Innovations by the Faculty in Teaching and Learning (

Teaching and learning innovative practices encourage the students to have interactive sessions. The faculty members of Information Technology department strive to deliver to the best of their capacity, knowledge and curriculum. They enhance the student learning by adapting student centric methods. It helps the students to understand the concepts well and creates interest about the subject and improves etiquettes and desire to understand. It also improves academic performance and motivates participation in co-curricular activities. The process of teaching includes use of smart boards and projectors for showing and editing various study models online. It also enables students to save the work for review at home.

Following are the best and innovative practices undertaken by the faculty members for improving teaching and learning experience.

Sr.	Innovative	Goal	Reflection/ Significance of
No	Practices		Result
1	LMS/ Teams /	To make study material available	Students are more actively
	Drive	to the students and facilitate	engaged with course material that
		continuous assessment.	lead to greater learning gains.
2	Project-Based	To expand technical	Students get the opportunity to
	Learning/	understanding through	explore theory to research and
	Collaborative	development in terms of software	present a pilot project with a
	Learning/ Live	solutions and hardware	possibility of further development.
	Case	implementation for industrial /	They also develop skills and
	Studies/Industria	societal problems.	understanding within a particular
	l visits		field.
3	Group	To share thoughts, listen to	Helps students exercise critical
	Discussion	others, and explore topics in-	thinking by analyzing and
		depth.	evaluating different viewpoints
			and arguments. Helps in
			communication of ideas;
			Encourages team work
			(collaboration and co- operation);
			Opportunity for authentic skill

			development; Opportunity to
			develop & assess Higher order
			thinking skills.
4	Expert Lectures	To bridge the gap between	Helps to understand the recent
		syllabus and recent trends in	developments in Industry
		industry.	
5	Quizzes	To impart knowledge and	Helps in preparation of the topic at
		understanding about particular	the earliest and best way to
		module as part of continuous	remember by solving MCQ
		assessment process in teaching	
		and learning.	
6	Mind Mapping	To motivate students for self-	Students develop skills in
	Activity/ Think-	study and group study.	interpersonal communication and
	Pair-Share		able to express views in a clear and
	Activity		concise manner. Helps in assessing
			Higher order thinking, values &
			attitude; Promoting creative and
			innovative solutions. Make
			students alert and active in the
			class. Mind map helps to identify
			associations between different
			elements and can be used for quick
			review of key points
7	Videos	To encourage the students to	Helps student to get anytime
		view the videos as it is one of the	access and thorough revision.
		best and frequently used learning	
		platform.	
8	Flip Classroom	To motivate the students to learn	Students are more actively
		the concepts thoroughly.	engaged with course material that
			led to greater learning gains
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Table : Innovations in Teaching and Learning

Following are the activities conducted by the faculty:

A. Learning Management System(LMS): While carrying out teaching activities, faculty members use state of the art technology like LMS, where the lecture wise Power point presentations, reading material, Question bank, Discussion forum, quiz, Assignments and university question papers are provided online to benefit the students

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- **B.** Academic Performance Management System (APMS): APMS is used by faculty as well as students. The class wise attendance is being updated by the respective subject teacher on the website. This enables the subject teacher to facilitate the computing work of attendance and also gives an overall view of the attendance. Internal exams and various test marks along with practical's marks can also be uploaded. This further enhances the maintainability of the marks as a whole. Also helps in facilitating outcome based assessment with summary of marks and co-po mapping.
- C. Project-based learning (PBL): PBL in the form of course projects is introduced in some subjects that involves a dynamic classroom approach so that students acquire a deeper knowledge through active exploration of real world challenges and problems. Apart from the course projects, mini project and major project, students are encouraged for developing and completing Mini-projects based on their field of interest during summer vacation after completing IV-Semester exams. Beginning of the V-Semester they have to showcase their

work and present in front of panel members (group of 2-3 faculty). This enhances students' teamwork, communication, and presentation skills. They also learn ethical standards. We also encourage students to participate in various project development competitions. Every year students are participating in various Hackathons and securing prizes also.



Figure 2: Course Project for Internet of Everything



Figure 3: Summer Project Presentation

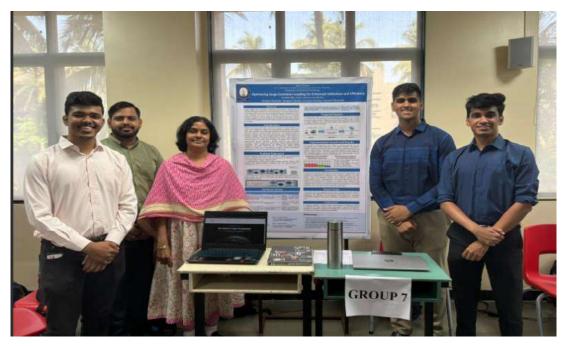


Figure 4: Project Poster Presentation Competition

- **D. Encouragement of self-learning:** Students are encouraged for self-learning. The activities used in the department for students self-learning include:
 - Home Assignments
 - Case Studies
 - Major and mini project works
 - Web-based learning
 - Flip Classroom
 - Student driven seminars.
- **E. Group Discussion:** Group Discussions are made among students to emphasis on learning and sharing. Differences in opinions are explicitly marked during discussions. Students are groomed to participate in group discussions in healthy manner by accepting the criticism in positive way.



