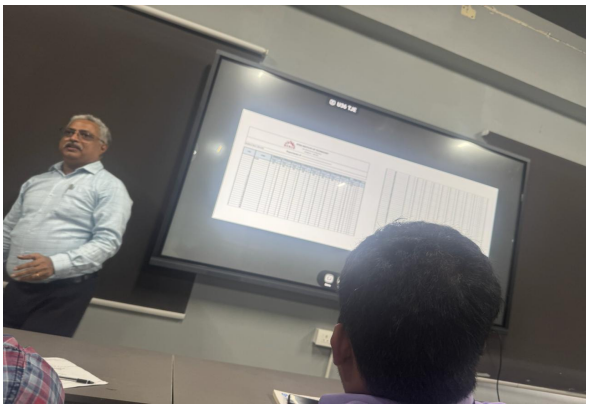
The session began with the Resource Person - Dr. Rajesha S, bidding a warm welcome to the first-year faculty. He stated that, in line with the implementation of the autonomous syllabus, it was mandatory to follow specific OBE practices, which would streamline the documentation process in the long run. To get a hold of these practices it was important for all the faculty members to understand the concept of Outcome Based Education and the various documentation procedures to be followed. This session served the purpose of the same.

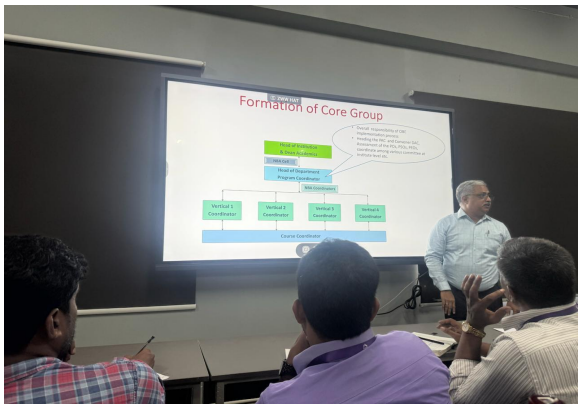
The following are the aspects the session mainly focused on:

- Development of assignments, including designing, evaluation, and preparation of rubrics
- Identification of gaps in the curriculum and ways to bridge the gap along with corrective actions. The actions could include special lectures, seminars or major projects, quizzes, mini projects, etc.
- Assessing learning outcomes by comparing them with intended objectives and redesigning the program to improve learning outcomes
- Identifying module-wise coordinators and mapping the respective module to future skills acquired by students
- Active engagement of classroom activities to ascertain the attainment of POs and PEOs
- Formulation of Program Matrix by incorporating the vertices provided by Vertical and Program Coordinators

- Explanation of the Contents of Course File that included necessary documents to be maintained.
- Course Coordinator to prepare the Course Closure Report accordingly
- All faculty members will maintain individual course files, and every student's progress will be monitored every academic year from the 10th grade until the completion of the degree. Students will be categorized into different slots and guided accordingly. Furthermore, mentoring will be provided to help students move further on the academic ladder.

With these instructions, the meeting came to a close and the faculty handling the Lab sessions were informed that a separate session on the procedures and documentation process for the Labs will be held in the coming days.





8.5.2 ACTION TAKEN ON EVALUATION OF PO/PSO

a. IQAC Academic Audits

IQAC Department conducts regular academic audit every semester.

ATRIA INSTITUTE OF TECHNOLOGY

Academic Audit Checklist

Academic Quality Process Compliance

ACADEMIC QUALITY ASSURANCE REPORT– Even Semester 2022-23

DEPARTMENT BSE & H

DATE AND TIME 03.04.2023 @ 2.00 PM

Audit Checklist

Academic Process Compliance Auditing

AUDIT SCORING CRITERIA

Finding	Definition/Impact	Action/Mitigation
COMPLIANT	Compliant means adherence with the requirements of the standard and the QMS. The process is implemented and documented and records exist to verify this.	Continue to monitor trends/indicators.
Opportunity For Improvement (OFI)	**A low risk issue** that offers an opportunity to improve current practice. Processes may cumbersome or overly complex but meet their targets and objectives. Unresolved OFIs may degrade over time to become non-compliant.	Review and implement actions to improve the process(s). Monitor trends/indicators to determine if improvement was achieved.

SL. NO	AUDIT QUESTIONS	AUDIT FINDINGS		AUDIT EVIDENCE	OPPORTUNITIES FOR IMPROVEMENT (OFI)
		COMPLIANT	OFI	Provide reference to documented information to justify the finding	Provide suggestions for process improvement
1.	Is the gap analysis document completed? 1. Gaps identified 2. Proof of gap identification and analysis 3. Process details for filling the gaps	✓ ✓ ✓		Checked One Sample in Physics	—
2.	Proof of participation in VTU syllabus review, if any? 1. E-mail written to VTU 2. BoS member details 3. Attended meeting from VTU	✓ ✓ ✓		Seen.	—
3.	Academic Course file Review? 1. Lesson Plan 2. Lesson Schedule 3. QP scheme and solution 4. Online Class report (if applicable)		✓ ✓ ✓ ✓	Partial differential Equation & Vector Calculus & Mathematics Lab using C++ Course file not Seen	—
4.	Student feedback and action taken? 1. Formative feedback 2. Action taken report 3. Improvement in summative feedback	✓	 ✓ ✓	* Action Plan to be maintained. * Improvement in Summative to be Shown.	

