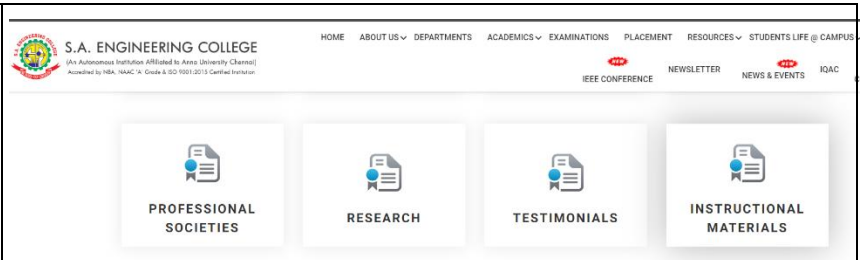
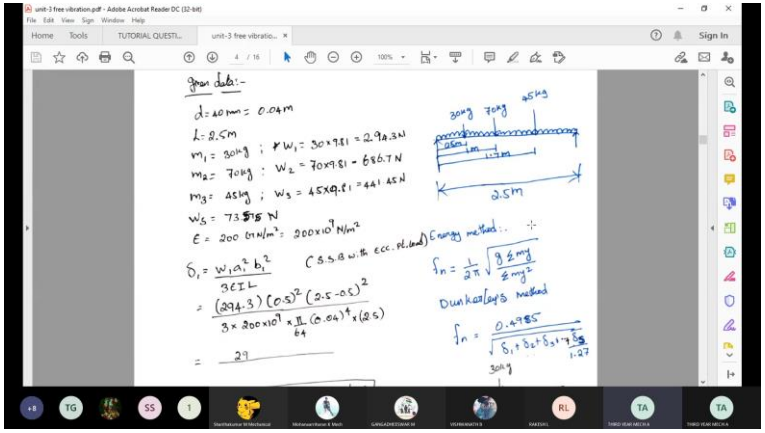
S.A. ENGINEERING COLLEGE

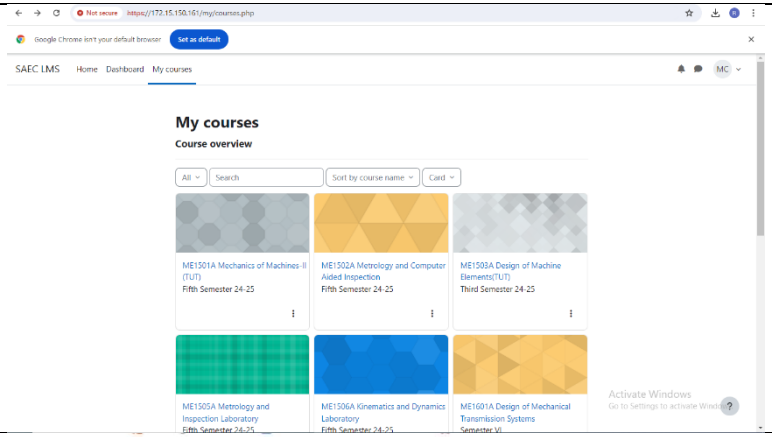
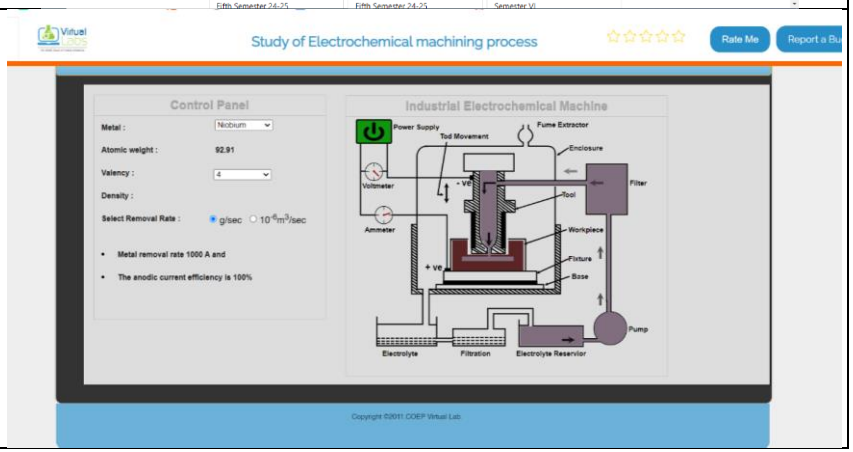
(An Autonomous Institution Affiliated to Anna University)

