



SRI VENKATESWARA COLLEGE OF ENGINEERING

(AUTONOMOUS)

(Approved by AICTE | Accredited by NAAC with 'A' Grade |
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Karakambadi Road, Tirupati - 517 507.

Innovations by the Faculty in Teaching and Learning

The term “Innovation” in teaching and learning is intrinsically quite broad in perspective and there are a number of views on how to define it. In the department of Mechanical Engineering of SVCE-Tirupati, we define it as follows:

“Any teaching strategy, approach, technique, or tool can qualify to be termed as an innovation if it is used, or used in a new way, to produce quantifiable gain for student outcomes or the student experience, and can be implemented widely”


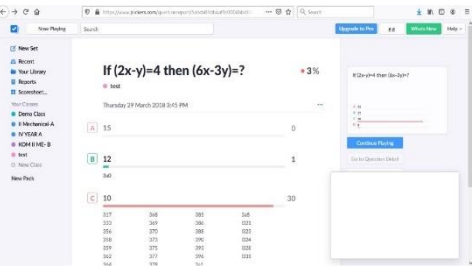
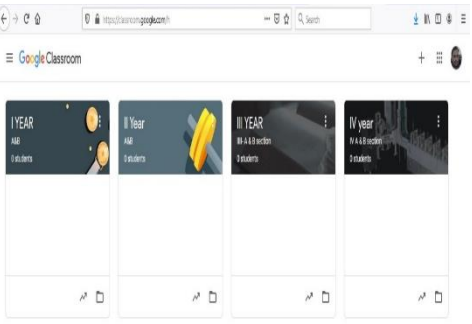
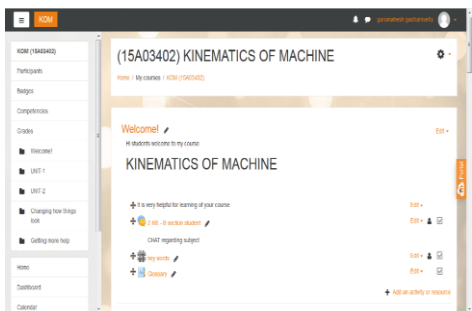
Many of such innovative initiatives taken by faculty and staff of the department can be observed in the Course Files, Laboratory Manuals and other documents that are maintained in the department.




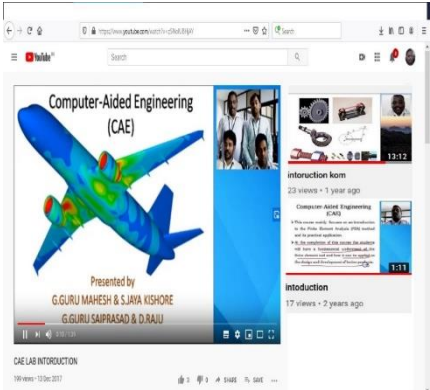
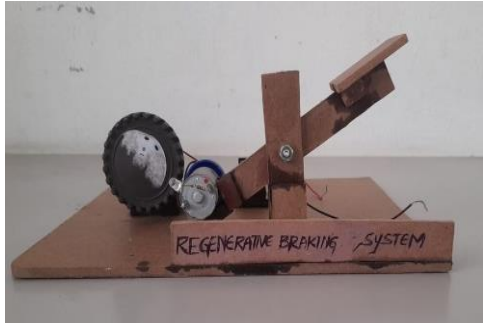
Statement of goals for innovations in teaching and learning

Realizing the necessity of innovative ideas in the teaching-learning process, and their subsequent implementation through quantifiable initiatives, the following goals have been set apart from the standard teaching-learning experience imparted in class rooms, the department will continuously strive to:

- Enrich the learning experience of students through innovative tools and techniques
- Enhance the understanding and knowledge of students with innovative tools and techniques
- Broaden the perspective of students in matters relating to academic, contemporary as well as social issues using innovative tools and techniques
- Motivate the students to think, formulate and act innovatively themselves.