Figure 5: Group Discussion

F. Live Case Studies: Live case studies are discussed with students for better understanding of the courses and current trends in the industry.



Figure 6: Discussion on Live case study for Entrepreneurship and E-Business

G. Expert lectures: To bridge the gap between syllabus and recent trends in industry, the concept of content beyond syllabus is introduced. Guest/Expert lectures on advanced technologies are conducted for students and faculty.



Figure 7: Expert Lecture on Current Industry Trends for Data Science and AI

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Figure 8: Feedback of Expert Lecture

H. Mind mapping activity: Students are asked to portray real life applications and all requirements that support that applications. Students are asked to draw mind map and present that in front of class.

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Figure 9: Sample Mindmap drawn by student on application of Blockchain



Figure 10: Students engaged in Mindmap activity

I. Think Pair Share(TPS): In TPS a topic is allocated to students and each one writes their perspective on the topic and then discusses the same with other member and after some brainstorming session presents to the class.

FR. CONCEICAD RODRIGUES INSTITUTE OF TECHNOLOGY, VASHI Name : Tapmary C Kachare MAN NO PATIL ROLL NO : 502700 4 D MIG 1sem Branch: 1 5 6 Date: 19/03/24 Ar- DS Sybject : TPS activity Definition #) Problem cohether basis of of -the network will Classification. predictions made fail the. not on OX poieus -Following metrics (prediction metrics (1) Measuring coverage area No of users p 1 69.Km (i) DPY iri's Signal strength iv) Power consumption Bandwictth. VI #) Superised learning linear using multivgnia the cont be regression for CR votio classification of ć Bosed on that by using such lassify algorithms Vector 05 SVM Machine) Support can c the net ω cohe the 2005 COE -Kail not or

Figure 11: Sample copy of TPS activity



Figure 12: Students presentation on TPS activity

J. Quizzes: Quizzes are conducted as and when required. It helps students to understand the topic in-depth.

MCQ1-AIDS-1_FH24 (10 Points)
1. Which is more appropriate definition artificial intelligence? (CO-1) * (1 Point)
O Playing games
◯ Making machines intelligent ✓
O Making Artificial machines
O Making Automatic machines
2. Arrange the agents in increasing order of intelligence: (CO-1) * (1 Point)
O Utility, reflex, model based, goal
🔘 Reflex, model, goal, utility 🗸
Goal, model reflex, utility
Model, utility, reflex, goal

Figure 13: Sample Quiz conducted for AIDS-I Course

Responses	Average	e Score		Average Time	-
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. Which is more appropriate defi		ce? (CO-1) (1 point)			More deta
92% of respondents answered this qu	estion correctly.				
				5%	
Playing games	0				
 Making machines intelligent 	56 🗸				
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				92%	
. Arrange the agents in increasis	ng order of intelligence: (CO-1) (1 point)			Mere deta
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Figure 14: Sample Response of Quiz conducted for AIDS-I Course

K. Flipped Class room: It is a blended learning strategy with the aim to improve student engagement and outcomes. This method requires students to prepare learning before they meet and engage with peers in purposeful activities.



Figure 15: Flip Classroom Activity

	V Active			Insights and actions
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1. Did you find the activity • Yes 71 • No 0	engaging?	(More chirado	Multa Nivelkar > Documents
			100%	

Figure 16: Feedback on Flip Classroom Activity

L. Videos: Videos are used to enhance the overall comprehension of students and allows teachers to present their lessons in a more dynamic way.

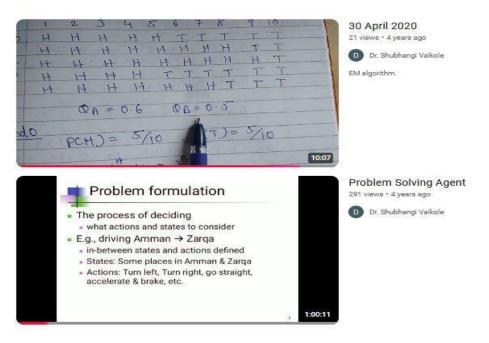


Figure 17: Videos present on Faculty's You Tube Channel

M. Industrial Visit: Industrial visits are arranged for all year of students to get exposure to industry. It helps the students to understand the working/development of any product/process related to that industry.



Figure 18: Industrial Visit arranged for TE Students