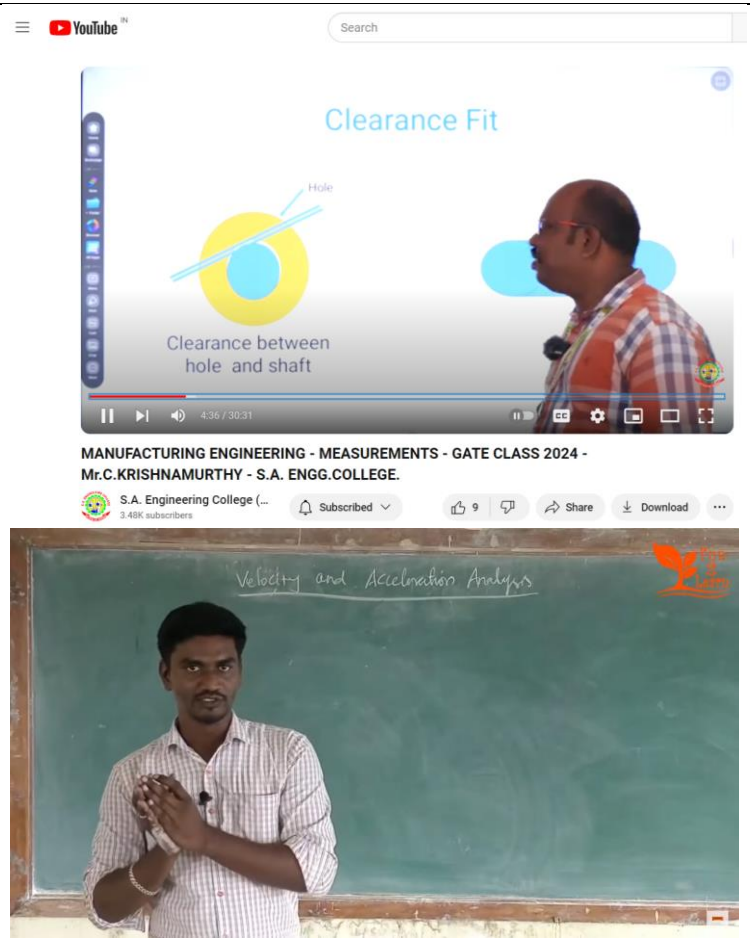
Department of Mechanical Engineering

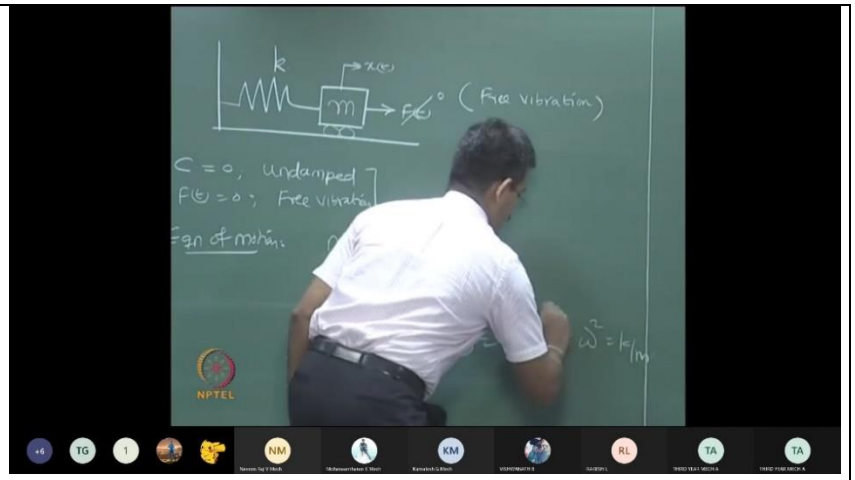
INNOVATIVE TEACHING METHODS

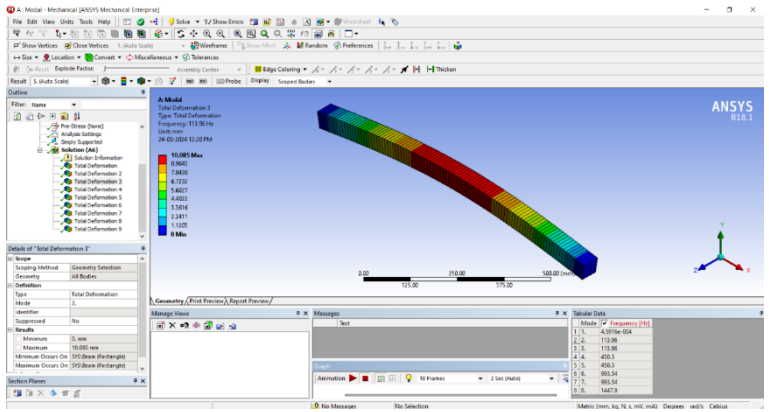
S No.	Innovative Teaching learning Techniques	Activities	Objectives	Outcomes	Sample
1	ICT Tools	Conduction of Teaching-Learning Process by integrating tools such as interactive boards and projectors.	To enhance student engagement, facilitate interactive learning, and improve the comprehension of complex concepts by leveraging visual and interactive tools.	Students demonstrated an increased interaction & discussion during class sessions.	