Pedagogical Methods

S. No.	Pedagogical Methods	Activities	Sample Photos
1	FLIPPED Class Room	Study material is made available in online/offline mode through WhatsApp groups to the students prior to teaching	
2	Plickers	Conducting quiz exams in Class Rooms.	
3	GOOGLE Class Room	Students are made to join as members of the Google Classroom. Notes materials, Assignments, Quiz Questions are posted in the app.	
4	Moodle Cloud PLATFORM	Online Learning Management System (LMS)	

5	Interactive e-lessons	<p>The students will be shown the NPTEL Videos on the lecture topics of the resource persons from IITs, NITs, etc.</p> 	
6	Seminars & Assignments	<p>The students will be given the assignment topics and made them to present seminar in the class room and submit the report.</p>	
7	e-Content Development through YouTube Videos	<p>Faculty will develop online videos on different topics</p>	
8	Project based learning	<p>Faculty will develop project models to teach real-time applications</p>	

1. **Department Space Submissions:** Faculty of the department regularly upload a lot of academically relevant documents on the Department Space repository of SVCE. The portal is directly accessible from the institutional website svce.edu.in. The submissions include power point presentations, articles, lecture notes, lab manuals and many other useful documents that are beneficial for the students.
2. **Club Activities:** There are 3 clubs that are currently being run by the Department of Mechanical Engineering:
 - (i) SAE INDIA Collegiate Club
 - (ii) e- yantra Club

 - (iii) Arts and Crafts Club

Various club activities in these club's act as excellent grounds for innovative learning. In these clubs, the faculty are not the only disseminators of knowledge; senior students (older club members) pass on their knowledge and learning to the younger generation (new club entrants) via a continuous ritual-like process, which includes hands-on training, presentations, lectures, group discussions and many other innovative procedures. These clubs with their club activities literally act as the most fertile grounds for innovations in the teaching-learning process.

3. **Virtual Labs:** In certain labs, for instance the vibration engineering lab, some relevant experiments are conducted online on web browsers with the help of simulators. Such online facilities are called as virtual labs (<http://www.vlab.co.in/>), and are a part of an excellent innovative initiative taken by the MHRD of India.
4. **MOOCS:** MOOCS or Massive open online courses are a relatively new entry in the academic sector throughout the world. Although the role of MOOCs in effective dissemination of knowledge is still under debate, they are speedily gaining unquestioned acceptance in more and more academic circles as an innovative means of imparting additional knowledge to students. Here at SVCE, we support augmenting our own efforts of effective delivery by MOOCs available through agencies like NPTEL and SWAYAM.

5. **Miniature Scale Models:** In many relevant subjects, faculty encourage the students to make miniature working models of mechanisms and machine components. Thus, enhancing interest and level of learning.
6. **Power Point Presentations:** Use of this widely accepted technique is done wherever deemed necessary in the department. This has actually become a standard norm in the teaching-learning process, and is facilitated by the fact that all our classrooms are well-equipped with high quality projectors ready for use any time.
7. **Additional Effort for Weak Students:** Students unable to score well in the term exams are identified and are given more attention by faculty. In many cases, they are tasked with additional assignments to enhance their understanding of respective subjects.
8. **E-mail Correspondence with Students:** Faculty frequently engages in e-mail correspondence with the students to share notes, remarks, assignments and test results. This significantly boosts the out-of-class learning experience of students.
9. **Student Presentations:** In many relevant subjects, students deliver presentations to the rest of their classmates. This significantly boosts students' confidence and their learning experience.
10. **Audio-Visual Learning:** In many subjects (wherever necessary) audio-visual aids are used. It is a proved fact that audio-visual presentations in the classrooms are more effective in capturing the attention of students.
11. **Classroom Quiz Sessions:** These help in creating interest by breaking monotony of regular classes while enhancing the learning experience.

Faculty Developed Video Content

S. No.	Faculty Names	YouTube links
1	G. Guru Mahesh	https://www.youtube.com/@gurumaheshg8442 .
2	Dr. N. Rajesh	https://www.youtube.com/channel/UC3KgWgsHf6NtiWsebwZ920Q .
3	Dr. K. Renugadevi	https://www.youtube.com/@renukaedutalks9981/videos .
4	GATE Lectures	https://www.youtube.com/playlist?list=PL1e-xo1hLAIQ9CbkeLe3fN2MIV63mdzf