SL. NO	AUDIT QUESTIONS	AUDIT FINDINGS		AUDIT EVIDENCE	OPPORTUNITIES FOR IMPROVEMENT (OFI)
		COMPLIANT	OFI	Provide reference to documented information to justify the finding	Provide suggestions for process improvement
5.	Parent teacher meeting? 1. PTM circular 2. PTM Records	✓ ✓		Document Seen.	
6.	Alumni activities? 1. Alumni coordinators 2. Alumni meet circular 3. Alumni meet Report			NA	
7.	Activities conducted - faculty and students? 1. Consolidated list 2. Report and Certificate			Consolidated list partial Seen.	To be organized sequencely.
8.	Activities attended -faculty and students? 1. Consolidated list 2. Report and Certificate	✓	✓	Consolidated list. partial Seen.	Document to be filled properly
9.	Active MOUs with activities if any? 1. MOU signed document 2. Activities done with details	—	—	NA	—
10.	Internship 1. Internship details 2. Internship Report and certificate	—	—	NA	—
11.	Industry-interaction 1. interaction details 2. Proof	—	—	NA	—

SL. NO	AUDIT QUESTIONS	AUDIT FINDINGS		AUDIT EVIDENCE	OPPORTUNITIES FOR IMPROVEMENT (OFI)
		NON-COMPLIANCE	OFI	Provide reference to documented information to justify the finding	Provide suggestions for process improvement
12.	Budget 1. Budget approval 2. Details of expenditure with closing report		✓	2021 – 2022 Budget not Seen.	
13.	Subject allotment 1. Competency matrix 2. Subject allotment details	✓	✓	Competency Matrix. not seen. Subject allotment Seen	
14.	Result analysis 1. IA result analysis 2. Corrective actions taken 3. Weak students addressed 4. Meritorious students addressed 5. SEE analysis	✓ ✓	 ✓ ✓ ✓ 	Hard Copy not seen Corrective action document to be maintained Only list available List not seen action plan not seen	
15.	Student progression 1. Semester wise results of students with success rate		✓	Student progression document not Seen.	
16.	Research centre data, if applicable 1. Research lab details 2. Funding		 ✓ ✓		Research lab details not Seen
17.	Activities under special labs, if any 1. CoE labs identified 2. Activity details	–	–	NA	–

4

SL. NO	AUDIT QUESTIONS	AUDIT FINDINGS		AUDIT EVIDENCE	OPPORTUNITIES FOR IMPROVEMENT (OFI)
		CONFORMITY	OFI	Provide reference to documented information to justify the finding	Provide suggestions for process improvement
18.	Research publications (both conference and journal) 1. Details in the table 2. Certificate		✓ ✓	Publication Document seen	Nil
19.	Project 1. Project committee and MOM 2. List of Projects with Title and Guides 3. Communication to students 4. Presentation details 5. Rubrics and Evaluation details 6. Funding if any	✓ —	—	NIL	—
20.	Details of innovative methods of teaching, if any (like flip class.....) 1. Details and proof	✓		None of the Hods Conducted Class.	
21.	Department meetings? 1. Circular 2. Minutes 3. Attendance	✓		Document Seen.	

Audit Team:

Sl. No.	Auditor Name	Date and time of audit	Signature
1	Dr. Shanthi Rakesh	3.4.2023/Forenoon	
2	Vasanthi S	—"—	
3	Dr. P. Vijayakarthik		
4			

Received
for
05/04/23

Prof. Vasanthi S
IQAC Head
Atria Institute of Technology
Anandnagar, Bangalore - 24

b. Academic Audit Action Taken Report

ATRIA INSTITUTE OF TECHNOLOGY
ANANDNAGAR, BANGALORE - 560024
DEPARTMENT OF BASIC SCIENCE ENGINEERING & HUMANITIES

ACADEMIC AUDIT ACTION TAKEN REPORT
EVEN SEMESTER - 2022-23

Sl. No.	Audit Files	Observation	Action Taken	Remarks
1	Academic Course File Review	Partial Differential Equation(BSc.) and Mathematics Lab using C++ file is not maintained	The file is updated and maintained	
2	Student Feedback and Action Taken	Action plan to be maintained improvement to be shown in the summative	Action plan is reported and the document is maintained	
3	Activities conducted - student	Feedback given by students to be maintained. Document to be filed sequentially. Proof of registration must be maintained (Google sheet)	File is updated and ordered accordingly	
4	Activities conducted-faculty	Index Sheet to be reworked and filed accordingly	File is reworked and updated	
5	Budget	2021-22 budget to be updated	File is updated	
6	Subject Allotment	Competency Matrix to be updated	File is updated	
7	Result Analysis	IA result analysis to be made. List of weak and meritorious students to be prepared and corrective actions taken must also be maintained.	Necessary changes are made and file is updated accordingly	
8	Student Progression	List of students who cleared I year must be categorized	Document is updated	
9	Research Centre Data	Details under research lab such as facilities available must be maintained.	File is updated	
10	Details of innovative methods of teaching	Name of the innovative teaching method implemented must be mentioned in each of the reports	Necessary changes are incorporated	

Signature of the HoD.
Dr. Nalinakshi. N
Prof. & Head
Dept. of BSE & H
Atria Institute of Technology
Anandanagar, Bengaluru-560024

IQAC Head