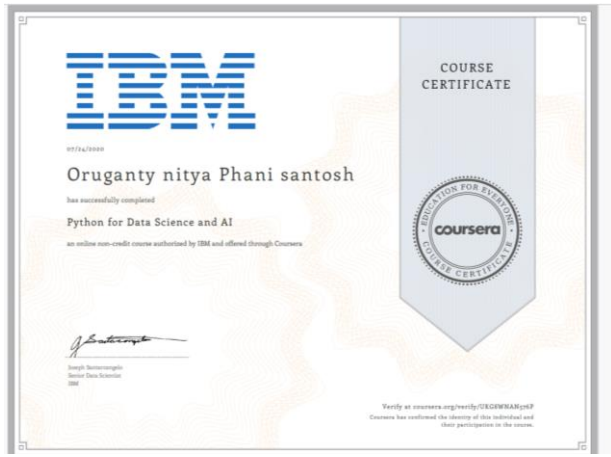
		E-Resources: Notes, PPT & Question banks available in website	To provide easy access to study materials, support self-paced learning, and ensure consistent availability of resources.	Students gain continuous access to study materials, enabling them to learn at their own pace, leading to improved academic performance and better retention of knowledge.	
		Microsoft Teams	To enable the smooth conduct academic activities during pandemic.	Seamless academic operations were ensured, enabling students to continue their education effectively during the pandemic.	

		Learning Management System	To organize, deliver, and track educational content efficiently.	This enabled effective management and monitoring of educational content dissemination.	
		Virtual labs (https://www.vlab.co.in/)	To aid in enhancing the theoretical concepts taught and to provide students with accessible, interactive simulations for hands-on learning.	Students will gain a deeper understanding and better retention of theoretical concepts through interactive simulations and practical application.	

		Videos by Faculty	To enhance understanding of complex topics through visual and verbal explanations directly from the faculty.	Students demonstrate an improved grasp of challenging concepts and better retention through direct faculty guidance.	

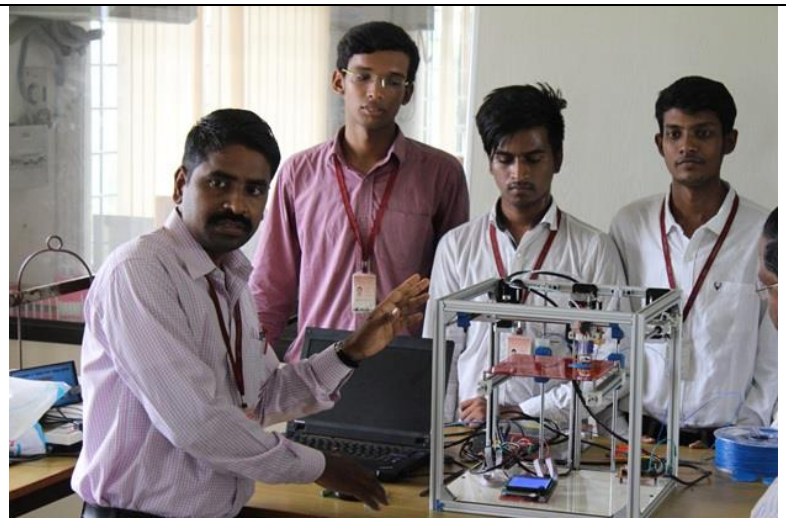
		Live NPTEL Sessions	To enhance student learning by providing access to expert-led instruction and interactive engagement with faculty on advanced topics.	Students gain a deeper understanding of advanced topics, benefiting from the knwoledge shared by experts.	 

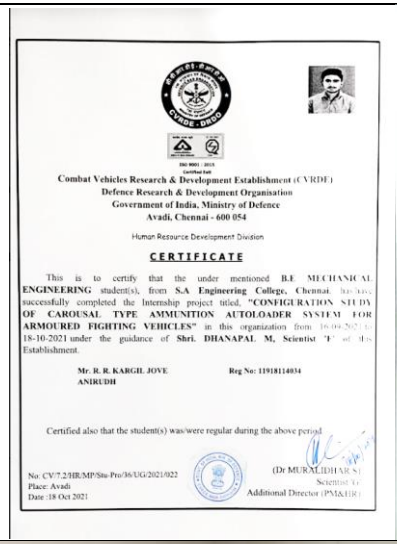
2	Instruction delivery & Instruction Method	Usage of software tools (Creo, Ansys, Matlab & Simulink) to teach concepts	To enhance understanding of complex engineering concepts through practical application and simulation using industry-standard software tools.	Students achieve a clearer understanding of complex engineering concepts through practical application and simulations using industry-standard software tools.	 Usage of ANSYS to teach about the mode shapes and natural frequencies
		Static & Working models to aid in teaching the students	To provide hands-on learning experiences that reinforce theoretical concepts through tangible demonstrations.	Students gain a deeper understanding of theoretical concepts through hands-on learning experiences and tangible demonstrations.	

		MOOCs	To provide flexible, accessible, industry-relevant resources that enhance practical skills and complement traditional education in emerging technologies.	Learners develop practical skills and industry-relevant knowledge in emerging technologies, effectively supplementing their traditional education.	• Students are encouraged to attend Online courses via MOOC platforms such as: Coursera  Matlab – Learning 

		Experiment Based Learning	To enhance students' understanding of theoretical concepts through hands-on experimentation, fostering practical skills, and deeper engagement.	Students gain a solid understanding of concepts, develop practical skills, and enhance their ability to solve problems and apply knowledge in real-world situations.	
3	Inclusive Classroom	Project-Based Learning	To enable the students to implement the concepts learnt in courses upto the 5th semester in mini projects and upto the 7th semester in the main projects	Students effectively apply the concepts learned in the mini and main projects.	

		Employability Skill Development	To enhance students' job readiness by developing essential skills such as communication, problem-solving, and teamwork.	Students exhibit improved job readiness through enhanced communication, problem-solving, and teamwork skills.	 

		Research-Based Learning	To prepare students for advanced academic pursuits or professional careers in research.	Students are better equipped for postgraduate studies or careers in research-intensive fields.	
4	Industry Interaction	Guest lectures are delivered by Industry professionals	To provide students with real-world insights and practical knowledge from industry experts, enhancing their understanding of current industry practices and trends.	Students gain industry insights, practical knowledge, and a deeper understanding of current trends and practices, which enhances their readiness for professional environments.	 Mr. R. Sudhahar, Director at CADDCAMM Solutions, discussed the application of reverse and value engineering in fluid flow components. He emphasized the role of these techniques in optimizing design, reducing costs, and improving the performance and reliability of fluid systems.

		Internship	To provide hands-on experience and real-world exposure through practical work in industry settings, enhancing professional skills and understanding of the field.	Students acquire practical skills and real-world insights, improving their understanding of industry practices and enhancing their professional readiness.	 Combat Vehicles Research & Development Establishment (CVRDE) Defence Research & Development Organisation Government of India, Ministry of Defence Avadi, Chennai - 600 054 Human Resource Development Division CERTIFICATE This is to certify that the under mentioned B.E MECHANICAL ENGINEERING student(s), from S.A Engineering College, Chennai has successfully completed the Internship project titled, "CONFIGURATION STUDY OF CAROUSAL TYPE AMMUNITION AUTOLOADER SYSTEM FOR ARMOURED FIGHTING VEHICLES" in this organization from 16-09-2021 to 18-10-2021 under the guidance of Shri. DHANAPAL M, Scientist 'F' of this Establishment. Mr. R. R. KARGIL JOVE ANIRUDH Reg No: 1191811403 Certified also that the student(s) was/were regular during the above period. No: CV/7.2/HR/MP/Stu-Pro/36/UG/2021/022 Place: Avadi Date :18 Oct 2021 (Dr MURALIDHARS) Scientist 'G' Additional Director (PMA&HR)  TVS Sundaram-Clayton Limited Date:26.10.2021 Certificate TO WHOMSOEVER IT MAY CONCERN This is to certify that Mr. Ganesh S, BE (Mechanical Engineering) student from S.A Engineering College, Chennai has successfully completed his internship with our organization from 27.09.2021 to 26.10.2021. We wish him all the best in his future endeavors. For SUNDARAM-CLAYTON LIMITED Gomathy Sree S Assistant Manager - HR
		Value added courses	To enhance students' knowledge and skills beyond the standard curriculum, making them more competitive and better prepared for industry demands.	Students gain specialized expertise, improving their employability and readiness to meet industry challenges effectively.